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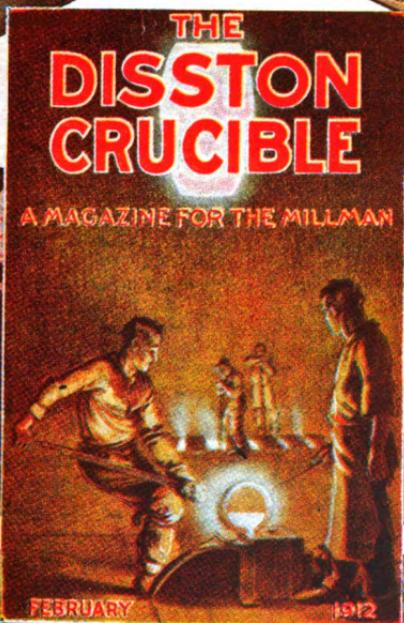
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DISSTON CRUCIBLE

A MAGAZINE FOR THE MILLMAN



FEBRUARY

1914



The Superiority of DISSTON Inserted Tooth Saws

Has been proven conclusively by the splendid service they have been giving for many years.

This type of saw is growing steadily more popular among circular saw users because of its many advantages. Chief among these is its retention of the original diameter of the saw during its entire life. This means that it is not necessary to purchase a saw of a larger diameter than the timber requires.

Our new booklet, "Saw Appreciation," gives all the facts, as well as many letters from satisfied users.

Whether you use Chisel
Tooth Saws now or not you
should send for this book

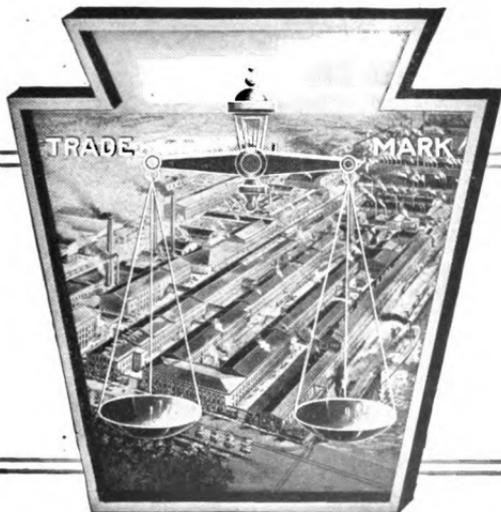
THE DISSTON CRUCIBLE

Price 10¢ per copy

\$1.00 yearly in advance

TABLE OF CONTENTS

	PAGE		PAGE
M. B. FARRIN LUMBER CO.	2-12	"TEN COMMANDMENTS"	12
Frontispiece		WESTBORO SAW MILL	13
EDITORIAL CHAT	3	A BIG CHESTNUT TREE	13
THE FILE	4	SAW DUST	14
A SINGULAR ACCIDENT	6	HALL OF FAME	15
ST. MARIES LUMBER CO.	8-9-10		



This Magazine is Published for the Advancement of the Interests of Millmen by

HENRY DISSTON & SONS
INCORPORATED

Keystone Saw, Tool, Steel, and File Works

PHILADELPHIA

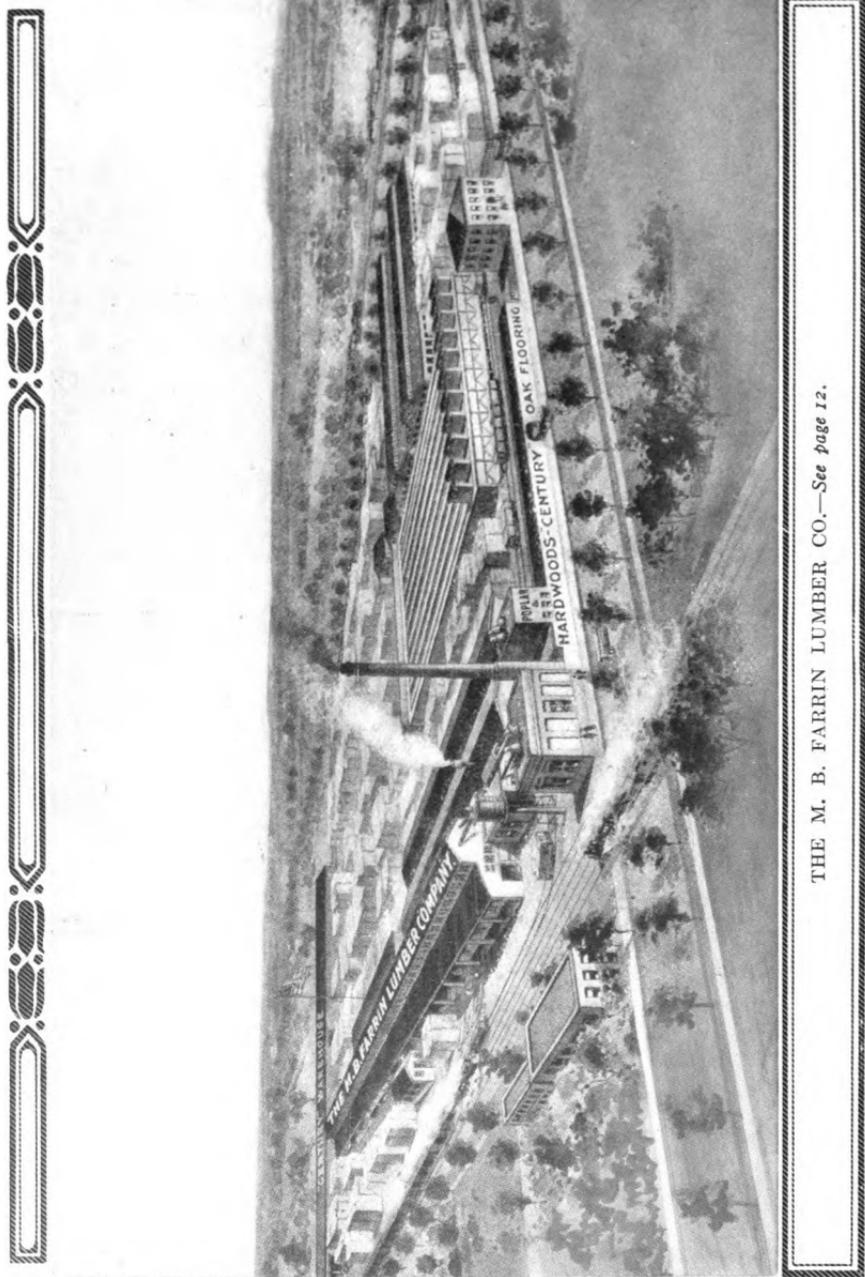
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THE M. B. FARRIN LUMBER CO.—See page 12.





VOL. III. FEBRUARY 15, 1914 NO. 1

EDITORIAL CHAT

OUR SECOND BIRTHDAY

TWENTY-FOUR issues of this little magazine have been prepared and placed in the hands of thousands of millmen in almost every country of the civilized world.

Two years ago, when the "Crucible" made its first appearance, certain ideals were given expression, certain definite plans were stated with regard to its aims and purposes.

Chief among them was the earnest intention to bring into closer touch the users and manufacturers of DISSTON SAWS and tools, to give such suggestions upon the use of these as would be of practical assistance to the millman in the performance of his work.

It was furthermore, our desire to acquaint our friends with many of the inside workings of the greatest saw and tool manufacturing plant in the world. We wished those who are users of DISSTON products to see and realize why it is that the Keystone Brand is the symbol of Quality wherever saws and tools of precision and dependability are used.

Many such glimpses into the making of DISSTON products have been given. As an interesting accompaniment to these little journeys through our Philadelphia home we have illustrated and described the work of early saw and file makers who plied their trades long before the American continent was discovered. The modern scientific methods of a great manufacturing plant were thus made doubly interesting by contrast with the crude efforts of the artisans of hundreds of years ago.

From time to time, articles dealing with the practical operation and care of saws have been published. These were written by men who have made such matters their life study. We hope and believe that these suggestions have been of genuine value to many of our friends in the lumber manufacturing world.

The generous appreciation accorded our efforts in the past two years both in actual letters of commendation and in contributions by interested readers, encourages us to believe that we have to some extent attained our ideals and fulfilled our purposes.

Such appreciation commands our sincerest thanks. It spurs on our resolution to keep these ideals and aims ever before us—to bring them to still fuller and higher attainment.

THE FILE

ITS HISTORY AND MAKING

PART NINE

AFTER the grinding, the description of which closed Part Eight, the blanks are "stripped." This operation takes away the glaze left after grinding and opens up the steel. By a special process the file blank is rubbed down, or filed, by a finished file especially made for the purpose. This work is done on a machine, but it is necessary for the operator in attendance to constantly rub on a special preparation which

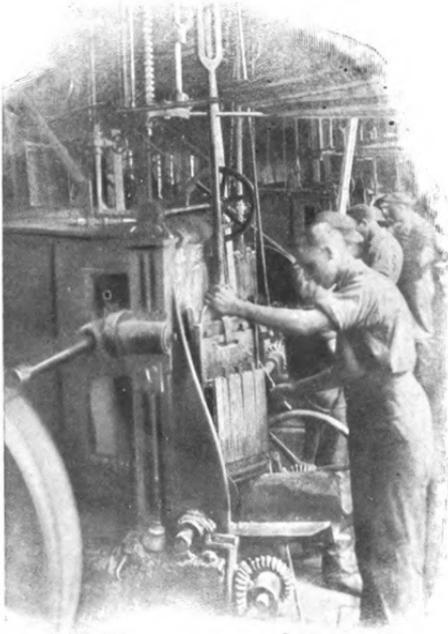
files by hand. Modern practice has demonstrated, however, that the hand-cut file cannot possibly possess the same high efficiency that a machine-cut file does. During the cutting operation the blank is secured in a "bed" which travels back and forth under a chisel that "raises" the teeth at a speed that the eye can hardly follow. When double cut files are being made the blank is put through the machine and "overcut." Then the position of the bed is shifted to one side and the second, or "upcut" is put on, the teeth running in an opposite direction. On some machines the chisel is turned instead of the bed. In Part Seven, Fig. 16, was illustrated one of the machines on which DISSTON FILES are cut. This style of machine represents the highest development in file-cutting machines, and is one of the many reasons why DISSTON FILES are so superior, both in the efficiency and endurance of the teeth. The main difference between cutting files and rasps lies in the chisel used. For files the chisel cuts at an angle all the way across the file at one stroke, while the bed moves steadily. In cutting rasps, however, a pointed punch of peculiar form is used. This punch travels back and forth across the blank, the bed moving only after each row of teeth is completed.

In cutting half-round files the chisel cuts the teeth in rows, lengthwise of the file instead of straight across, the bed being moved back and the position of the file changed as each row is finished.

When the teeth have been cut the files pass into the inspecting room where a thorough examination is made of the teeth. If these are not absolutely perfect the file is rejected.

After passing inspection the file is "cropped" or cut to exact length. This operation consists of cutting a small portion off the point of the file to bring it to proper length. When "cropped" the file is stamped with the famous DISSTON BRAND on the tang.

(Continued on page 11)



Cutting.

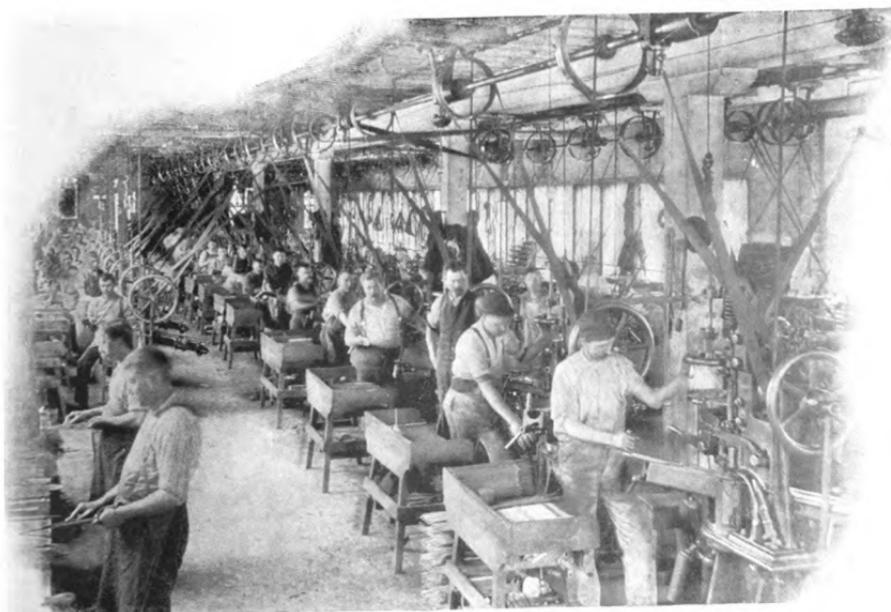
renders the surface of the blank as smooth as possible.

After the stripping process the blanks go to the cutting room where the teeth are cut in them. This operation was formerly done slowly and laboriously by hand as we have described in an earlier part. It is now done entirely by machine in the DISSTON WORKS although a few small manufacturers still cut certain classes of

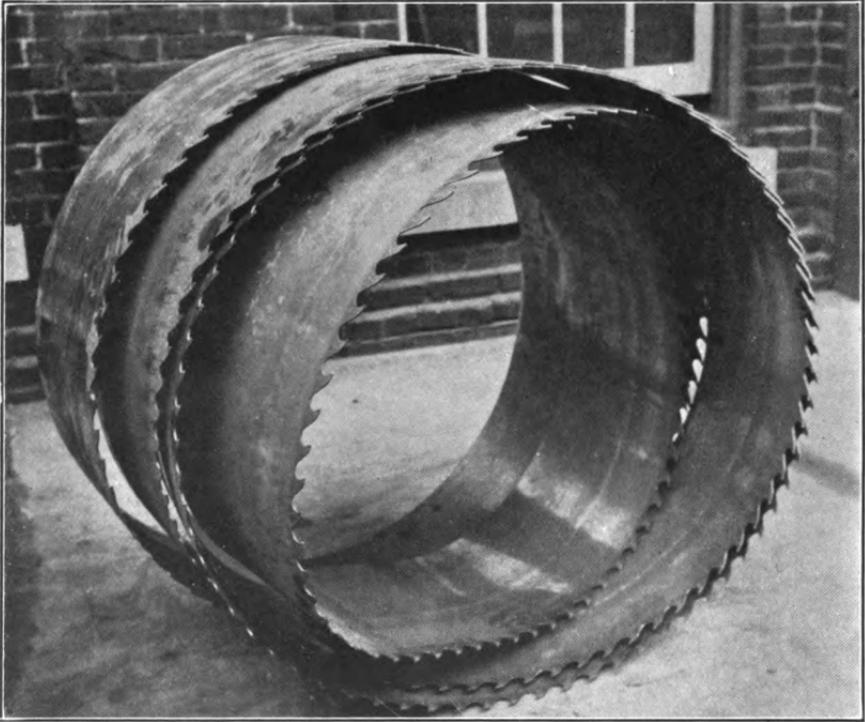
THE DISSTON CRUCIBLE



"Stripping" and "Cutting" Small Files.



"Cutting" Large Files.



A SINGULAR ACCIDENT.

THE Dare Lumber Company recently had an accident in their place which affords a very vivid illustration of the fine qualities possessed by a Disston Saw. It is especially notable because both the cause and the effect are somewhat out of the ordinary.

The accident, which occurred to their Band Re-Saw, was caused by the man who was doing the setting. The regular setter was out, and while they have a regular spare setter and floor man combined he was not available at the time. One of the Doggers, therefore, was put to work handling the setting works. This man could never explain his action, so unexpected was it even to him, but right in the middle of the reverse movement, that is, after the back end of the log had passed by the saw, going back, this temporary setter set out twice,

each stroke being two inches. This had the effect of pushing *four* inches of the saw log right into the saw.

It pulled the saw about half way off the pulleys, and the strain stopped the mill, which is electrically driven, in a few seconds. Steps were at once taken to remove the saw. In raising it up into the filing room it seemed to show considerable resistance to the men below, who were handling it, and as soon as it was lifted off the pulleys and the filing room crew attempted to spread it on the floor in the usual manner, it suddenly flew into the coil as shown in the photograph. Every effort to straighten it proved unavailing for just as they thought they had it in some sort of shape it would fly back into its coiled form again.

Referring to the photograph it will be seen that there are five loops, which were caused by the blade having

been twisted over the guides to such an extent as to result in its assuming its present shape. The saw is twisted over twice.

Think what it means to force a wide Band Saw four inches out of a straight line between guides by setting out against it while returning for another cut. It is almost inconceivable that a saw could come out of such a severe trial unbroken, but this one did, as the most careful inspection failed to disclose a crack, and the braze, although badly bent and distorted, was still intact.

This saw was originally 12 inches wide, but had been in service for several months on one of the finest mills in the country which worked it up to its fullest capacity. Beside giving excellent service the accident proved it to be an article of the highest quality, possessing the greatest tensile strength, high tough temper, tension, and edge holding qualities, all of which combine to make the highest grade Band Saw. It proved a perfect example of what a DISSTON BAND SAW is capable of. The great care exercised throughout every operation during their making, from the melting of the steel in the crucible to completion, never relaxes. "Quality Tells", and quality is an inherent part of all DISSTON BRAND GOODS.

A CURIOUS SAWING OUTFIT.

This rough, but ingenious appliance was found on the outskirts of a great city—Chicago.

It was recently discovered by Mr. Wilson, manager of our Chicago branch. He and his young daughter were taking a Sunday morning stroll along the embankment of the Wilmette Drainage Canal when they came across a little Italian settlement. This peculiar wood-sawing outfit caught Mr. Wilson's eye at once, and while he looked it over his daughter snapped a picture of it with her camera.

We present it merely as a curiosity, for to the experienced woodsman it will seem an unnecessary contrivance. Mr. Wilson's description follows:

"The long standard is made from two sections of iron pipe, the lower end of which is buried in the ground. In the top of same you will notice a



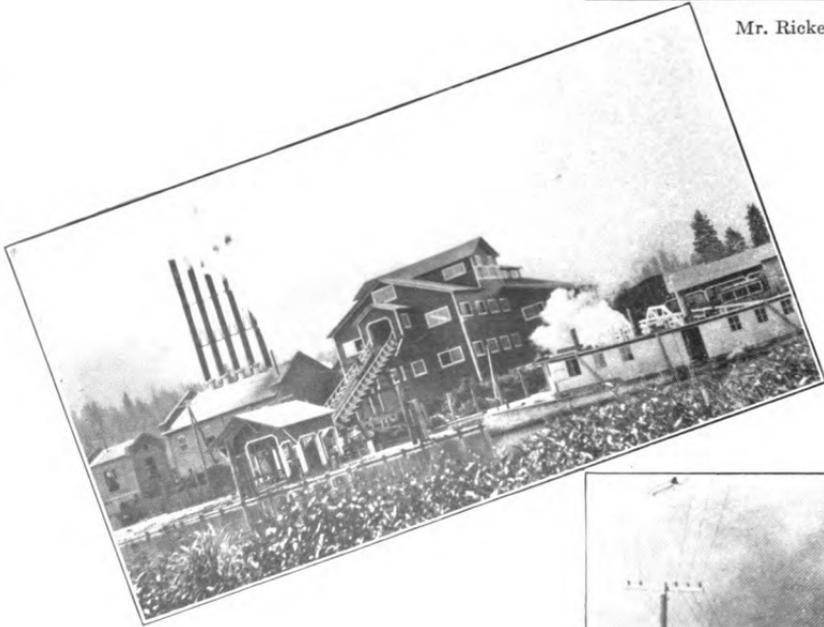
plug has been driven in, and attached to this is a stationary arm of wood from which a movable lever arm is attached to one end of a narrow cross-cut saw. On the other end of the saw is an old fashioned tab and handle. You will also notice the material on the buck is a railroad tie, which, judging from the amount of fire wood piled up around the shacks was cut very readily with this outfit. Quite possible the idea was imported from Italy as I never saw anything like it in this section of the country before."

In February Mr. Ernst Säumenicht will leave for South America where he will look after the interests of HENRY DISSTON & SONS. This is made necessary because of the continued growth of their business in that country, due to increasing importance of the lumber industry.

Mr. Säumenicht will be gone about two years, during which time he will visit Brazil, the Argentine, Chili and Uruguay. Readers of "The Crucible" will be interested in learning that he carries a camera, and we have arranged to have him furnish this little magazine with a number of pictures showing mill operations in South America.



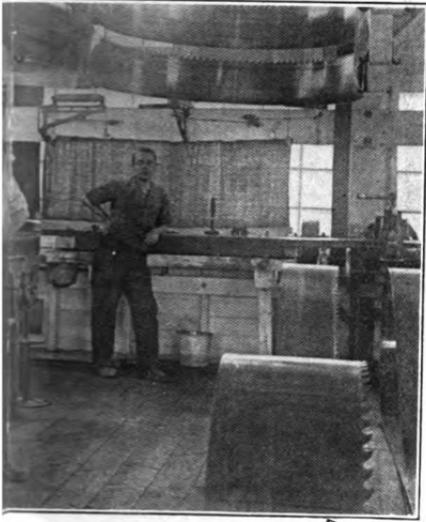
Mr. Ricker and his head helper



View of the plant at St. Maries, Idaho



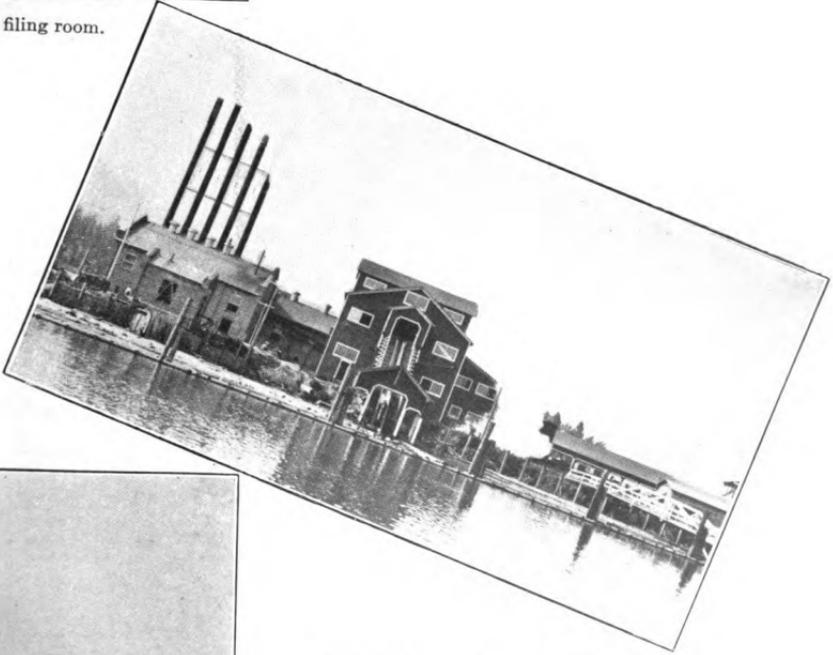
Storage booms holding



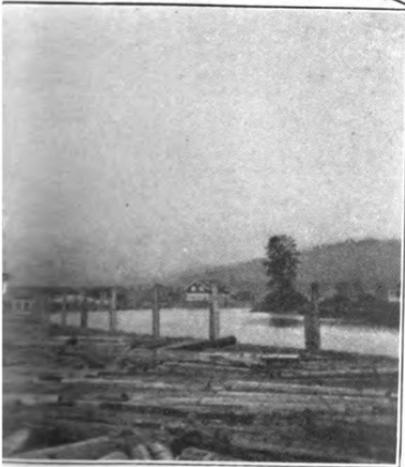
PLANT OF THE
ST. MARIES LUMBER CO.

See page 10

Mr. Hill, in the filing room.



Plant and storage booms on the St. Joe River.



1,000,000 feet of timber.

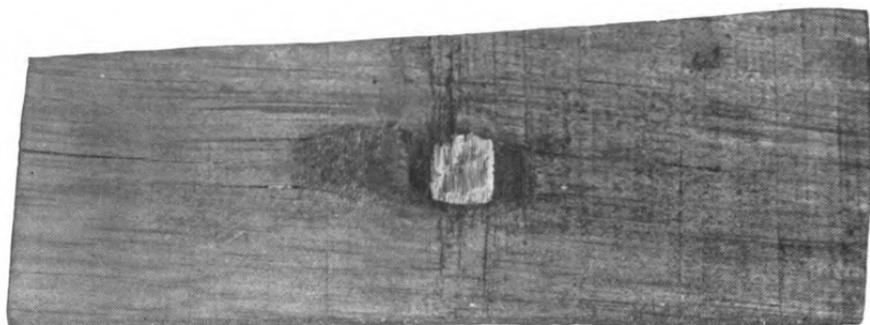
A FINE INLAND SAWMILL PLANT

The center spread this month (pages 8-9) show the filing room and plant of the St. Maries Lumber Company. This is considered one of the most up-to-date mills in the "Inland Empire", and for that reason will be especially interesting to millmen in the lumber regions of the East and West coasts.

The mill was designed and built quite recently by Mr. W. D. Starbird for Mr. William Kroll and his associates. Mr. Kroll is now General Manager, Mr. Baker, Secretary and Treasurer. It is equipped with two

bolt imbedded in it was cut by a Disston Band Saw running at the rate of about 10,000 feet per minute. Mr. Ricker states that he looked the saw over carefully after it made the cut and found that it was not injured. The tension remained perfect, and none of the teeth which came into contact with the bolt were injured in any way except the stripping of part of the swedging. This was stripped off of 20 teeth. One swedging put it back again.

Mr. Ricker, and Mr. Fuller, the mill Superintendent, say that in all their



Piece of White Pine showing $\frac{3}{4}$ -inch Bridge Spike cut by a Disston Saw in plant of St. Maries Lumber Co.

8-foot band mills, using 13-inch, single cut DISSTON SAWS, and is practically electrically driven. The mill is situated on the St. Joe River, about one mile from the town of St. Maries, Idaho.

Almost the entire cut of the mill is white pine and they have a daily capacity of about 230,000 feet for twenty hours.

The photograph of the filing room shows Mr. Jerry Ricker, the filer, at the bench, and Mr. Hill, his head helper.

We are indebted to Mr. Ricker for the slab of Western white pine shown on this page. The $\frac{5}{8}$ -inch drift

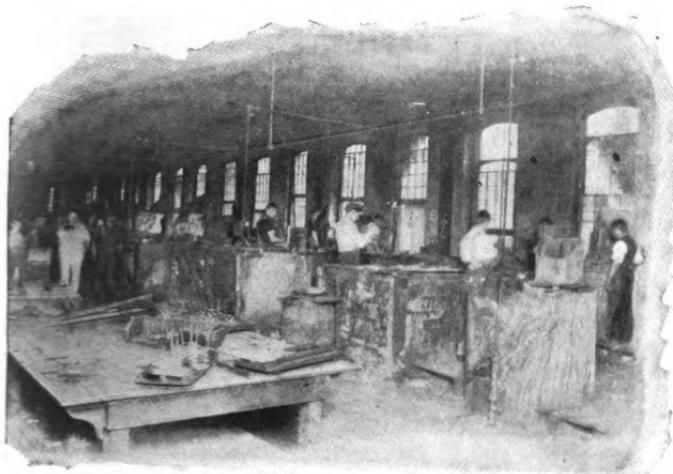
years of experience as millmen, they have yet to see a saw other than a DISSTON that could make such a showing.

Their faith in DISSTON SAWS is shown by the fact that this mill is completely equipped with them.



The efficiency of the DISSTON Saw is more easily maintained by the use of the DISSTON File.

THE DISSTON CRUCIBLE



Hardening.

THE FILE.

(Continued from page 4)

With the very small sizes of files it is necessary to straighten them after the teeth are cut. This is done by the use of a *lignum vitae* block and a *lead* hammer, which straightens the file, but has no effect on the teeth.

The file is then covered with a paste that protects the edges of the teeth during the hardening process, which is one of the most important operations. After being hardened, and while the file is still hot, it is put through a final straightening process. After this, comes the "scrubbing" and "drying." The first of these operations removes from the file the paste that was put on to protect the teeth during hardening. In the second, the files are washed in lime water and are dried by holding them in steam.

The next and last operations in the making of a file before the final inspection, is "blueing" the tangs, and oiling the file. This "blueing" operation toughens the tang against breakage when putting the handle on.

It is done by dipping the tang into a special preparation that is maintained at a certain degree of heat.

In the manufacture of superfine files, of which HENRY DISSTON & SONS make a specialty, the majority of the operations are similar to the methods we have been describing. Steel of the same quality is used. It is cut into multiples in the usual manner, followed by the "tanging," "annealing," "straightening," and "grinding" operations with which the reader is now familiar.

The method of manufacture differs slightly after the grinding operations. The superfine file is put through a "shaping" process which corresponds in effect to the "stripping" operation in the case of the larger files.

To do this the file blank is secured in a vise, and the soft surface (the blank not having been hardened as

(Continued on page 16)



Section of Superfine File Department.

THE DISSTON CRUCIBLE

M. B. FARRIN LUMBER CO.

The frontispiece this month shows the fine plant of the M. B. Farrin Lumber Co. at Cincinnati, Ohio. The mill and yards shown cover an area of 22 acres, and a stock of some ten million feet of lumber is constantly maintained here. This plant is equipped with steam and moist air dry kilns which have a capacity of a million and a quarter feet. The trackage in the yards affords accommodation for 100 cars at one time.

They are planing mill specialists, and manufacture the well known Century Oak Flooring, Oak Trim, Gum Trim, Kiln dried lumber and Hardwoods. The planing mills at Cincinnati are equipped with the highest grade machinery and are models of completeness. In addition to the plant shown they operate mills in West Virginia, Kentucky and Mississippi.

They cater to both car load and less than carload shipments, and run several large motor trucks, which cover a delivery territory extending for 500 miles around Cincinnati.

The business was established in 1876, and they have been in their present location for 30 years. The officers are; H. J. Pfister, President, Wm. J. Eckman, Vice President, and A. L. Metcalfe, Secretary and Treasurer.

They are large users of both saws and machine knives, and it is pleasant to record that DISSTON products are used exclusively.

AMONG OUR SALESMEN.

Mr. "Bert" Cooper, whose change from Georgia and Florida to New York and Pennsylvania was announced last month, is having great success in his new territory. We hope that those whom he visits will accord him the same consideration which they gave his predecessor.

Roy H. Woody, mill and cross-cut saw specialist, who formerly traveled in West Virginia, will now travel in New England territory.

Harry A. Marsh, who has been selling principally in the New England territory, has been transferred to Tennessee.

"TEN COMMANDMENTS" FOR BAND SAW FILERS.

Here are a few important points that should have close attention, to be a successful filer.

One.—Be on friendly terms with sawyer and mill foreman; co-operate with them in order to get good results.

Two.—Look over saws on bench every day, regardless of how well they are running. You might find two or three small lumps or one or two tight places. If sawyer should happen to knock one out do not neglect your daily (regular) saw on bench; go over it first, and then work on cripples.

Three.—Look your band mill over closely, often, and see that there is nothing loose, to get out of alignment. Watch your guides and keep them set in alignment with saw line every day.

Four.—Watch your teeth closely; see that swage is working properly; always try side gauge when swaging. See that emery wheel is always same shape; do not let it wear more in one place than another, as it will change hook as well as shape of teeth.

Five.—Always keep your saws the same length on back. Do not let them get uneven, as it will cause them to oscillate on wheels and cause sawyer to slow up on his feed by not having confidence in the saws.

Six.—Be certain that your roll is not dishing saws, as it will make considerable more work on account of having to level after putting in tension.

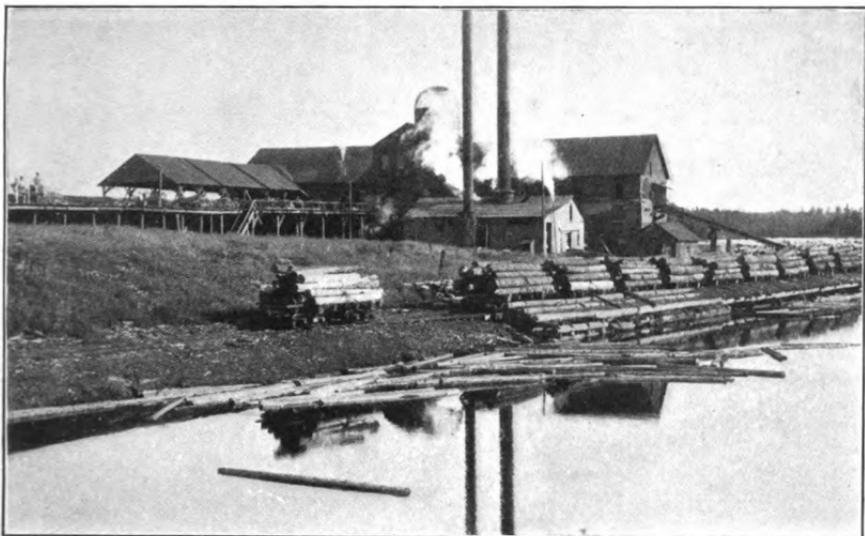
Seven.—Keep your roll well oiled and all lost motion out of it.

Eight.—If saws get to running badly, first satisfy yourself that the blade is O. K., then that the teeth are in proper shape. If this does not remedy the trouble, do not start to experiment by changing your saws. You will find your trouble in the band mill or carriage track, and possible in carriage.

Nine.—Never accuse any one in the mill of doing you wrong until you have set a trap for him and caught him with his hands in the fire.

Ten.—Do not get neglectful with your work. Keep your filing room in good order at all times and your tools where you can find the one you want at any time.—W. E. Shallow, in The Woodworker.

THE DISSTON CRUCIBLE



This photograph shows the saw mill at Westboro, Wisconsin, of which J. W. Kays is Secretary and Treasurer, and J. J. Single, Superintendent.

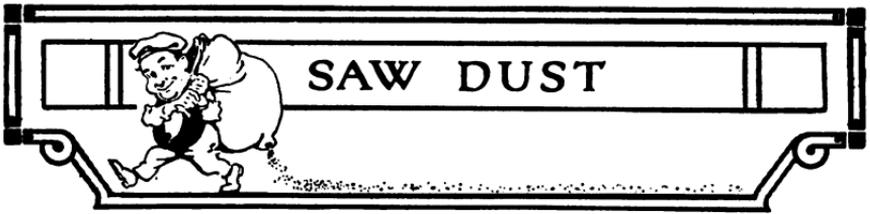
This mill cuts one hundred thousand feet of lumber daily with the aid of **DISSTON SAWS**. They also use **DISSTON SAWS** for cutting out their timber which consists chiefly of Hemlock and hard wood. So extensive are their holdings that it is necessary for them to operate about 25 miles of railroad to bring the timber to the mill.

Westboro is situated on the Soo Railroad, about 150 miles south of Ashland.



A BIG CHESTNUT TREE.

From the appearance of the gentlemen in the picture one might imagine that they saw a couple of husky sawyers approaching, armed with a **DISSTON Cross-cut Saw**, and were doing their best to hold up the tree. While this is probably not the case at this time, nevertheless, a **DISSTON SAW** will some day participate in the passing of this old tree. When that time comes it would take a good many men to hold it in an upright position for this tree is nine feet in diameter some thirty inches above the ground. It is a chestnut tree, and is a very fair sample of the large trees on the holdings of the **Champion Lumber Company**, Crestmont, N. C.



RAILROAD PHONETIC SPELLING.

Albert Kern of the Western Union Telegraph Co. tells this one:

"Some years ago I was agent at a small station in Texas through which the International & Great Northern Railroad ran. One day a typical backwoodsman was standing on the station platform intently watching, perhaps for the first time in his life, an engine switching cars in the yards. On the tender were the letters 'I. & G. N.,' meaning International & Great Northern. He spelled the letters over slowly to himself and then said: 'I-&G-N That's a — of a way to spell engine, ain't it?'"

CLOSE QUARTERS.

The proofreader on a small country daily was a woman of great precision and extreme propriety. One day a reporter succeeded in getting into type an item about "Willie Brown, the boy who was burned in the West End by a live wire."

On the following day the reporter found in his desk a frigid note asking: "Which is the west end of a boy?"

It took only an instant to reply: "The end the son sets on, of course."

SAVING ENERGY.



"Gee, but dat's a short stump yer smokin'."

"Yep! I likes 'em better dat way. Yer don't have to draw de smoke so far."

WHERE IT WENT.

The leading negroes of a Georgia town started a bank and invited persons of their race to become customers. One day a darkey, with shoes run down at the heels, a gallus over one shoulder and a cotton shirt, showed up at the bank.

"See here," he said, "I want mah ten dollars."

"Who is yuh?" asked the cashier.

"Mah name's Jim Johnson, an' I wants dat ten dollars."

"Yuh ain't got no money in dis here bank," said the cashier, after looking over the books.

"Yes, I has," insisted the visitor. "I put ten dollars in here six months ergo."

"Why, man, yuh shure is foolish. De interest done et dat up long ergo."

HE LOOKED THE PART.

A lawyer of Omaha entering an eating house was immediately approached by a waiter, who observed cheerfully: "I have frogs' legs, deviled kidneys, pigs' feet and calves' brains."

"Well," said the lawyer sternly, "you look it, but what's that to me? I came to eat."

"So you think, doctor," said the anxious patient, "a little whiskey would be good for me? How much and how often am I to take it?"

"Well, about a spoonful once a day would perhaps—"

"Oh, pshaw! I'm goin' to get up and go down to the office."—*Cleveland Plain Dealer.*

SLOW.

"He's a nice fellow to take a girl fishing!"

"Why, what did he do?"

"He fished."—*Judge.*

THE CRUCIBLE
HALL OF FAME



MR. HENRY SMART

The above photograph came to us all the way from Russia, where Mr. Henry Smart is now engaged in superintending the remodeling of the mill of William Ropes & Co., at Zelonni Dal, a station on the Moscow-Kazan Railway. This is the largest mill of its kind in Russia, and he has been very successful in bringing it down to date in operation and equipment. Mr. Smart writes that he has reduced the saw dust pile almost to a decimal, in comparison to what it was, and has almost doubled the output—through the use of DISSTON SAWS.

Mr. Smart was born in 1872. He served his apprenticeship as a sawmaker in Glasgow and Sheffield. He then became a saw filer and millman, and worked his way up to foreman. Studying machine construction in his spare time he at length became erector for Ransome & Co., Ltd., England, in which capacity he traveled all over the world.

Then he became Mill Manager for W. W. Howard Bros. Co., London. He left this place to become chief expert for W. B. Haigh, Gruban & Co., Ltd., Oldham, England, for whom he designed a now famous re-saw.

THE DISSTON CRUCIBLE

THE FILE

(Continued from page 11)

yet) is smoothed down with a finished file made especially for the purpose.

As in the "stripping" operation, this process is necessary to make the surface of the blank smooth and even before the cutting operation, which follows.

Owing to the fineness of teeth and the different shapes in which the superfine files are made, the "toothing" operations are also somewhat different.

On files that are made for extra fine work, such as those for jewelers', dentists', and surgeons' use, the teeth are "etched" in. This method of toothing a superfine file is done on a machine of very peculiar construction. It differs radically from the methods used in cutting larger files, involving a greater amount of hand work, but this is necessary on account of the fineness of the teeth.

In cutting the teeth of a half-round superfine file it is necessary to use two "beds." When the file is fitted in the "groove" of the first "bed" the file is nearly on edge with the flat side toward the operator. The teeth are then "raised" or cut in narrow rows at an angle to the line of the file only half way round. Another "bed" is then substituted. This also stands the file nearly on edge, but with the round side toward the operator. The teeth are cut toward the center until they meet the last row of teeth cut from the other side. To shift the "bed" so that the chisel can cut each row, a worm-gear, adjusted by the operator, is used.

In the case of a single-cut file the cutting of the teeth would now be finished, but in cutting double-cut files the operation is gone over again. This time the center of the chisel is over the spot where two rows of teeth connect. In this way the chisel "upcuts" over half of each row—the "upcut" teeth running in an opposite direction to the first teeth.

After the toothing operation, the superfine file goes through another straightening process before the hardening. This straightening is also done with a *lead* hammer so that the teeth will not be damaged in any way.

It is then taken to the hardening room and hardened, which operation, together with the "straightening,"

"scrubbing," "drying" and tang "blueing" that follow, is done in the same manner as with the larger files.

The files are then sent to the inspecting room where they are given the final inspection and tests before being packed up to be sent to all parts of the world.

(To be continued.)

HERE'S A CURIOSITY.

The mail has just brought us a section of a Disston Band Saw, 8 inches wide, 15-gauge, from Mr. T. J. Waggoner. Mr. Waggoner is the filer for the Huntsville Lumber Co., at Decatur, Ala.

He sends this section of band saw as a curiosity because it has a crack in the back about $\frac{1}{8}$ -inch deep. He states that during a period of ten years he has used thirty-eight Disston Band Saws, 44 feet long, 10 inches wide and 15-gauge. This small crack, hardly visible to the eye, is the only one that has ever developed in these Disston Saws. The saws handled by Mr. Waggoner usually wear down from 10 inches to about 7 inches.

Mr. Waggoner is enthusiastic about the splendid results he has obtained from Disston Saws. While this experience of his proves the high efficiency of Disston Saws, it also shows that Mr. Waggoner deserves a great deal of credit for the excellent manner in which he cares for his saws.

Gentlemen:-

There was one other trial of your saws I made and did not mention in my other letter. When building the bridges on the Jacksonville, Tampa & Key West R. R., as it was called at that time, the Engineer demanded that the piling in Black Creek be cut off at the bottom of the creek, where the water was 18 feet deep. M. S. Carter, of St. Louis, the contractor, asked me if I had ever seen a saw rigged to do the work. I said, no, but I could make one. A 30-inch circular saw was sent for to Philadelphia. Murphy, the Toundy & Madison man here, got out the shafting and pulley. I had a frame made to fit in the slides of a pile device I had built, and I found some wheels at Murphy's. I got 300 R. P. M. on this, and cut off the piling while working in 18 feet of water. I have never seen or heard of a device like this before. But it worked all right.

(Signed) CAPT. W. M. SOMMERVILLE.

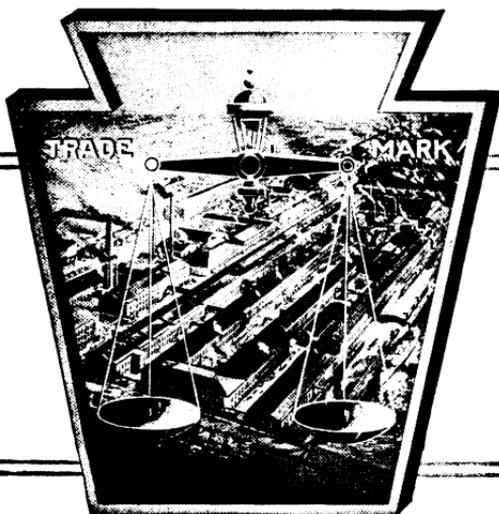
THE DISSTON CRUCIBLE

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TABLE OF CONTENTS

	PAGE		PAGE
LARGEST KNOWN WHITE PINE TREE	(Frontispiece)	SOME GOOD WORDS FROM AUSTRALIA	26
EDITORIAL CHAT	19	AN ARKANSAS COTTONWOOD LOG	28
THE FILE	20	FILING TO CUT SPONGY WOOD	29
BAILEY-LEBBY COMPANY	22	SAW DUST	30
WINTER SNAP SHOTS IN MAINE	23	HALL OF FAME	31
CLEARING THE FOREST, IN NEW ZEALAND	24-25	A. A. GARDNER	32



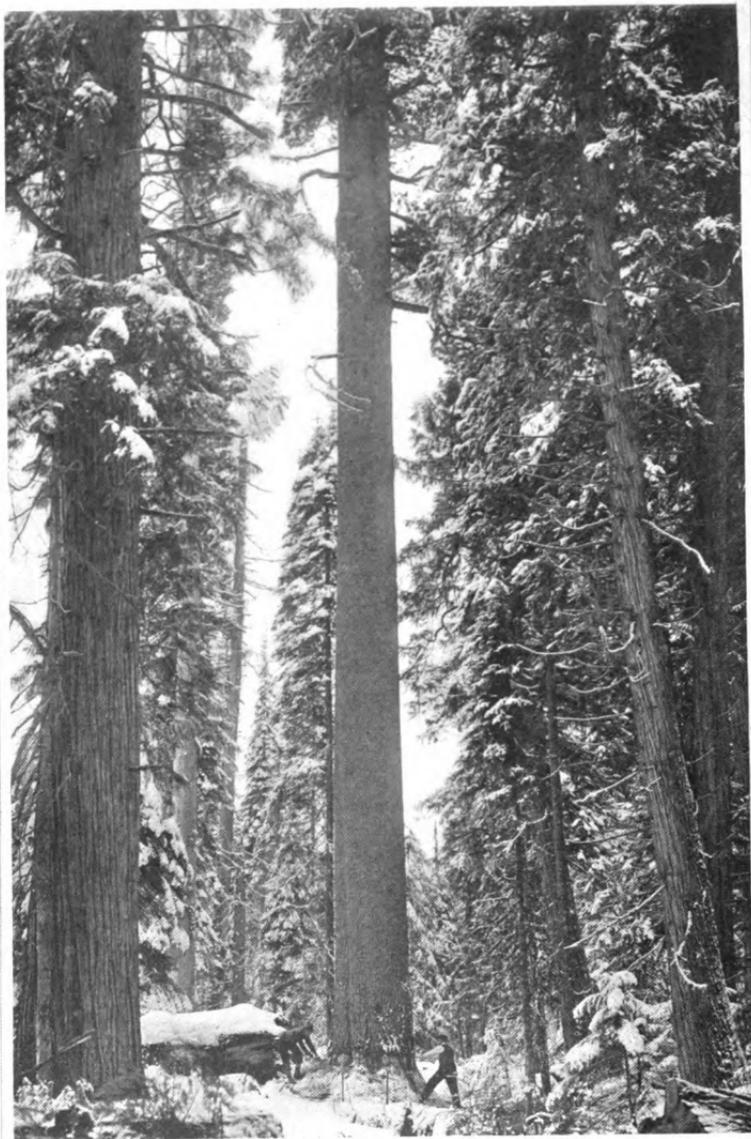
This Magazine is Published for the Advancement of the Interests of Millmen by

HENRY DISSTON & SONS
INCORPORATED

Keystone Saw, Tool, Steel, and File Works
PHILADELPHIA

BRANCH HOUSES :

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Canadian Works, Toronto, Canada.



LARGEST KNOWN WHITE PINE TREE IN THE WORLD

This photo was loaned us through the kindness of G. B. Joslin by whom it was copyrighted in 1912.

It shows the largest known White Pine Tree in the World—felled December 12, 1911. Property of Potlatch Lumber Company, Potlatch, Idaho.

THE DISSTON CRUCIBLE

A MAGAZINE FOR THE MILLMAN

VOL. III.

MARCH 15, 1914

NO. 2

EDITORIAL CHAT

HELPING ONE ANOTHER.

THE strains and impetus of modern business demand a high degree of efficiency at every point.

We, here in our own great plant, attribute no small part of the success of DISSTON SAWS to the efficiency of our men and methods.

But to maintain this efficiency to the end, it is necessary that others beside ourselves join in the great onward march of efficiency, and practice its teachings.

The finest saws made cannot give out the best that is in them without the efficient co-operation of those in whose hands they happen to be. Unless the teeth are sharp, properly set and the correct shape for the wood to be cut; the speed of the saw just what it was tensioned for; the power that drives it adequate for the work; unless all these are kept up to their highest state of efficiency, then the saw is bound to fail—and the maker's reputation suffer.

It is in these things that we can help one another. We make and deliver to you a saw that is the product of seventy-four years experience on our part, and great skill on that of our workmen. If you give the proper attention and thought to the care and running of the saws after they reach you, you can never hope to obtain better saws—no better saw is made!

See that they are properly and regularly set and sharpened. That the power is sufficient for the feed required.

And that is helping one another.

*Quality
Sells*

THE FILE

ITS HISTORY AND MAKING

PART TEN

PART Nine closed the history of the file as well as the details of its making. To make this article more complete, however, it will be extended to embrace a general description of the forms and uses of the modern file: for so widespread is the use of this tool—so interwoven with the industries of the world—that it has become very nearly indispensable.

Files differ according to the purposes for which they are intended, both in shape and in "cut" or form of teeth. Many files of different shapes have teeth of similar form, as there are only a certain number of standard forms of "cut." For this reason the variations in the "cut" or form of teeth will be considered first. With a thorough understanding of this, later references will be much clearer.

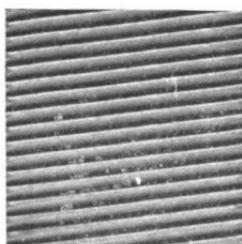
In the first place, the term "cut" refers to two characteristics of the teeth

and is a general term that must be supplemented with a more definite designation when an exact description of the file is intended. The kind or character of the teeth in a file, as well as the degree of coarseness or fineness, are both embraced in the general term "cut," but each of these characteristics has its separate classification. The character of the teeth is described under three main divisions, viz: Single Cut, Double Cut, and Rasp Cut.

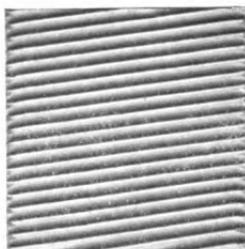
THE SINGLE CUT FILE has one unbroken course of teeth or chisel cuts across its surface, parallel to each other, but usually at an oblique angle to the length of the file. Some files, however, have the teeth cut square across face of file. This is called the Brass Cut and is used especially for files used on brass, as well as for cork and wood. The Single Cut is used on

SINGLE CUT

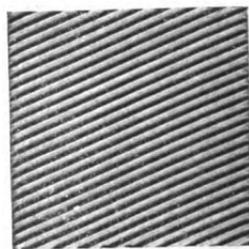
Particularly adapted for Saw Filing, also used on Lathe Work by Machinists and by some classes of Wood Workers, Carriage Builders, etc.



Rough



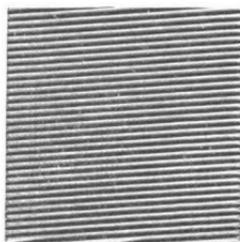
Middle



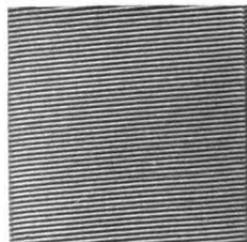
Bet. Bastard and Middle



Bastard



Second Cut

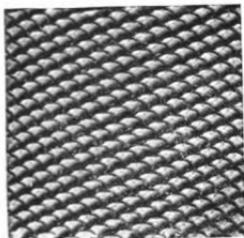


Smooth

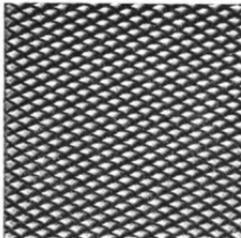
THE DISSTON CRUCIBLE

DOUBLE CUT

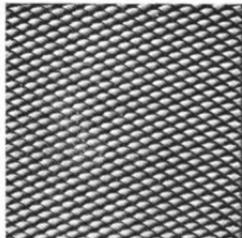
Especially adapted for use in Machine Shops, Locomotive Works, Foundries and similar classes of work.



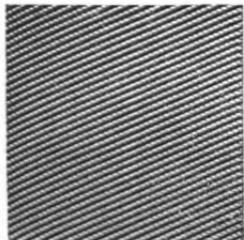
Rough



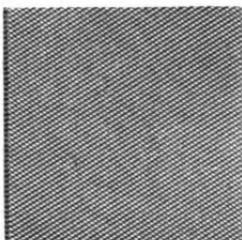
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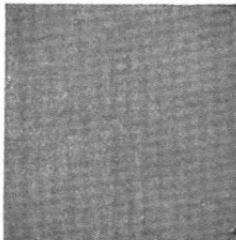
Bastard



Second Cut



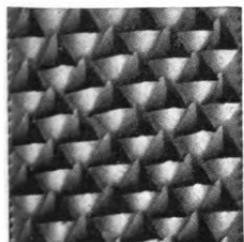
Smooth



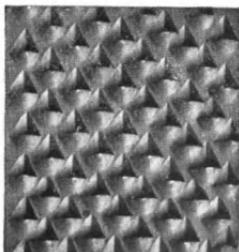
Dead Smooth

RASP CUT

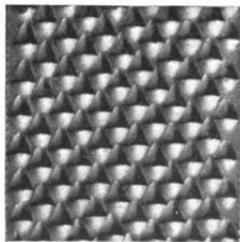
Used by Blacksmiths, Horseshoers, Plumbers, Cabinet Makers, Wood Workers, Etc.



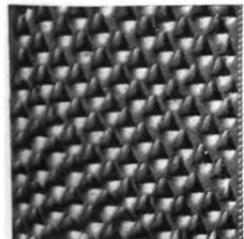
Horse



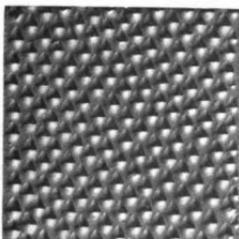
Rough



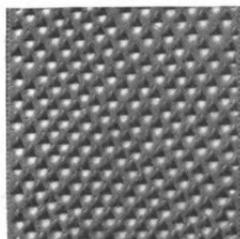
Middle



Bastard



Second Cut



Smooth

THE DISSTON CRUCIBLE

the majority of Mill Files, Taper Saw and other Saw Files.

THE DOUBLE CUT FILE has two courses of teeth or chisel cuts crossing each other, one course being finer than the other. Double Cut is used on all Machinists' files, such as Flat, Hand, Square, Round, Half-Round, etc. The teeth of Single Cut files are like chisels, while the teeth of Double Cut files are points.

RASP CUT differs from both the above in the respect that the teeth are not placed in parallel rows across the file, but each tooth is detached or put in separately by a pointed tool or punch. While cutting uniformly, Rasp Teeth cut much faster than either Single or Double Cut teeth.

The accompanying cuts on pages 20 and 21 are engraved from files 12 inches long; if longer than 12 inches the cuts will be coarser, and if shorter, they will be finer in proportion. By referring back to Part Nine, where detailed descriptions of cutting operations are given, the reader will be enabled to understand this explanation more clearly.

The degree of coarseness is denoted by the names Bastard, Second Cut and Smooth. In addition to these there are coarser cuts known as Rough and Coarse; also a finer cut identified as Dead Smooth.

The various groups or classes of files have certain accepted standards for the cuts to be used. Reference to the explanation above of the Single and Double Cuts as well as to the illustrations will afford a fairly complete index to these. It is well to bear in mind that a "rough-cut" or coarse file has the least number of teeth to the inch, while the "smooth-cut" or fine files have the greatest.

Exceptions to the standard forms and cuts of files are sometimes found in the shipbuilding trade. To meet certain conditions peculiar to that business special forms and cuts are necessary. All these, however, are based upon the standard cuts.

In this connection it is well to state that while there are accepted standards for the character of the teeth, there is no established rule fixing any certain number of teeth to the inch for any particular cut. Consequently there is more or less of a variation in the

number of teeth cut to the inch by different manufacturers. Owing to the very large quantity of files used in the shops of **HENRY DISSTON & SONS**—over 35,000 dozen annually—they are in an exceptionally favorable position to judge of the results obtained from all classes of teeth. The standards which they have adopted, therefore, may be taken as the final word in the number of teeth to the inch necessary to obtain the highest efficiency from a file.

(To be continued)

(Erratum:—In Part Nine, published in the February number, an error of the printer caused the caption under the illustration on page 4 to read "Cutting." This should have been "Grinding."—Editor)

BAILEY-LEBBY COMPANY NOW HANDLES DISSTON MILL-GOODS LINE EXCLUSIVELY

Millmen throughout the Atlantic States will be interested to learn that the Bailey-Lebby Company of Charleston, South Carolina, is hereafter to handle the Disston Mill Line exclusively.

This concern started in a small way in 1887. From this modest beginning it has developed into one of the best known and most important mill-supply houses on the Atlantic seaboard. It is today the most aggressive and popular house of its kind in Charleston, a city which by reason of its location is in a position to cater to the needs of saw mills in that territory as can no other centre.

It is the intention of Messrs. Bailey-Lebby to carry a large and well assorted stock of **DISSTON SAWS and KNIVES**, and Millmen will find their well known prompt and intelligent service a splendid source of supply.

The Bailey-Lebby Company hope that all their customers will advise them of their present and future needs so that adequate provision may be made to have complete and suitable stocks on hand.

We congratulate ourselves in having these good people with us and wish them every success.

THE DISSTON CRUCIBLE

WINTER SNAP SHOTS IN MAINE



Crew of Porter & Thomas
Lumber Camp



Washing Clothes at
10° below zero



Office of Logging Camp,
Preble & Robinson,
Lake Moxie, Maine



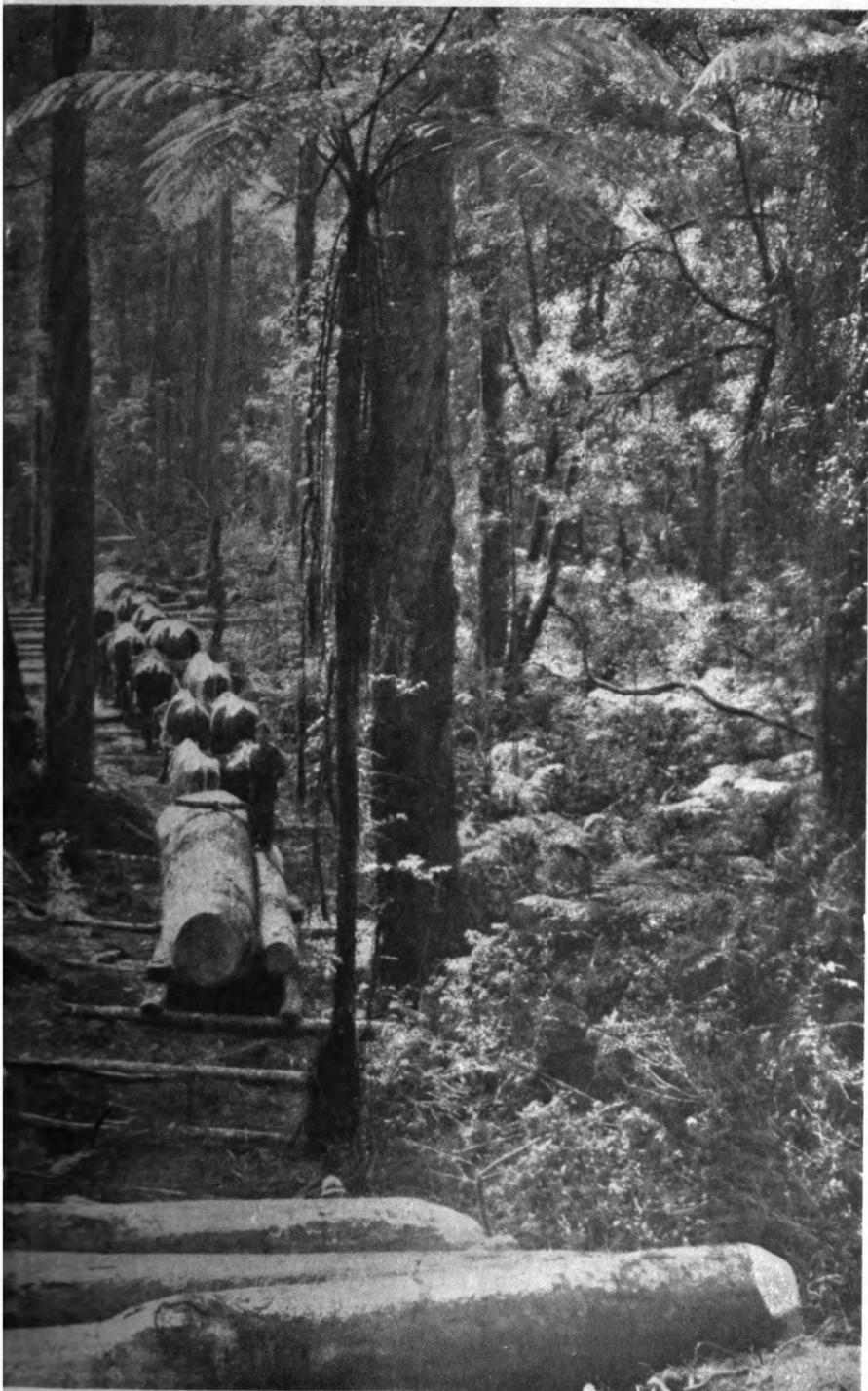
Harry A. Marsh,
Disston Cross-Cut Saw
Missionary, who took the
pictures



Tote Team hauling supplies to camp of Porter & Thomas,
Lake Mooselocmagumtic, Me.



CLEARING THE FOREST IN NEW ZEALAND. HAULING LOGS OVER A CORN



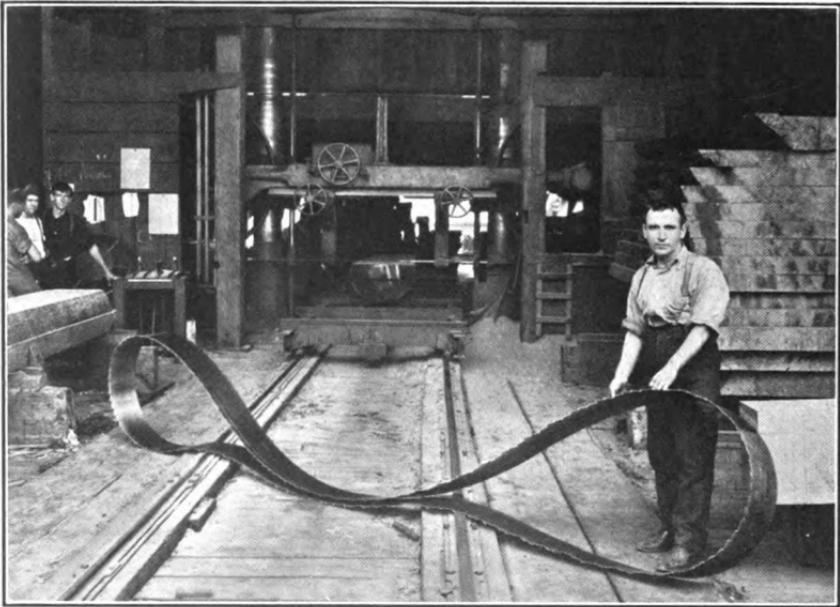
LOGGING ROAD IN THE BEAUTIFUL BUSH COUNTRY OF THE NORTH ISLAND
(*Courtesy Auckland Weekly News*)

THE DISSTON CRUCIBLE

SOME GOOD WORDS FROM AUSTRALIA

THERE is seldom a day passes that we do not hear of some trying episode through which a Disston Saw has passed with flying colors. It is these successful tests as well as the long continued efficiency of Disston Saws which has been steadily enhancing their reputation among the practical men of the mill, and through them the man who owns it.

sawyer operating it this saw was allowed to overwork itself, and as a result left the wheels and twisted itself into many unusual curves. In the expert hands of Mr. Henderson, however, it was finally straightened out again, and, as his letter tells, was put back on the wheels without a crack, and still retaining the original joint



Mr. George Henderson, filer, in the mill of Langdon & Langdon, Annandale, Australia

Naturally most of these experiences that we hear of are comparatively near at hand, so we are always doubly interested in those that occasionally come to us from some faraway country. We are always glad to receive these, as well as pictures connected with them for the millman in one section of the world is always more than anxious to know something of the experiences of his brothers in other places. The above picture is an excellent one. It shows Mr. George Henderson, filer for Langdon & Langdon, an Australian firm owning a big and busy mill at Annandale, near Sydney.

Through the inexperience of the

that was put in at the factory. While it is not an unaccustomed accident for a DISSTON SAW to pass through without lasting damage, still each one of these happenings goes to prove the great worth of the saws and confirm the faith that most of the millmen have in them.

The horizontal log mill shown in the photo is of an old English pattern, and has since been replaced by a modern and more efficient one of American manufacture. The new mill takes 12-inch saws and has made a considerable increase in the quantity and quality of the output at the Langdon & Langdon mill. Mr. Henderson's letter follows.

THE DISSTON CRUCIBLE

Annandale, Sydney, N. S. W.

DEAR SIRS:

I take the liberty of mailing you under separate cover the picture of one of your 8-inch, 18-gauge, light band re-saws, which was distorted by accident on the toothed edge to extremely acute angles at the roots of the teeth, as you will see in the photo. One could hardly credit a saw could get into such shape without a fracture, but such is the case in this instance. It surprises me the saw did so well as it did with the treatment it received.

I have cared for bands now for over twenty-five years and have had the usual filer's luck with saws kicked off and other accidents likely to be met with on the bandmill, and which are as a rule, very ticklish, but the worse they are I always find time to straighten them up, which is very tiresome, as many filers know. Well, in all my experience, no saw in my way of thinking of any previous make I have used, stood so severe a test as this one. This is no idle statement for I have seen saws knocked into very peculiar shapes, but to keep the wheels under such strain and expansion speaks very high for the material and workmanship in your saws.

To see this saw under the straight-edge across the blade it shows $\frac{3}{4}$ -inch dished and taking four teeth the lowest one is $\frac{3}{4}$ -inch the back hollowing or concave 5-16-inch in 5 feet. The work of straightening will be with the hammer until the saw lies flat on the leveling block, and when finished hope to see many a good days work out of it, with the same joint as she left your factory.

I will now endeavor to explain how the accident occurred, in the first place the sawyer had only been on the job for two weeks, previous to this had never been on a band saw, the sawyer who left taught the new man how to handle the machine. However, he got along so well that he started cutting 8-inch, 10-inch, 12-inch and 14-inch dry Oregon on the feed cutting 130 feet P. M. this day he cut for two and a half hours on this feed and unfortunately the swage was a bit light, and as the saw dulled out the friction became greater with the continuous cutting, and his mechanical instincts

were not very prominent. He did not detect the unusual sound of the saw, or the gradual fall of the tension weight. The saw suddenly left the line of cut and got right outside the cant and left the driving pulley standing on the main shaft.

It is a pity so many sawyers who work saws can never grasp the knowledge of how much their saws can stand with safety, instead of overcrowding a good saw when they get them.

I hope this picture will interest you and may add the saws you furnish are excellent. The mill in the photo is an old English horizontal one which has since been replaced by a modern and very efficient one of American make taking 12-inch saws.

(Signed),

GEORGE HENDERSON.

THE HEIGHT OF IMAGINATION

A daily paper of great circulation but of many foolish ideas says:

"We have written to HENRY DISSTON, the big saw man of Philadelphia, asking him if he wont arrange a gang of ten heavy saws, thirty-six inches or more in diameter, mounted on a platform to be dragged behind the caterpillar engine, the saws to be run by a powerful gas engine on the platform and to saw up the ground and the roots in the ground as they go along."

A very pretty idea! The "caterpillar" engine talked about is a contrivance that runs on a track of its own—a scheme familiar to the northern woods—that can pull stumps or break up prairie sod and do a tremendous amount of heavy work. But just imagine this gang of saws which is to cut up the roots and open up the soil striking some granite boulders under the surface.—*Am. Lumberman.*

POSITION WANTED

As Band Saw Filer. Have had experience in filing for all kinds of timber and can furnish the best of references. Address John S. Scheddel, 211-35th Street, Bay City, Mich.

THE DISSTON CRUCIBLE



AN ARKANSAS COTTONWOOD LOG

These two interesting photographs show a cottonwood log of unusual size which was cut by the Baker Lumber Company at Turrell, Arkansas. While this does not compare in size with the California product, it is nevertheless a hardwood log of exceptional proportions. It measures 10 feet in length, 7 feet across the butt and 6 feet across the small end. It contains 3300 feet of lumber.

The Baker Lumber Company has long been an enthusiastic user of DISSTON SAWS.



THE DISSTON CRUCIBLE

FILING TO CUT SPONGY WOOD

BY "PUGET"

HAVING had a number of years experience making shingles of Pacific Coast Red Cedar, I thought perhaps some of my experiences may be of interest to the readers of the "Crucible".

I have had the most trouble making smooth shingles of the high land cedar. The wood is generally of a spongy nature, which a saw has a tendency to tear instead of to cut, but have had fair success by putting in plenty of hook and using a very thin corner, and allowing the swage to flare close to the point.

In order for a saw to hold these thin corners in knots and rough timber it must be very tough, and the only saw I have ever found that gave uniform satisfaction in this respect is the DISSTON, as their even temper and edge-holding quality is unexcelled.

I have never had a DISSTON SAW crumble, but have had trouble with all makes breaking off just back of the swage. This I have found was due to my anvil not fitting the back of the tooth, as when having this trouble I have invariably found that the swage was turning the points of the teeth down; this, together with a severe die, such as most filers prefer, is more than any steel, which is hard enough to hold an edge, will stand.

I worked in one of the largest shingle mills on the Coast where we cut the hearts of this highland cedar almost exclusively. Any filer knows what it is to make shingles from this kind of wood. While there we tried out four different makes of saws—they are using DISSTON SAWS all over the shingle mill now. I considered this a very good test as there was no favor shown.

I believe that most filers will agree with me on the thin corner for spongy wood, but in cutting the heavy, firm grained swamp cedar, a good heavy corner is better, as I find that plenty of swage stock makes the saw cut smoother and easier.

I am opposed to side-filing on account of the long corners, as this causes the saw to timber-bind as it gets a little

dull. I blame this to the corners rounding off and getting narrower than the heel of the swage.

I expect some of the filers will take exceptions to some of my statements, but would be glad to learn their views through the columns of the "Crucible".



CIRCASSIAN WALNUT.

Some interesting points with regard to the history and use of Circassian Walnut are given in a circular of the Forest Service.

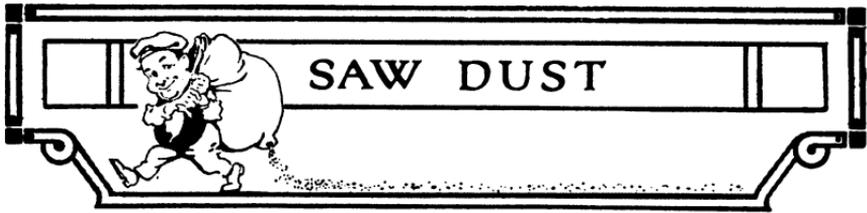
Botanically this wood is the same as English Walnut, although originating in Asia, in a region called Circassia, whence it derives its name. From here it has been brought to almost all countries of the world where it flourishes vigorously in temperate climates. Mention is made of Circassian Walnut being introduced in Italy as early as the time of Varro who was born in 116 B. C. It was well known and highly prized in Europe as a cabinet and furniture wood long before the discovery of America.

When more abundant, this wood was also used in Europe for coach making, toys, carved work and wooden shoes. During the wars of the eighteenth century it was so extensively used for gun-stocks that even then the supply was seriously decreased.

While native to the slopes of the Caucasus, Circassian Walnut extends in its growth to the Himalaya Mountains and northern India. Some authorities claim that it stretched across eastern Asia to Japan. Much of the timber is now shipped from the shores of the Black Sea, India and Persia. It is difficult to secure as it grows mostly in inaccessible regions and is difficult of transportation owing to its great weight and the fact that, when green, it will not float in water. Furthermore, the stands of timber are so scattered that logging is made very expensive.

It is a peculiar fact that the trees most prized are the ones which are short, stunted and twisted. Such trees give the most beautifully marked wood, valued for veneering. Much of

(Continued on page 32)



IN DAYS OF OLD

In days of old,
When knights were bold,
Great men there were, and daring;
They gloried more
In deeds of war
Than what the dames were wearing.

But in this age
It's all the rage
For men to come a-flocking,
And throw a fit
Whene'er a "slit"
Betrays a dainty stocking.
—A. G. Hunter, in *Judge*.

GROUNDS FOR COMPLAINT

HIP—Taste this!
HOP—Why, that's the best soup
I ever tasted!
HIP—Yes; but the steward had
the gall to say it is coffee!—*Michigan
Gargoyle*.

ROMANTIC

"Ever get an egg with a girl's
name written on it?
No; but this may be an incipient
romance. There's a finger print on
this piece of pie."—*Louisville Courier-
Journal*.



If women really do get to wearing
ankle muffs.—*N. Y. Evening Sun*.

THE EDITORIAL WE

While we take wood on subscription
we wish it understood that we have
not time to cut up lengths of 20 or 30
feet in sizes for the stove. Even
if we had we have neither axe nor saw,
and our wife has a lame back—
Bellmont (Mo.) Enterprise.

HE KNEW

MR. HENFUSSER—These Brahmas
are a very old breed of fowl.
MR. BORDEN-LODGE—I know it.
We had the founder of the family
for dinner at my boarding-house.
—*Kansas City Star*.

THE REAL BOSS

WIGG—Young Bjoness thinks he
is a born leader.
WAGG—Oh, many a fellow who
who thinks he was born to command
marries a woman who was born to
countermand.—*Philadelphia Record*.

NEXT

JIGGS—Paris society has adopted
tango baths.
JAGGS—Tango baths—what d'ye
mean?
JIGGS—A tub of ice water. You
slip in and wiggle out.—*Buffalo
Express*.

THE REASON

WIFEY—Anyhow a woman's mind
is always cleaner than a man's.
HUBBY—It ought to be. It changes
oftener.—*Illinois Siren*.

ON DANGEROUS GROUND

WILLIE—Paw, what is a free thinker?
PAW—An unmarried man, my son.
MAW—You may go to bed, Willie.
—*St. Louis Lumberman*.

THE CRUCIBLE HALL OF FAME



MR. JOHN BROOKS

We owe Mr. John Brooks, whose photograph appears above, a debt of thanks. He is one of the brave and kindly spirits who is willing to pass along the benefits derived from his experience so that other workers in the great lumber manufacturing industry can derive profit and help therefrom.

Mr. Brooks is a young filer in the employ of the Hampshire Spoke Company, a well-known concern of Hampshire, Tennessee. It is Mr. Brooks' business to keep in order the Disston Saws which are in use in this busy mill.

Here is what Mr. Brooks has to say:

"The Hampshire Spoke Company has three Eagan lathes with an average daily output of about 5,500 or 6,000 club-turned spokes. They use all the split stock that they can get which is split to proper size for the lathes. In addition to the split stock, they use all that will not split or is too small to be split, in sawed stock. That is where I come in. The butts or logs are cut 28 inches long in the woods the same as the split stock. Then the butts are sawed on what is known as an ax-handle table to $1\frac{5}{8}$ inches square. The rigs I am running are hand-fed. One carries a 42-inch saw and the other is a rip-table with an 18-inch saw. I had some trouble in sawing hickory buggy spokes because of the teeth breaking out of my saws, but found it was caused from too long tooth which I made at first $1\frac{1}{2}$ inches long. I find that $1\frac{1}{4}$ inches gives better results. As hickory is very firm hard timber I use a hand feed rig similar to that used in axe-handle sawing."

WHO'S WHO IN THE SAW WORLD



MR. A. A. GARDNER

Manager HENRY DISSTON & SONS, Seattle

Alexander A. Gardner, local manager at Seattle for HENRY DISSTON & SONS, may almost be called a native son of the State of Washington, for he has spent thirty years of his active and eventful life in Seattle. If you happen to catch him in a reminiscent mood he can tell you tales of days when the cows used to browse contentedly in the broad green fields which now are covered by the city's busiest thoroughfares, and office buildings that are second to those of only one city in the world.

Mr. Gardner started in to acquire a reputation when he was a boy in high school. Here he won fame, not only as a scholar, but as an athlete—fame which gained added lustre from his gridiron performances during his course at the University. Whenever old Washington had a few more yards to go to put the ball over the line, it was "Big Alec" who was called upon to turn the trick. The discus-

throwing championship of the Pacific Coast was another of Mr. Gardner's laurels in those days.

Eleven years ago, Mr. Gardner entered the saw mill field by joining the forces of the California Saw Works, then Pacific Coast mill saw distributors for HENRY DISSTON & SONS. He made a marked success in this line, and later, when HENRY DISSTON & SONS opened their own branches on the Coast it was only natural that his ability should be recognized and his services sought. Having seen nearby forests disappear before DISSTON SAWS, he knew their merits thoroughly.

Mr. Gardner's personal acquaintance is wide. Indeed, it is said that he knows nearly every lumber manufacturer, sawyer, and filer in the Pacific Northwest—which, by the way, is a pretty large territory.

While six feet, three inches in height, and developed in proportion Mr. Gardner is always good natured and democratic in his ways. When to this is added his widespread reputation for fair dealing, it is small wonder that wherever he goes he is welcomed and liked.

So far he has been too busy to get married, but with his many fine qualities, there can be little doubt that Cupid is hovering close at hand, waiting to put an arrow in the most effective spot. We can only hope that when the time does come he will make an even better showing in double harness than he has in single.

CIRCISSIAN WALNUT

(Continued from page 29)

this is cut from near the roots. Another unusual feature about the trade in this kind of wood is that it is bought by weight.

The exact amount of Circassian Walnut shipped into the United States cannot be determined because of its importation with other varieties under the general class of cabinet woods. It is believed however that this country is the largest consumer of this wood especially of the highly figured grades.

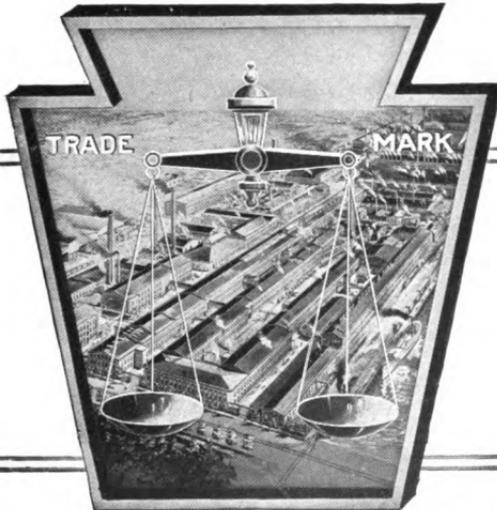
THE DISSTON CRUCIBLE

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TABLE OF CONTENTS

	PAGE		PAGE
RYTHER & PRINGLE CO.		A GREAT MAHOGANY MILL	42
MACHINE (<i>Frontispiece</i>)		GOOD AND BAD FILING	43
EDITORIAL CHAT	35	JIM	44
THE FILE	36	RAPID BUILDING	46
A MACHINE THAT SHARES HONORS WITH DISSTON SAWS	39	HALL OF FAME	47
OTIS MANUFACTURING CO.	40-41	MR. L. E. LULL	48



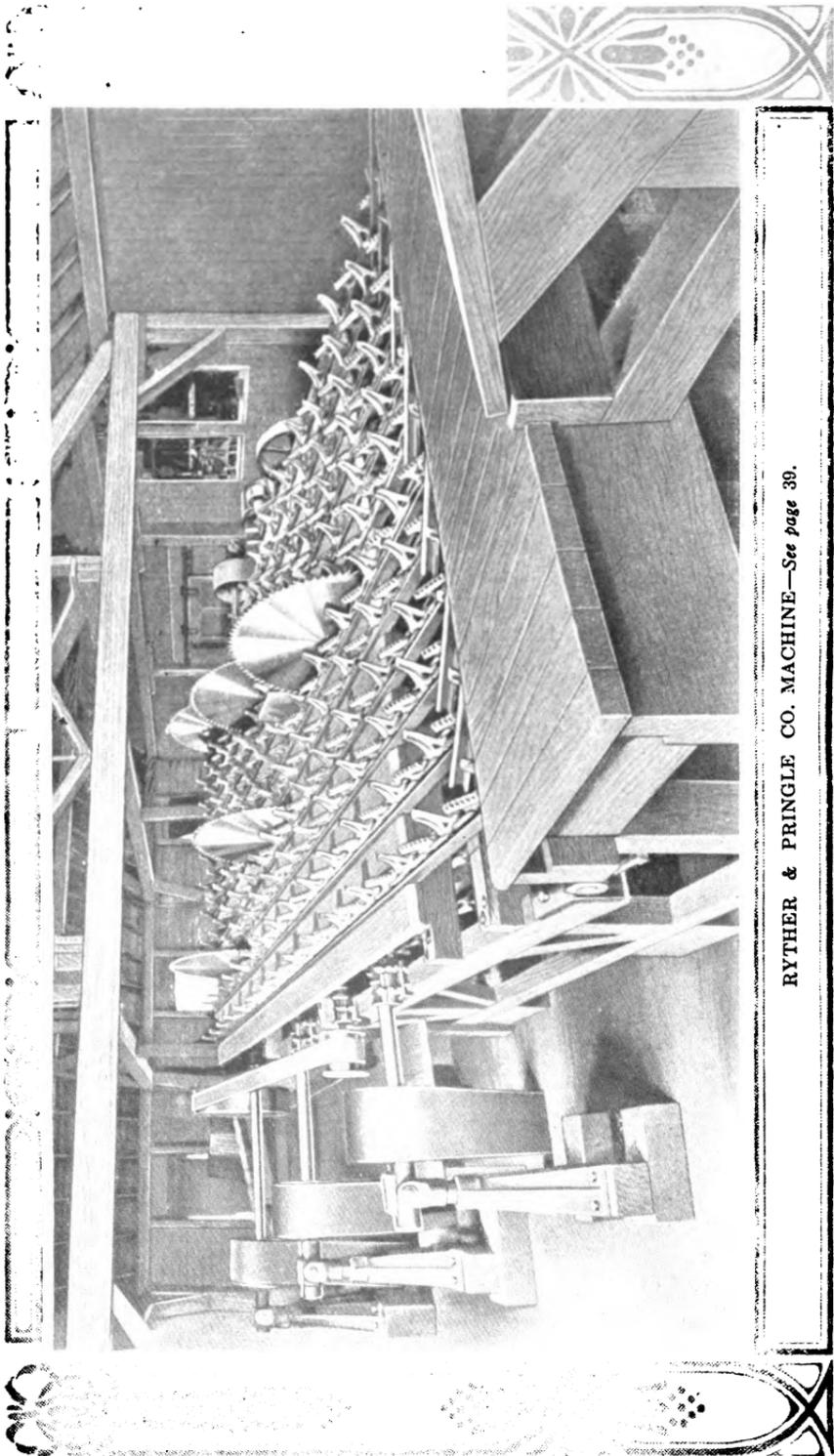
This Magazine is Published for the Advancement of the Interests of Millmen by

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RYTHER & PRINGLE CO. MACHINE—See page 39.

THE DISSTON CRUCIBLE

A MAGAZINE FOR THE MILLMAN

VOL. III.

APRIL 15, 1914

NO. 3

EDITORIAL CHAT

SIGNS OF PROGRESS

STANDING at the edge of some wide-extending, cut-over piece of land, the thoughtless person, with only a dim knowledge of the teachings of the conservationists to guide him, will exclaim: "Great Heavens—what destruction!"

But is it? Hasn't every tree that once beautified that far-reaching land gone to meet some need of civilized peoples? Hasn't some public or private improvement arisen from the passing forest?

Think of the thousands of houses, the innumerable pieces of furniture, the countless fires for cooking and warmth that have originated here. Picture to yourself the ships that sail the seas, the railway trains that destroy distances, the bridges that have eliminated great rivers—all depending for their being upon the forests, and the workers, who, with their busy Disston Saws, have felled, cut up and shaped to various purposes the trees that once stood here.

We don't mean that ruthless cutting of the forests should go on and on, without thought of the future. Those that advise the reforestation of the denuded lands are right. The future forests that Nature will build upon the sites of the old should be encouraged and aided by the thoughtfulness and care of man. The great waste places of China—the floods and famines that have resulted from real destruction of a once vast forest growth are ever before us as a vivid reminder.

But the American lumberman is not a destroyer. He is the foundation upon which civilization has, and is continuing, to raise her greatest monuments to human advancement and comfort.

To some, the disappearing forest brings only thoughts of destruction and future ruin, for they forget that Nature possesses the will and the power to again clothe the logged-off land with the forests that are necessary to man's existence. We view the scene before us in a broader light. This *temporary* barren land opens up the vision to greater things beyond. To us, the countless stumps stretching faraway are only *signs of progress*.

*Quality
Sells*

THE FILE

ITS HISTORY AND MAKING

PART ELEVEN

HAVING explained as clearly as possible in Part Ten, the differences in the teeth of files, we will now take up the varieties of files, together with some of their uses.

Modern files, though employed chiefly in the forming and finishing of metals, are also used to a considerable extent upon other substances, such as wood, bone, leather, celluloid, hard rubber, etc. The general use of files is in shaping small pieces, or in finishing surfaces which are already of approximately correct form. In machine shop practice the use of the file follows the work of the lathe or planer tool.

Files are graded by shape, size and fineness of cut, and the forms given to them, as well as the sizes, run into the hundreds. The sizes range from those employed in the heaviest machine work, which are eighteen inches or more in

length, to the tiny watchmakers' files that are less than one inch long. In the character of their teeth they vary even more greatly, from the deep Rasp-cut files used by farriers to the dead-smooth surfaces of the delicate little implements employed by jewelers. Files are classified as to coarseness and fineness principally by the "cuts" described in Part Ten, and upon these are based the variations which are required by the class of work to be performed.

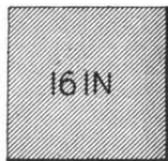
At the bottom of this page are shown sections of the files in general use. These basic forms, with slight deviations, control the forms of all files now manufactured. References to these sectional views, and the "cut" illustrations in Part Ten will be of considerable aid in following the descriptions of files that are to follow.

Under the general heading of files are found four groups, viz: Regular

SHOWING PRINCIPAL FORMS OF FILES



Round



Square



Three Square



Pit Saw



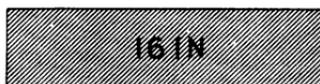
Half Round



Cant Saw or Lightning



Mill



Flat



Pillar



Great American

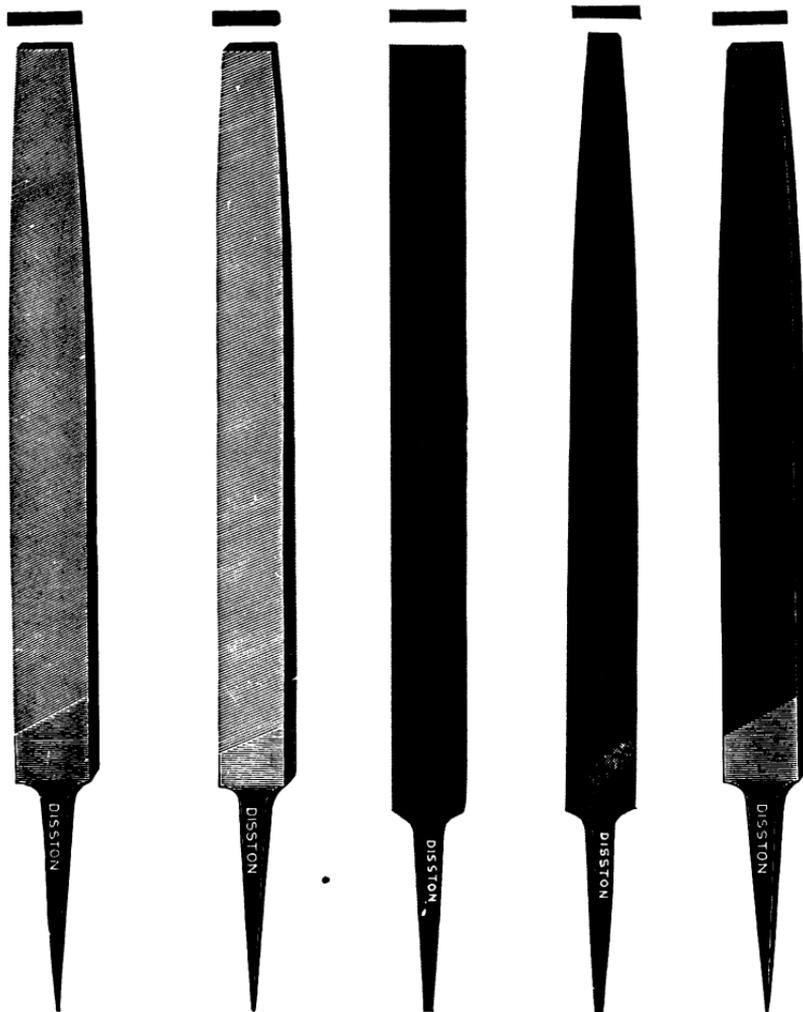


Horse Rasp



Shoe Rasp

THE DISSTON CRUCIBLE



Mill File

Mill File
One Round Edge

Blunt
Mill File

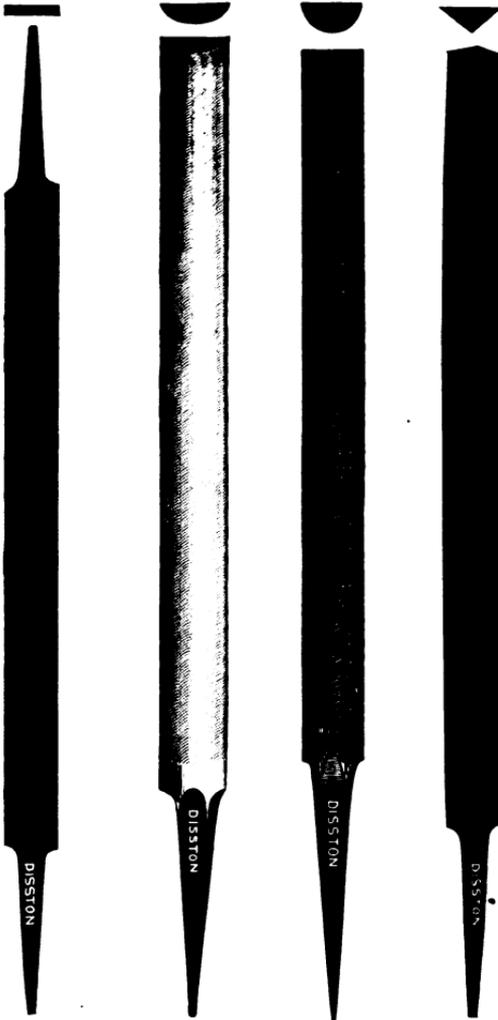
Narrow Point
Mill File

Fine Bastard Cut
Mill File

Rasp, Superfine and Special. These four groups in turn resolve themselves into other divisions which embrace a great variety of files.

Taking the first group, or Regular Files, we will picture and describe the different files of which it is composed. Under Regular Files, the first main subdivision is Saw Files; the second, Machine Shop Files. Each of these is further subdivided into Single-cut and Double-cut Files. The Single-cut Files, which are defined as Bastard, Second-cut and Smooth, will be considered first.

MILL FILES derive their name from the fact that they are used principally for filing Mill Saws and for sharpening Planer Knives. They are also used, however, for sharpening Mowing and Reaping Machine Cutters, as well as for certain kinds of work by mechanics, such as lathe work, draw-filing, etc. They are used, too, for finishing combinations of Bronze and Brass. Having chisel teeth they leave a comparatively smooth surface, which double-cut teeth do not, though double-cut teeth cut faster. There are a few



Double Tang Mill File Chisel Tooth File Pit Saw File Cant File

Mill Files that are double-cut.

Mill Files are forged tapering from near center to point. This applies to both width and thickness, as they are thinner and narrower at point.

Mill Files are also made with one and two round edges, single-cut both on the sides and edges. The round edges make the Mill File more adaptable for filing the teeth in Circular and other Mill Saws. The use of the round edge prevents sharp corners or notches in the gullets of the saw teeth, which lessens the liability of cracking. There is more of a demand for the one round

edge than the two round edges.

Blunt Mill Files are parallel in both width and thickness. This gives the full width of the surface for the entire length of the file. Otherwise they are the same as those just described. These are rarely used by millmen, but are mostly in demand for machine shop work.

The Narrow Point Mill File is another variation of the Mill File. There is no particular advantage in the extra narrow point, it being simply a matter of preference. Very few Narrow Point Mill Files are sold in the United States. The majority of those manufactured go to Canada.

There is also a special Mill File having what is called a Fine Bastard Cut. This is a cut between the Bastard and the Second-cut, and is used by many who prefer a file that will meet certain requirements in saw filing which a Bastard or Second-cut file will not.

The Double Tang Mill File is meant for use with two handles. A man can then grasp it conveniently with both hands. It is used chiefly for draw filing.

A Mill Saw File which departs somewhat from the standard form is the Chisel Point File. This is made especially for use

in sharpening the Point in Inserted Tooth Saws.

The Pit Saw File is used for filing the teeth in Pit Saws and Frame Saws. When used for the latter purpose it is sometimes asked for under the name of Frame Saw File.

The Cant or Lightning File is frequently used for sharpening the teeth of wood saws, or, as more commonly known, Buck Saws. Its principal use however, is to sharpen the teeth of Cross-cut Saws having M-shaped teeth, and to sharpen the Raker Teeth of Cross-cut Saws.

(To be continued.)

A MACHINE THAT SHARES THE HONORS WITH DISSTON SAWS

MANY of the leading saw mills in this country and Canada are using the Ryther & Pringle Company's Multiple Saw Slasher Machines for cutting up the lumber for wood pulp. We are specially interested in the achievements of these machines because they are equipped by the makers with DISSTON SAWS, and have selected as a typical example one which is installed in the mill of the St. Regis Paper Company at West Carthage, N. Y.

Situated in Carthage, N. Y., a locality where the manufacture of wood pulp had its first beginnings, the Ryther & Pringle Company were in an unusually good position to study and meet the requirements of the mills for the suitable preparation of the wood for further processes of manufacture.

The preliminary steps involved the design and manufacture of machinery capable of bringing the logs into the mill, reducing them to a uniform short length, the removal of the bark, and, where required for chemical fibres, their further reduction to chips. The system must also include methods and machinery for screening, cleaning and sorting the chips, and their final delivery to the chip bin of the digester house. Naturally this necessitated the design and arrangement of complete conveyor systems best adapted to handle the various materials at a minimum amount of labor and expense.

The efforts of the company have resulted in complete success, and they are today prepared to furnish complete designs for the buildings, and all equipment necessary from the point where the logs are first delivered to the mill, through to the grinders, in case it is a ground wood mill, or to the digesters, in the event of its being a chemical fibre mill.

While the machine at the plant of the St. Regis Paper Company is taken as a typical example, it is not a standard for all purposes. Conditions and requirements vary with nearly every mill; it is necessary to study these conditions and install a machine to

meet them. These Slasher Machines are installed with anywhere from one to eight saws—according to the requirements.

The frontispiece this month is made from a photograph taken at the wood preparing plant of the St. Regis Paper Company. This machine has been in operation for four consecutive seasons.

The logs, which are 12 feet long, are brought into the mill by a Parallel Chain Log Haul and delivered automatically to the Slasher. This is equipped with five 60-inch DISSTON SAWS, arranged so as to cut the 12-foot logs into six 24-inch pieces. The sawn blocks are then delivered automatically from the head end of the Slasher to a Cable Conveyor, which in turn carries them to a storage pile outside the mill. This machine is operated with a crew of eleven men distributed as follows:

Seven men are stationed at the foot of the Log Haul to guide the logs onto the elevator chains; two men are on the Slasher itself, and the other two men are on the Cable Conveyor which carries the sawn wood away from the Slasher. The direct labor cost resulting from this arrangement is less than 3 cents per cord, and includes all of the labor necessary to take the logs from the river, cut them into 24-inch lengths and deliver them to the storage pile.

During the four seasons that this machine has been in operation 163,000 cords of wood have been cut. The daily average cut being about 500 cords per ten hours. The total amount of repairs and replacements for that period averages less than \$5.00 per season.

It is well worth noting that the machine is operating with the original set of DISSTON SAWS installed with the machine. These saws have worn from 60-inch diameter to 55 $\frac{3}{4}$ -inch diameter in the cutting of the 163,000 cords of wood. This speaks strongly, not only for the perfect design of the machine, but for the great efficiency of the DISSTON SAWS with which it was equipped.



PLANT OF THE OTIS MANUFACTURING



2



4



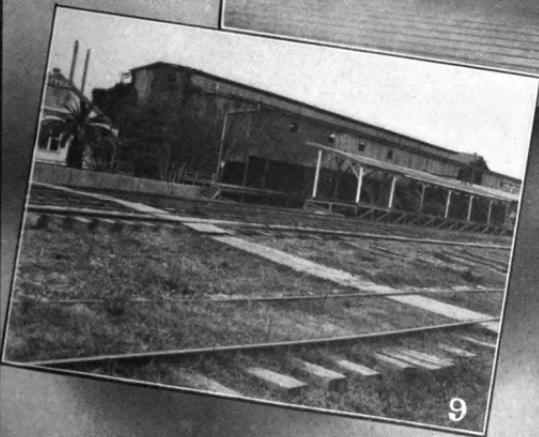
5



8



10



9

CO., NEW ORLEANS, LA.—See page 42

A GREAT MAHOGANY MILL

ONE of the largest—if not the largest—mahogany mill in the United States is that of the Otis Manufacturing Company at New Orleans, La. It is the only mill in the Southern territory that is cutting Mahogany and Spanish Cedar exclusively. The center spread this month (pages 40 and 41) shows a number of interesting views around their plant.

The Otis Manufacturing Company was established some fifty odd years ago by the father of the present members of the firm. It is their long and favorably known record which enables them, not only to purchase the best output of the Mahogany producing countries, but to gain the contracts for supplying some of the best known firms in this and foreign countries. Among recent instances of the high class trade they have may be mentioned the Commercial National Bank Building in Chicago, and the New Copley-Plaza, Boston's most beautiful hotel—both finished throughout with Otis Mahogany.

The length of a firm's business record has a much more important bearing on the securing of the rough Mahogany timber than most people realize. A new concern just starting in the Mahogany business finds, when it goes down into the Mahogany country, that it cannot do anything at all in the way of buying logs for some years. They must get acquainted with the peculiar class of people who get this Mahogany out. They will not pay any attention to a stranger. But to a concern that has been in business as many years as the Otis Manufacturing Company, and who are known to all the people who get this material out, they have all kinds of advantages not possessed by a new concern, no matter how much money the new people may have.

The people who get out these Mahogany logs are located all over Mexico, and South and Central America. Many of these are getting out logs for the Otis Manufacturing Company that will probably not be taken or paid for

for a year to come. This is one of the peculiar conditions of this business. Most people are not aware that Mahogany trees do not grow close together like other species. They are found growing with other trees in the forest, and if you find an average of one to the acre it is considered very good. Two trees to the acre would be an exception. This means extensive hunting over great expanses of interior country, and considerable labor and time to get them to the coast for shipment. While these people cannot obtain their money until the logs are delivered, it is possible for them to get advances when it is known that they are getting out the Mahogany for the Otis Manufacturing Company. All through that country, when any of the commissary or small store people know that anyone is getting logs out for the Otis Manufacturing Company, they will advance them money on these logs almost up to the price they get for them.

Of course, the Otis Company, or anyone else in this line of business, sometimes make advances on timber which they do not get for a year, and very often pay storekeepers and Commissaries who advance supplies to the men who get out these logs. As all this must be done far in advance they sometimes contract heavy losses through people not being straight with them, but as a usual thing they find these people will play fair, as the Otis Company is known to be absolutely reliable, always keeping their word and, in fact, more than their word.

The following explanation of the pictures on page 40 and 41 will be of interest to those not engaged in the Mahogany lumber business.

1.—The large boards in the front of this picture are used for tops of counters—especially those in saloons. At the back will also be seen their methods of drying. After coming from the saws the lumber is first exposed to sun and air for one week by being placed in racks as shown, or laid out flat as in No. 3. After that it is piled, as shown

THE DISSTON CRUCIBLE

in the back of No. 3., and further air dried.

2.—This is the office of the Otis Manufacturing Company—very attractively located, and finished in solid Mahogany. There is a private dining room provided for the office force. It might be well to mention here that a dining room is also provided for the mill force.

3.—This picture shows the two methods of drying as described in No. 1.

4.—This shows the interior of their mammoth storage shed with a capacity of one million feet of lumber. There they keep dry lumber of assorted grades and thicknesses ready for prompt shipment.

5.—The heavy pieces shown in this picture and No. 8 are cut just as large as possible out of solid logs, and then sold in these large sizes to such concerns as the Grand Rapids Furniture Co., and other furniture manufacturers in the United States. They are also exported largely to France, England and Germany to be re-sawed and cut up according to the dimensions in which they require them. As a matter of fact, these large sizes are few and far between; there is not one log in a hundred that will turn out board of this kind.

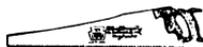
6.—This shows the inspector's shed, where the lumber is carefully inspected to make the grading as nearly correct as possible.

7.—View of the mill property, showing Mahogany logs in the boom. They have a large frontage on the Mississippi River. The steamers discharge the logs direct into the boom. They are thrown over the side and the current floats them into the boom, where they lay for days and weeks at a time as they have to be thoroughly water soaked before they can be properly manufactured.

8.—This picture was partly described under No. 5. Note the two-foot rule stretched out on the board. This gives a vivid illustration of the size. The lumber in the back part of this picture is "veneer" stock.

9-10.—Show views of the shipping facilities of this plant. Some idea of the extent of these may be gained from the fact that their switches hold thirty-five box cars.

We are indebted to our New Orleans branch, the C. T. Patterson Company, for the pictures used in this article. Through this branch the Otis Company purchase the DISSTON SAWS which enable them to turn out such high grade lumber. Their filing room is a model of completeness, where their excellent facilities for properly filing the saws enable them to get the very best service possible from their DISSTON SAWS.



GOOD AND BAD FILING

BY M. WRIGHT.

It may seem like a paradox, but you can not get the best of a good saw if you get the best of it by bad filing. Small saws for shop use stand proportionately as much work as do large saws on the mill, and they should be accorded at least a chance to do as good work. But sharp cornered gullets and backs too high are all too common on small saws, and the users are the losers, with the makers a close second for not making a better saw, when it all lays with the man who does the filing. Better a tooth too slim than one too blunt with the back sticking out to kick back on the cut. Where no emery wheel is available, use a rat-tail file and keep the gullets round after each filing. Don't leave sharp corners for cracks to start, and drop a straight edge from point to point, and see that the backs have sufficient clearance. Barring accidents, a saw thus treated is a pleasure to run, a profit to use and a source of satisfaction to both owner and maker. Note the condition of the teeth on a new saw and endeavor to keep the teeth in the same shape. You will find it will pay in service and in lasting qualities of the tool.

ELUCIDATED

"Henry, it says here that Mr. Jackson pelted the pill for three sacks. What does it mean?"

"Good heavens, Mary, can't you understand plain English? It means that he slugged the sphere safe and landed on the third pillow."—*St. Louis Lumberman.*



HELLO, Tom," unexpectedly, came Jim's greeting. "I've come back —aren't you glad to see me?"

I certainly was glad to see the old boy and find him looking like a "four-time winner," and with all sincerity expressed myself to that effect. After he had seated himself in his old-time chair, helped himself to a cigar, lighted it, cocked his feet at the desired angle, took a long puff, inhaled the smoke, and as he allowed it to slowly escape, looked at me with an air of approval and said; "I see you have changed the brand and I like it." I said "Thank you!" I have not heard your gentle voice for a long time, so get busy and tell me something. "Well," he began, "I came in purposely to get a listener; I'm suffering from a prolonged attack of suppressed, or, I might say, 'in-growing' conversation. I have been out in the Big Silent Places, listening to the kind of music nature makes in the winter time when old Boreas tunes his pipes and whistles, and old man Blizzard asks, in no gentle voice, 'What did you do with last year's overcoat?' I've been over in Montana with no one to talk to for several weeks, except a 'locator,' who was trying to lead me to a 'claim' he had 'located' last fall, by the same system the correspondence schools employ.

"Why I was fool enough to fall for a winter once over, is a story I won't tell you until the pain of the trip is purged away, because at present it would involve the employment of language I don't like to use, and besides it would not be proper in your present surroundings. I have come home to resume my playful travels amongst the millmen in this mild and equable climate, entirely divested of all desire to acquire property or chillblains in the place I just came from.

"You see, Tom, 'the place I just

came from' sounds in a way, abruptly immediate. Well it isn't quite that, for I've been back two or three days and have renewed a few acquaintances; for instance, I met 'Billy' Miles (officially W. C.) Manager of the Big Coast Lumber Association, and was somewhat surprised to discover a pessimistic streak in him in spite of the hopeful prospective of the Panama Canal opening, and some other indications of coming prosperity for the millman. One reason for this I think is the practical removal of the tariff on shingles has disturbed his commercial digestion to some extent. So to cheer him up I told him a story and suggested a possible way out for some of his friends, who under present conditions feel over-burdened with mill property.

"This is it: Old Si Clark kept a tavern on a fairly well traveled road in South Dakota, where, when opportunity came his way, he dispensed entertainment and refreshment for man and beast. This was the dull season and travel very light. No rain had fallen for several weeks; the weather was intensely hot, everything was hot, dry, and dusty, except Si; he was just lonely and hungry for conversation. One day, sitting in a shady corner of the porch with a palm leaf fan in one hand, a cool drink in a long glass at his elbow and an abstract eye on the road, he noticed a small cloud of dust moving very slowly up the road in his direction. There wasn't a breath of air stirring. He stopped the fan to watch the cloud; so he was naturally curious. As it came closer he was able to discern the cause of the disturbance—a dilapidated, rattle-trap canvas topped prairie-schooner. The motive power consisting of a mule and a cow. The forlorn condition and general appearance of the animals was in complete harmony with the vehicle itself; while, as a contributory factor in the creation of the dust cloud, tied to the rear axle of the wagon was a measly, spindle-legged heifer calf. The body of the wagon was partly filled with worn and broken household utensils, mostly home-made. The evident proprietor and conductor of this remarkable outfit sat on a stool in front, apparently half asleep, with lines loosely dangling and hat pulled

THE DISSTON CRUCIBLE

down over his eyes. The equipment moved slowly along with no apparent purpose of stopping at Si's hostlery. Si came to, and 'Hello, Stranger!' he yelled. Without changing his position, the stranger drawled, 'How-dy.'

"Haint, yah gonna stop?" said Si.

"Nope," came back.

"Whar yah goin'?" persisted Si.

"'Ta hell, ah reckon'," was the gentle-voiced reply.

"Won't yah hev a drink?" said Si desperately.

"Whoa!" came the answer addressed to the team.

"The stranger slowly uncoiled about six feet of 'Georgia cracker,' mostly legs, stepped down onto the ground and upon the porch a broad grin on his good natured, stubbly yellow-bearded face, as he said, 'it's mighty long while sence ah yeared a noise lak yo make.' Si was dying of curiosity, but restrained it long enough to produce the suggested liquor. After a couple of 'life savers', the specimen loosened up

in reply to the question as to where he came from. 'Ah cum fum Georgy, an done ben up yere in Haison (Harrison) County, 'Ranchin,' as yo alls calls hit, on a humstead Ah tuk up fum thu govment 'bout ten month sence. Mighty lonesom busness. Ah got plum tiahed an disgusted—last week a feller kum long—furiner of some kind—didn't know much United States talk. Ah finely made out he wanted to git an intrust in may ranch. He didn't hev nothin to represent ony that heifer calf what yo see tied to thu hind eks, so Ah traded him half mah hunered and sixty for the calf. Ah made out thu paper for the deal, an (here his face broke out into a wide grin as if the recollection was pleasant)—Ah couldn't help doing it, seein he wuz so ignunt, an jus done slipped him the hunered and sixty akahs, an lit out. Fum now on a haf akah 'll be erbout mah limit, an hit won't be in Haison County neither. Thank yo veah kindly, Ah reckon Ah'll be mov'n on'".

T.H.C.,



COMES NATURAL

PATRICK—"Well, anyhow, 'tis a foine job fer an independint mæn loike me-silf! Shure ivery minute av th' toime Oi'm doin' th' exact opposite av what th' other feller's doin'."—*Judge.*

THE DISSTON CRUCIBLE



RAPID BUILDING UNDER DIFFICULTIES

Few people ever connect snow with California. It is looked upon everywhere as the land of sunshine, warmth and flowers. Through the kindness of Mr. Frank Johnston of The Red River Lumber Co. at Westwood, California, we are enabled to publish the accompanying picture which will destroy many delusions about California. This State extends for many hundreds of miles along the Pacific Coast and embraces within its borders a wide range of climate.

This is a photograph of the Company's new mill the building of which was started Nov. 1, 1913. As the photograph was taken on March 1, 1914, it is possible to see the amount of work accomplished by thirty men in four months under very trying conditions; the snow being deep the greater part of the time.

The mill is 120x222 feet. The other building shown at the right of the picture is the Power Plant. This building is 72x82 feet and its construction is included in the four month period. The splendid progress made in the construction work speaks well for the able superintendance of Mr. Tom London, as well as for the energy of the men under him.

It is the purpose to make this one of the most up-to-date mills in its equipment that can be found anywhere in the country.

GOVERNMENT TIMBER FOR SALE

Sixty million feet of timber and 42 thousand poles are offered by the government on the Kaniksu national forest near Priest Lake, Idaho. The timber is said to be of excellent quality and all of it lies within four miles of Priest Lake, so that it is readily accessible and can be easily examined by prospective purchasers before the date on which bids are closed, June 1. Except for the pole material, which is cedar, the principal species are white pine and yellow pine. The timber now occupies some 5,000 acres.

URGENT

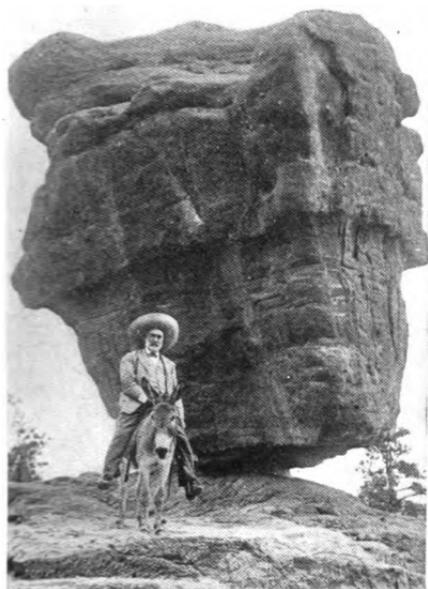
"Drs. Smith and Jinks are going to operate on Hawkins."

"Necessary?"

"Yep. Dr. Jenks wants a new car, and Dr. Smith has a heavy note coming due."—*Pennsylvania Punch Bowl.*



THE CRUCIBLE HALL OF FAME



MR. J. W. ANDERSON

Millmen will never know Mr. J. W. Anderson personally because he doesn't sell goods, or travel through mill territory. The work he does is not even of value to millmen. But at the same time his is such an unusual, and yet important, employment that we believe his picture and a short description of his work will be of more or less interest to the readers of the **DISSTON CRUCIBLE**.

Then, too, Mr. Anderson has a sort of fellow feeling for the millmen, because while he started life as a farmer, he also owned a small sawmill at one time. But all this has nothing to do with Mr. Anderson's business, which you are now probably curious to know about. Well, here it is:

He is an Apple Log Explorer!

That leaves you as much in the dark as ever, but we will explain just what this means. In the manufacture of saw handles various kinds of wood are used. It has been found, however, that Apple wood is the favorite for hand saw use. It is soft and easy to

the hand, and possesses great durability. The demand for it, therefore, is very large, and not at all easy to supply. A good live orchard bearing bountifully every season is a paying proposition, and as it takes some years for an Apple tree to begin to bear, the owner of a good Apple orchard is not inclined to sacrifice his trees for saw handles. It requires constant search from end to end of the Apple growing districts to find suitable trees, and no little business ability to conduct the negotiations for their purchase.

This is Mr. Anderson's "job"—to find proper trees to supply our steadily increasing demand for Apple wood to make into saw handles. His early life as a farmer, during which time he devoted a great deal of attention to Apple growing, fitted him for the special work which he took up in later years.

There are only certain sections of the country where Apple trees grow to a sufficiently large size, and while Mr. Anderson's travels take him as far as Oregon, it is mainly in the East that he obtains the best trees for his purpose. Trees under thirteen inches in diameter are very seldom bought. Mr. Anderson recently succeeded in locating and purchasing a tree in Adams County, Pennsylvania, which was thirty-eight inches in diameter and perfectly healthy. This was an unusually large size.

Only live, healthy trees are of any use, and it takes an expert to pick them out. In addition to his early experience with Apple trees, Mr. Anderson has now been engaged in the business of exploring for Apple logs about twenty years. He tests the quality of the trees while standing by sound, and by the appearance of the bark. And he seldom makes a mistake.

Mr. Anderson is still greatly interested in the scientific growing of Apple orchards and has an orchard of his own now, consisting of 110 acres in York County, Pennsylvania. In the excellent likeness of him which accompanies this article he looks more like a Mexican revolutionary leader than a plain business man. This was taken in front of the Balancing Rock, Colorado Springs, while on one of his exploring trips.

Before beginning his country wide hunt for Apple logs, Mr. Anderson was familiar with **DISSTON SAWS**. He says: "I ran **DISSTON SAWS** for twenty-five years in oak, etc., and never had to have a 'saw doctor' for one of them."

WHO'S WHO IN THE SAW WORLD



MR. L. E. LULL

YOU have come face to face with some good men under this heading, but in point of service, experience and ability, Mr. L. E. Lull, whose picture appears here this month, stands in the front rank.

For the last fifteen years Mr. Lull has successfully sold DISSTON SAWS in the service of the C. T. Patterson Co., New Orleans branch of HENRY DISSTON & SONS. Mr. Lull enjoys not only the entire confidence of his house, but is on the friendliest of terms with the trade in his territory, which covers Western Florida and Southern Alabama.

Mr. Lull was born thirty-five years ago in Oshkosh, Wisconsin, where he spent his early life. He now resides in Mobile, Alabama. He had extensive experience as a saw salesman before joining the Patterson Co., and, as his customers know, there is no one better equipped, from the standpoint of experience and general knowledge, to take care of their business.

In many parts of the west snow is leaving the mountains earlier than usual. Foresters say that this may mean a bad fire season, and they are making plans for a hard campaign.

WHERE PENCIL WOOD COMES FROM

The principal portion of wood used for the manufacture of lead pencils now comes from Southern Missouri and Northern Arkansas, in the Ozarks. Formerly a great deal of this came from Florida, in the cedar swamps.

There is a mill in Branson, Missouri, which cuts out lead pencil stock. This mill cuts the stock up into eight inch lengths, and into little slabs about one-eighth of an inch thick, and varying in width from seven-eighths of an inch to three inches. These little pieces are bundled and shipped to the pencil factories in this country and in Europe. It is said this mill cuts enough stock each day to manufacture a quarter of a million pencils. All told, there are sixteen mills cutting pencil stock.

Only the heart of the cedar is used. It is fine grained and does not warp. As a rule, the trees are small and stunted, seldom being greater than twelve inches at the butt. — *West Coast Lumberman.*

SAWDUST AS A FIRE EXTINGUISHER

Sawdust as a fire extinguisher sounds absurd, but recent experiments in Boston proved it to be very successful in quenching fires in oil, and much superior to sand for fires in tanks of inflammable liquids. The experiments were conducted with tanks of burning lacquer, though the same principles appear to apply largely to tanks of burning oil. The floating sawdust forms a blanket that shuts off the air from the flames; and, as sawdust itself catches fire only slowly and then does not burn with a flame, the sawdust blanket was completely successful in putting out the fire in these tests. It made no difference whether the sawdust was wet or dry. — *Saturday Evening Post.*

FILERS FOR FOREIGN COUNTRIES

The Crucible has established a special department for looking after the requirements of filers who desire positions in foreign countries. It is suggested that those who are willing to accept positions out of this country send in their names, together with all necessary particulars.

We will hold these pending any inquiries. Keep us advised of any change of address.

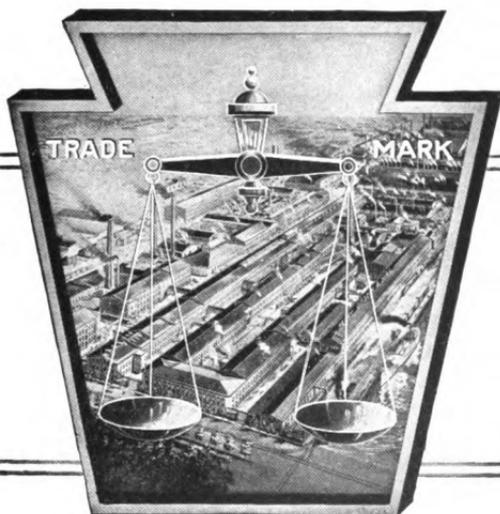
THE DISSTON CRUCIBLE

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TABLE OF CONTENTS

	PAGE		PAGE
DISSTON BOOTH, FOREST PRODUCTS EXPOSITION <i>(Frontispiece)</i>		ROBBINS LUMBER COMPANY	71-73
		A PRIMEVAL FOREST . . .	74
EDITORIAL CHAT	67	JIM	78
THE FILE	68	HALL OF FAME	79



This Magazine is Published for the Advancement of the Interests of Millmen by

HENRY DISSTON & SONS

INCORPORATED

Keystone Saw, Tool, Steel, and File Works

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DISSTON BOOTH AT
 FOREST PRODUCTS EXPOSITION, COLISEUM, CHICAGO
 April 30th to May 9th, 1914

—See page 71

THE DISSTON CRUCIBLE

A MAGAZINE FOR THE MILLMAN

VOL. III.

JUNE 15, 1914

NO. 5

EDITORIAL CHAT

FOUNDATIONS

IT is the foundation of a structure which is the most important. If it be weak, insecure, the finest edifice built upon it will be worthless. No matter how excellent the materials, the architecture, the skill of the artisans which goes into the super-structure, it may collapse in a night, if the foundation is not firmly bedded and honestly built.

So it is with the learning of a trade, or a profession. A mastery of the first principles must be laid as a foundation; a knowledge of preliminary details, before a lasting structure of ability and worth can be upreared. A man must first learn to swing the hammer before he can hope to hammer the saw.

The same principle operates in the building of good saws. Expert workmanship, carrying out proven designs in thickness of blade or shape of teeth, cannot build a lasting smooth-cutting saw without the foundation of a suitable steel to work upon.

Fifty-nine years ago the DISSTON STEEL WORKS were established. Thus began a new era in saw making. It was not only the first plant of its kind in America, but the first anywhere in the world to produce a perfect saw steel—a steel possessing the peculiar qualities necessary to the manufacturing of a perfect saw. THE DISSTON STEEL WORKS are in charge of an expert who thoroughly understands the requirements of a perfect saw steel and the making of DISSTON STEEL to meet those requirements. Under his supervision are other experts who have, through constant invention and experiment, continued to improve this famous steel.

Today the DISSTON furnaces are turning out more high-grade crucible steel than any other crucible steel melting plant in the world. Conclusive evidence that the foundation of DISSTON products is firm, honest and enduring.

*Quality
Sells*

THE FILE

ITS HISTORY AND MAKING

PART THIRTEEN

BEFORE closing this description of single-cut saw files it may be well to call attention to two Taper Files which vary slightly from the usual forms. These are made princi-

pally for export as there is no great demand for them in this country.

One of these is a Taper File cut to the point. That is, the "cut" is carried to the extreme end, or point, of the file instead of stopping some distance away. This difference can be seen by comparing the accompanying illustration with those in Part Twelve.

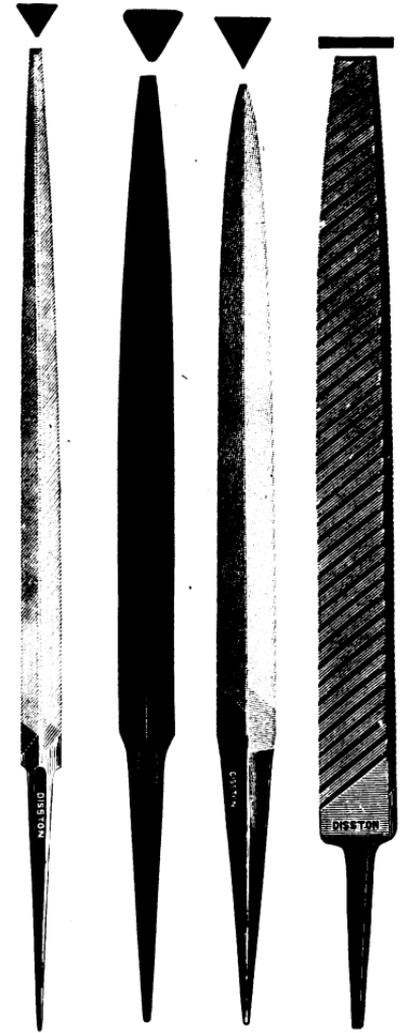
The other is the French Taper File which is similar to the regular file in all respects save that the section of steel from which it is made is much heavier.

In taking up Double-Cut Files under the division of saw files it is to be noted that many of the forms of files which are generally single-cut, and were described under that heading, can also be obtained as Double-Cut Files. Mill Files and Taper Saw Files are typical of this. Also, in a limited way, Cant and Pit Saw Files. While the double-cut files cut faster, the single-cut make a much smoother cut.

A special double-cut Taper File is that known as Stubbs' Pattern. This file is double-cut down to the point and is principally used for filing saws that are harder than usual, such as Hack Saw blades. The most noticeable difference in the Stubbs' Pattern File is found in the tang. Instead of having a shoulder where the body of the file usually drops sharply down to the small diameter of the tang, the tang gradually tapers off with the three edges carried all the way to the point.

As practically all saw files are single-cut this description of double-cut saw files completes the list of this class of file, except those used on metal cutting saws. Files of this nature, however, require a superfine tooth and will, in consequence, be described under the heading of Superfine Files which will be taken up later.

The next sub-division to be considered under the heading of Regular Files, is Machine Shop Files. These, like the Saw Files, are also again divided into single and double-cut, but the majority are double-cut, just as single-cut predominate in the saw files.



Slim
Taper File,
cut to
point

French
Taper
File

Stubbs'
Pattern,
Double Cut
Saw File

Perfection
Shear Tooth
File

THE DISSTON CRUCIBLE

This is because the greater part of machine shop work requires fast, heavy cutting which is only obtainable from a double-cut file.

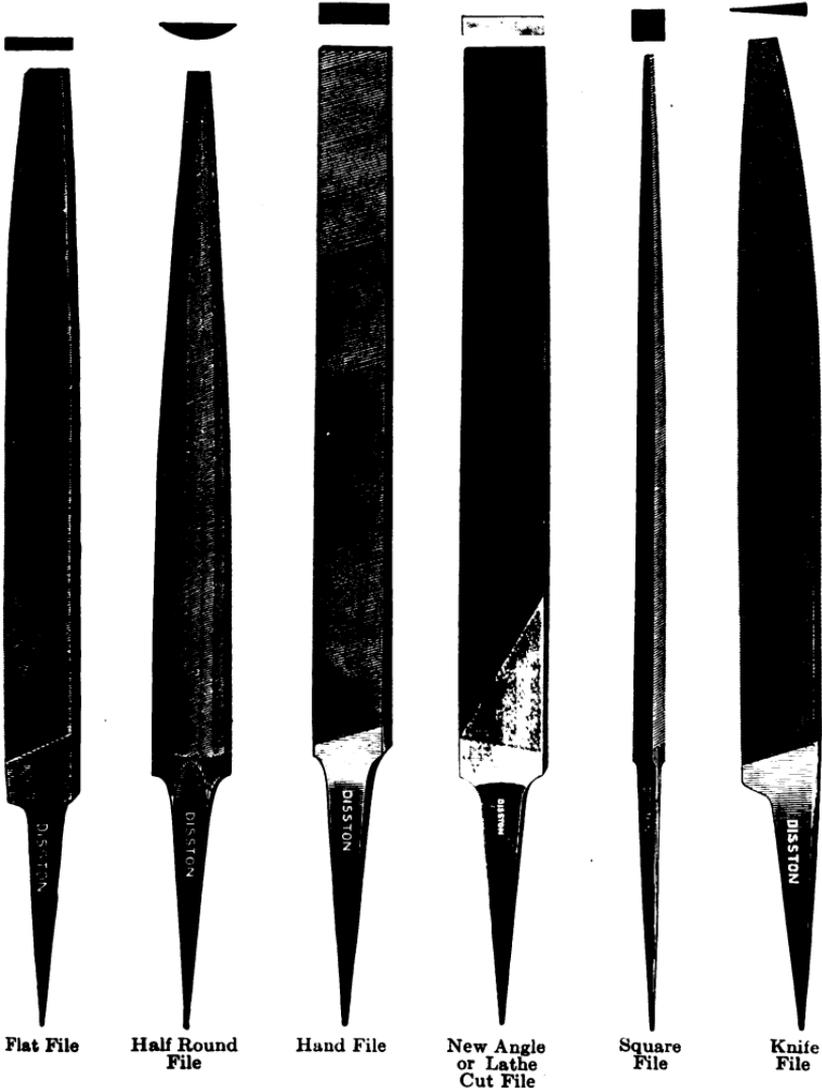
The only single-cut file to be mentioned under this heading, however, is somewhat of an exception to this statement. This file is called the Perfection Shear Tooth. In form, it is usually like the Narrow Point Mill File, while its teeth are much coarser and farther apart than in the ordinary file. These teeth vary in size according to

requirements, and are known as coarse, medium or fine cut.

The Shear Tooth File is adapted for quick work on metal, such as soft steel, iron and brass castings, as well as wood and marble. It is especially valuable to machinists and for lathe purposes. In action it makes a shear cut, filing rapidly and giving clean, smooth results.

This style of tooth can be placed upon almost any shape of file when ordered.

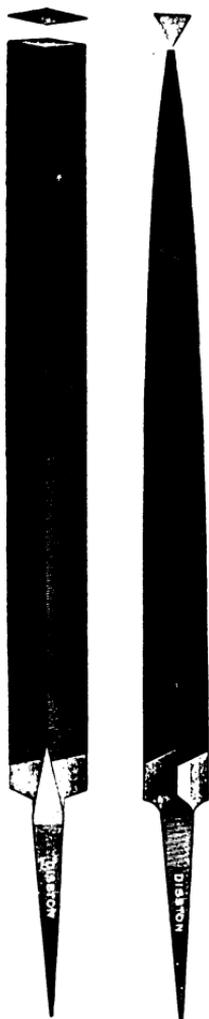
Quite a long list of files are found



THE DISSTON CRUCIBLE

under the Double-Cut heading for machine shop use. The leading files for this purpose, however, are the flat and Half-Round Files.

Flat Files are tapered both in width and thickness, and are always double-cut. They are sometimes made Blunt in form (parallel both in width and thickness), and can also be obtained with two round edges if required. Flat Files come in several degrees of "cut"—Rough, Middle, Bastard, Second Cut Smooth, Dead Smooth, Double Dead Smooth.



Feather Edge File

Three Square File

In addition to their large machine shop use, Flat Files are in great demand by mechanics of all descriptions.

The Half-Round File, which divide machine shop honors with the Flat File, is as its name implies, half-round in form and tapering. This shape makes it a most useful file for general machine shop work. While usually tapered, the Half-Round File can also be obtained as a Blunt File.

Round Files already referred to in Part Twelve, are also widely employed in machine shops. They are used mainly for enlarging holes, and shaping angles, for which an angular file could not well be used. The Round File in Blunt form is used on the heavier kinds of work.

Somewhat similar to the Flat File is the Hand File. This is made tapering in thickness, but parallel in width. They have one safe edge (that is, an edge with no teeth) and are used chiefly by machinists and engineers for finishing flat surfaces, etc.

Resembling these files also is the New Angle, or Lath Cut File. On this file the first, or "over-cut," is always straight across, instead of at an angle, while the second or "up-cut," is placed at a much greater angle than is usual in cutting files. The result of this is to get a much larger cutting surface on the file at one time, making it fast cutting and fine finishing. This file is much in demand for lathe work.

Square Files are used by nearly all classes of mechanics for filing apertures or dressing out square corners. While they are regularly made slightly tapering in form, they are also obtainable in the Blunt (parallel) form.

The Knife File is forged tapering and quite similar in shape to the blade of a pocket knife. It is usually made in lengths of from four to fourteen inches, but can be made in all sizes and is always double-cut. It is mainly used on metal, and is especially adapted to a number of different kinds of work for which this shape fits it.

A somewhat similar file for which there is not such a strong demand is the Feather Edge File. The Knife File having a sharp edge and angular form (like an acute angle) which answers almost every purpose required of such a file is probably the reason. Unlike the Knife File, however, its thickest point is at the centre, from which point it tapers to a thin edge at each side.

The Three Square File, which has been referred to on several occasions, is a three-sided file formed along the same lines as the Taper Saw File. Its form, in fact, is the basis for the Taper Saw File.

The Three Square File is tapered, the teeth are cut all the way to the point, and it is always double-cut on all three sides. The edges are uncut and left very sharp. It is a popular and much used file in the machine shop, but is employed chiefly in cleaning out sharp angles and square corners, and filing cutters, taps, etc.

The Three-Square File is sometimes made in the Blunt Form. While resembling the Taper Saw File so closely that a person not familiar with files might mistake one for the other, they are entirely useless as saw files.

DISSTON BOOTH AT FOREST PRODUCTS EXPOSITION, CHICAGO

AT the recent exposition of forest products, held in the Coliseum at Chicago, the DISSTON Booth was a point of interest to the many millmen and representatives of the lumber industry who were present.

This exposition was planned by the various lumber interests of the country to interest the general public in the various kinds of wood and their uses. Of recent years many manufacturers of substitutes for wood have pushed their products to the fore and succeeded in introducing them in many cases where wood should have had the preference. It was one of the important features of this wonderful forest products exhibit to counteract this tendency and to give the public at large a fuller appreciation of the beauty and utility of the many kinds of lumber produced in this country.

Quite naturally, in an exhibit of this kind, the manufacturers of saws and mill machinery occupied an important place. For the success attained in lumber manufacturing has been due in large measure to the improvements made in the quality and capacity of saws and machinery. The firm of HENRY DISSTON & SONS has always been a leader in the saw making field. The ripe experience of the many men who have been with this concern for years, supplemented by a keenness and readiness to meet the growing needs of the lumberman has given to the saw-milling world a line of saws which is known in every country of the globe for its variety and dependability.

Several DISSTON representatives were constantly on hand at this firm's booth, greeting their many patrons. One of the best known of the DISSTON men was "Sam" Southern, whose photograph and interesting story have appeared in the columns of this magazine. In the thirty-one years of his connection with HENRY DISSTON & SONS he has made hosts of warm friends, both for himself and for the house he represents. This was proved abundantly by the constantly passing stream of men who came over to shake his hand.

One of the interesting features of the DISSTON Booth at the exhibition was a neat booklet describing DISSTON Saws for all purposes, which was given away to visitors. The book also gave an entertaining history of the growth of this great firm together with a description of the saws, tools and files which it manufactures.

ROBBINS LUMBER COMPANY

THIS company, whose plant, consisting of Saw Mill, Planing Mill, Flooring Mill and Dry Kilns, is shown here on our centre-spread pages this month, has been located for the past 28 years at Rhinelander, Wis.

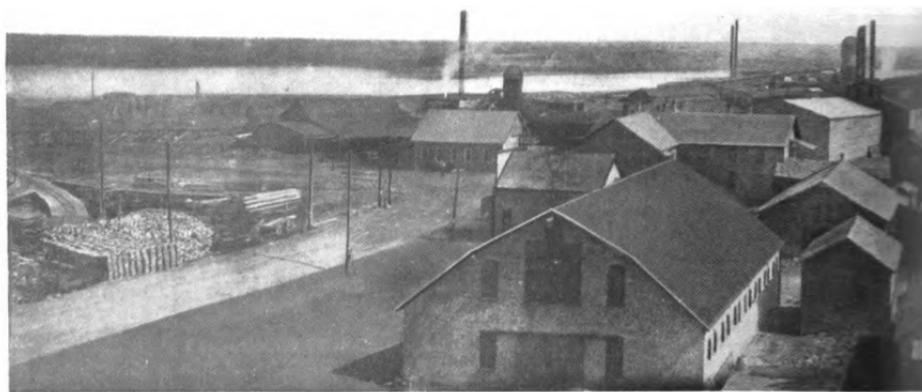
An excellent idea of the size as well as the completeness of this company's plant will be gained from the panoramic illustration on pages 72-73.

Mr. F. S. Robbins is President and active head of this enterprise. He is 68 years "young" and puts in as good a day's work as any man on the job. It is said that he is the first man on the scene in the morning and the last one to leave at night. Nearly all the years of Mr. Robbins' eventful and successful life have been given to the promotion of lumbering. He has been a thorough-going timberman from boyhood up.

In the present organization, Mr. Robbins is ably seconded by Mr. R. D. Caldwell, who is Vice-President and Wood Superintendent, in which latter capacity he keeps a watchful eye upon the large area of timber land controlled by the company. About fifty miles of railroad are maintained by the company for bringing the timber, which consists of pine, hemlock and hardwood, to the mill. Some 300 men, including the railroad crew, are employed here the year round, the annual cut amounting to 20,000,000 feet, while at the mill the daily average cut is about 100,000 feet.

The wasteful methods of other days are gone in the timber industry. It is now realized by many companies that the logged over land is worth something. The Robbins Lumber Company appreciating this fact, already have 300 acres of their holdings stumped, plowed and planted. Last year 12,000 bushels of potatoes were taken from this tract—a remarkable crop, and one which indicates the farming possibilities on cut-over lands. Many progressive lumber concerns are working along these lines with excellent results and we expect in a later issue, to give a detailed description of one such operation.

Both Mr. Robbins and Mr. Caldwell are frank and enthusiastic in their endorsement of DISSTON SAWS. They use DISSTON CROSS-CUT SAWS in the woods, and a large number of Circular and Band Saws in the mill.



PLANT AND BUILDINGS OF THE ROBBIN



LUMBER CO., RHINELANDER, WISCONSIN.

A PRIMEVAL FOREST AT A CITY'S GATE

By C. P. McDONALD.

FOR over half a century Hiram L. Makemson enjoyed a vacation in the woods, such a vacation as no other man ever had.

The woods in which the old gentleman lived close to nature are six miles southwest of Danville, Illinois. They

and took possession of the New World in the name of Isabella and Ferdinand of Spain it was beginning to flourish. The American Indian may have found shelter and seclusion in its depths, but civilization never has entered it. Never has a single tree of this 400-acre tract been felled.

Hiram Makemson came into possession of this virgin forest at the death of his father, "Uncle Andy" Makemson. President John Quincy Adams issued letters patent on a large part of it to Uncle Andy in 1826. President Martin Van Buren, in 1837, signed the certificate that completed the 400 acres.

Uncle Andy was a money maker; Hiram had no inclination to amass a fortune. He was content to pass his life in the bosom of his beloved forest. His trees constituted his being. He guarded them from the encroachment of civilization more jealously than he guarded, in after years, the safety of his children. Perhaps, as one of them believes, he loved the trees more deeply, with an affection that grew more intense and more selfish with the passing of the years.

Hiram Makemson died in April leaving four heirs—a son, two daughters, and a grandson. His son-in-law, William Current, has been in charge of the Government revenue work in Danville for over twenty years.

"Most of this land," said Mr. Current. "Mr. Makemson inherited from his father. However, a large tract of this timber he purchased from Pincher and English, bankers. They were holding it in trust for William Woods. The Woods family originally entered that land, I think—a good bit of it, anyway.



A 600 year old Black Walnut tree.

form a virgin forest of black walnut, white ash, and white oak that never has known the meaning of the word "trespass" nor the woodman's axe.

Most of the timber is between 400 and 500 years old. When Columbus kissed the earth of Watling Island

THE DISSTON CRUCIBLE

"In the early days Woods was a cattle and horse shipper. He couldn't make a success of the business, however, and finally was forced to sell the land. The bankers got possession of it, as I recall the circumstances, by liquidating Woods' debts, about fifty-two years ago, as I remember it now—you see, I'm seventy years old myself—and paid something like \$40 to \$50 an acre for it.

"In those days timber wasn't so very valuable, and I should say that approximately \$100,000 worth of walnut trees was cut down and converted into fence rails, logs for log buildings, and so on. The pioneers were partial to forest black walnut because it was easily chopped and easy to split. It never rotted, either, and that was a big factor in those times.

"Uncle Andy tackled few things that didn't net him good returns. Hiram inherited few of his father's traits. Many years ago he dabbled in cattle raising and farming, but he never went into anything seriously.

"He never would sell this forest. He spent the greater part of his time in the woods and seemed to love each individual tree. Some of the trees have stood in that forest for hundreds of years. Some have been destroyed by lightning. Hiram never permitted one of them to be touched. Few persons ever entered the forest. They seemed to know that Hiram wanted his trees all to himself and they respected his wishes.

"Lumbermen seemed to have the impression that Hiram some day would consent to sell that timber, although it is my personal observation that he never encouraged them in that belief. They've come down to Danville for years seeking to buy it. When they broached the subject to him and offered to estimate it, he would say simply: 'All right, boys; go ahead and make your estimates if you want to. But I ain't agoing to sell.'

"Mr. Makemson was thrifty, as thrifty as any man ever could be.

Years ago he might have converted his holdings into cash, but he steadfastly refused to do so. He often told me that if he had the cash there was a possibility of his losing it, but so long as he clung to the timber he would leave something for his children,



A spot in the northwest tract where the sun seldom penetrates

because he couldn't lose the land if he kept the taxes paid.

"None of us knew what that timber was worth. We'd never investigated the matter seriously, because Mr. Makemson always said that as long as he lived he would not part with his trees. He rented some of his farming land and with the proceeds paid his taxes.

"He paid \$400 a year on the timber land alone. They assessed that land higher than they did the land under cultivation. Lands hereabouts usually rent for from \$70 to \$90 an acre, and they had his timber assessed at \$150—almost double what they assessed the improved land.

"As I have said, Uncle Andy made money. When his wife died he lived with Hiram and kept Hiram hustling.

THE DISSTON CRUCIBLE

When Hiram's wife died Hiram seemed to give up and didn't worry about making money. It cost him little to live. He lived out on the home place with the three boys—his son-in-law, Sherman, and his grandson, Joe Byrd—sleeping in the house at night and spending his days among his trees.



A majestic Black Oak in the corner of the southwest tract.

"We tried every way on earth to get him to move to town, for the boys left him alone quite a lot of the time, but we couldn't prevail on him. His trees, he declared, were about all he had left. So he just guessed he'd keep right on living with 'em and studying 'em.

"Hiram, of course, could have made money, but he didn't have the inclination. It seemed to me if he had done what I would have done at his age—well, I would have sold this timber thirty-five years ago or so

and invested the proceeds in land. It was worth \$20 to \$30 an acre in those days, where it now brings \$150 to \$200. I would have had a good income from that land all these years, instead of holding on to the timber and paying taxes.

"When the old gentleman died his heirs decided to offer the timber to the highest bidder. We advertised for sealed bids. The laws of the State of Illinois provide for the settlement of an estate without an administrator. This work fell on my shoulders. The heirs didn't know what the timber was really worth—in fact, they hadn't the slightest conception of its true value—and I investigated the matter.

"The court cost for making the division of the land amounted to \$1.15. There was no partition suit. Each heir received 200 acres of land, making quit claim deeds to one another, but the walnut, oak, ash, and hickory were reserved. The timber was sold jointly and the money split between them."

"For the last twenty years," said F. M. Guston, proprietor of Danville's big livery stable, "lumbermen have come to my place and hired rigs to go out to old Makemson's woods. I should say that from twenty-five to thirty lumber dealers and their agents have come here every year in an effort to get the old man to sell his trees.

In the last eight or ten years business hasn't been so heavy. The pilgrimage kept up for a good many years, however, because it was supposed somebody some day would land that tract. Mr. Makemson finally shut down on 'em and refused to listen to anybody who talked buy.

"These men—some of whom had come all the way from Europe—told me that this was the finest piece of walnut timber in the world. Renting rigs to these fellows for twenty years has brought me a lot of money, to be

THE DISSTON CRUCIBLE

sure, and I expect, now that it is sold, it'll bring me considerable more. The

"It might cause comment, Hiram," said I.

"S'pose it does?" he replied. "I don't care what people say about me. They don't pay my bills and I never had to ask one of 'em for a penny."

"And the following day the buggy was equipped with the iron cultivator wheels.

"Hiram bought few clothes. 'Why should I?' he would ask. 'I've got nothing that demands fancy trimmings. I have my trees—my beautiful trees, God bless 'em!—they're all I care about dressing up for. And they don't demand good clothes. They'd rather see me in the garb of a poor man. They want me common like, fit to associate with. Let me get out in that forest and soak my hide full of the glory of that timber, that's my ambition. I don't want to be away from 'em long enough to eat. They're my life, my all, my very being. Take away my trees, and I wouldn't want to live any longer."

(Continued on page 80.)



Where the photographer was compelled to cut his way through tangled underbrush in order to take pictures. Forty seconds exposure.

average trip to the woods cost about \$3. My prices ran from that to \$6 a trip."

"Hiram Makemson," said one of his closest friends and neighbors, "was what one might call eccentric. He had a reputation for thrift that bordered on stinginess, and some of the boys went so far as to say Hiram had the first nickel he ever got.

"Maybe he did, I don't know. I do know he was saving and didn't believe in spending money. He rode around here for years and years in a buggy that was so old it was dropping to pieces. It finally lost both rear wheels.

"It's too much shot to pieces," declared Hiram, 'to spend good money in fixing it up. I've got an old cultivator in my barn, and I'm going to take those two iron wheels off it and put them on my buggy. Iron wheels are just as good as any in these parts.'



White Oak tree estimated to be 1600 years old.

THE DISSTON CRUCIBLE



"WELL Tom," said Jim as he lighted-up and fixed himself for a little chat, "I have a particularly strong liking for most of the old boys down in southwestern Washington; you couldn't find a better bunch anywhere in the world where the big saws sing their song. Most of them have a spirit you must admire regardless of what you may think of their judgment; like the old rancher said of his favorite ram when he tried to butt a locomotive off the track—'I admire yer spirit old feller, but damn yer judgment.'

"Now some of the old boys down there are, in a way, like that; to shut down the mill is equivalent to what lowering the flag to a foe would be to one of the Old Guard, or what 'Pike's Peak, or bust' meant to the old pioneer; even at that, there isn't very often a 'bust', although now and then some of them do get mussed up a bit in the 'butting' proposition.

"You know, of course, Harry McCormack who used to operate on the South Bend Branch. I remember one time in the early days of the Southwestern Lumber Association there was a meeting at Centralia. Times were pretty good, orders were plenty, prices fair to middlin'. Harry, if I remember rightly, was President of the Association; at any rate he had a lot to say and wasn't often afraid to say it. There had been considerable discussion as to the advisability of making an advance in the price of lumber, and, as usual, Harry was an eloquent advocate in favor of the raise. The Association, at the time, had a sales agent in Chicago handling their output, and his advices strongly disapproved of such action, and many of the members were inclined to follow his advice. The discussion after a time waxed warm and some of the members were rapidly getting them-

selves into the same condition. Suddenly Harry jumped to his feet—literally jumped—and began to talk. Say, he did certainly talk, I can't recall all he said but distinctly remember his wind-up; this was it, 'I tell you gentlemen of this Southwestern Association, if this man who represents us in Chicago were to drop dead tomorrow, the gift flowers on his coffin wouldn't be withered before the price of Southwestern Washington lumber would go up two dollars a thousand.'

"Well, his eloquence was irresistible; the crowd was with him and the new price went into effect immediately, but alas! (that's to express regret) it didn't last long—it usually don't.

"Just to change the subject, I want to say it's curious how easily a man can get in wrong when talking to a boy. Sam Bender was telling me how a little nephew of his put one over on him without any intention. It appeared that this boy thinks Sam is the very wisest old Solomon ever was. The boy lived where he had never seen a negro until Sam took him into town one day as a special treat. In the course of their peregrinations they met on the street a 'nigger' lady, and as she passed them the boy said, 'say uncle, why did that woman black her face?' Sam explained, 'she didn't, that is her natural color.' The boy says 'is she like that all over?' Sam says, 'Why yes.' The boy looked up at his uncle with enthusiastic admiration and said, 'Gee! uncle, You've seen everything, aint ya?'

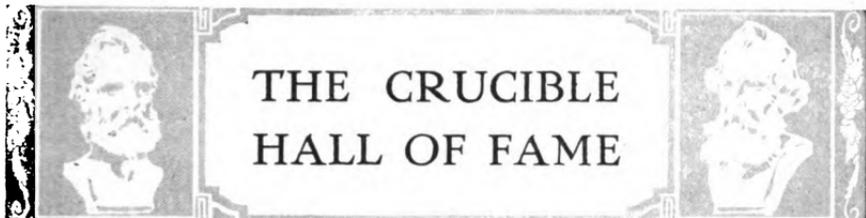
"You see, Tom, Sam was in, wasn't he?

"Well, I must get a move on, so goodbye." and Jim left.

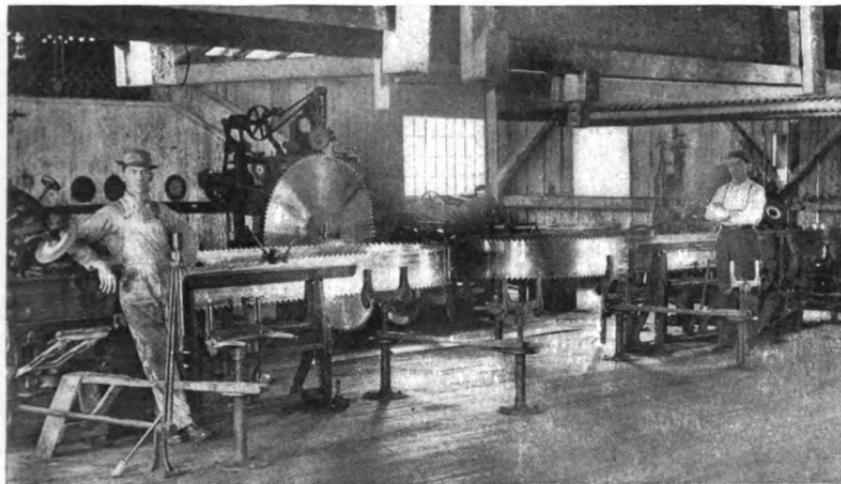
NEARLY PERFECT

A Scottish farmer of a miserly disposition bought a horse at a fair. On the way home he thought a drink of water would refresh it, so he got a pail of water; but the animal would not take it. When he got home, he offered it a feed of corn; but to his surprise it would not touch that, either.

"Weel," he muttered to himself, "if only I was sure ye were a guid worker, ye're the verra horse for me."—*Pittsburgh Chronicle-Telegraph.*



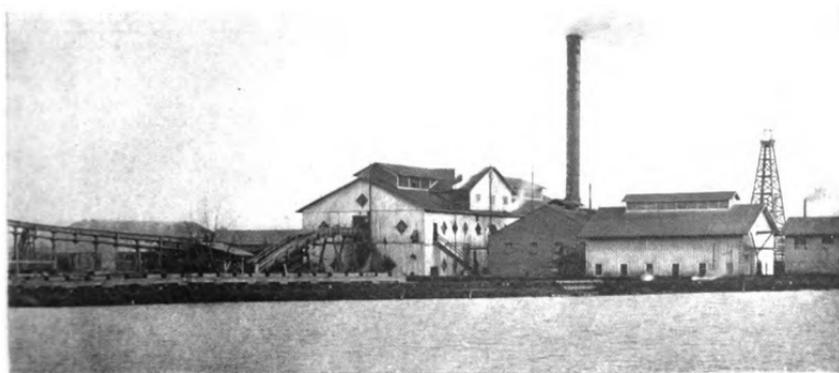
THE CRUCIBLE HALL OF FAME



MR. ARCHIE COTIE.

Here is a man with the keen eye, the skilled hand and the clear brain, which are the indispensable equipment of the good Filer. He appears in the photograph above, on the right, where he stands beside one of the big double-cutting bands used in the mill of the Foster Lumber Company, with which concern he is associated.

Mr. Cotie is proud of the Filing Room and its machinery equipment, of which he has charge, and spares no pains to keep it in first class order. The photograph shows that he is successful in this. Mr. Cotie is a fast friend of DIAMOND SAWS, for he has found that they give better results and do greater credit to his skill and experience than any other saw.



Mill of the Foster Lumber Co.

A PRIMEVAL FOREST AT A CITY'S GATE

(Continued from page 77.)

"I don't believe he ever went twenty-five miles from home. He didn't care about traveling. The world, he often declared, was too artificial; it wasn't sincere. His world was in that forest. He wandered through the tangled underbrush for hours and hours. I sometimes came upon him embracing a majestic oak or walnut and muttering to it. I actually believe he was making love to 'em."

Sanders & Egbert, of Goshen, Indiana, were the successful bidders for the timber. Their bid for the walnut and white oak alone was \$87,426.

"On this tract," said Mr. Egbert, "there are 700,000 feet of black walnut, 1,500,000 feet of white oak, 350,000 feet of white ash, and about 1,000,000 feet of elm, maple, and basswood."

It was an absolutely cash transaction.

"Were I talking from the lumberman's standpoint, I would dwell upon the fact that it is the largest tract of black walnut ever known in this country in one body. It is three miles long from the extreme western to the extreme eastern point.

"There are 1,100 walnut trees on the tract, 1,200 white oak, and 6,000 scattering. We will begin clearing this fall and it will take us approximately five years to remove the timber that belongs to us. Most of it will be shipped to Germany and other European countries in the log."

RANK CARELESSNESS

The young lawyer's plea was spoiled. He had brought the jury to tears by telling them the prisoner had stolen to get bread for his starving wife and children. I can prove my statement, he said, by the fact that my client did not take a pocketbook in the same room containing \$400. His plea was so eloquent that even the man he was defending was reduced almost to hysteria. As a fitting climax he turned and said; "Now, William Johnson, tell the jury why you weep?" And Bill, sobbing convulsively, said: "How in h— did I ever come to miss that \$400?"—*Ex.*

A NARROW ESCAPE

It was a Tennessee minister who had before him a six-months probationer, whom he was questioning for admission to all privileges of the church.

"Now, Zeke," he said, "you know you must live a Christian life. Have you stolen any chickens during the last six months?"

"No sah, no sah," said Zeke fervently. "Ah ain't done stole no chickens."

"Nor turkeys nor pigs?"

"I am glad to hear it," said the leader, "and I hope you will continue in this way."

Zeke was very quiet on his way home. Then he said to his wife in a cautious undertone: "Golly, I'd suah been er lost niggah ef he'd said 'ducks'." —*St. Louis Lumberman.*

HAS FOUND QUICK GROWING WALNUT TREE

It is reported that Luther Burbank, the California "plant wizard," has developed a variety of walnut tree that will prove very valuable to lumbermen. Black walnut has become quite scarce and Mr. Burbank has been experimenting with specimens of this tree with a view to improving the strain. The result is said to be that he has developed a type that in seventeen years will attain a height of 80 feet and a circumference of 80 inches, compared to the old walnut, which took twenty years to become 25 feet high and 18 inches in circumference. The wood of the new Burbank walnut is said to be somewhat lighter in color than the old black walnut, but of a very fine texture and grain.—*Southern Lumberman.*



80 The Stone Age.—*Judge.*

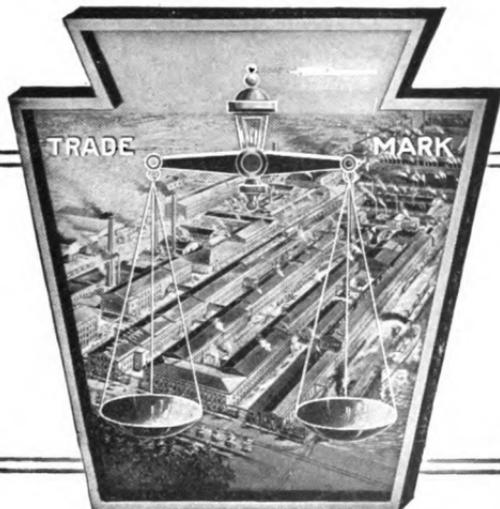
THE DISSTON CRUCIBLE

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TABLE OF CONTENTS

	PAGE		PAGE
INTERIOR OF COLISEUM <i>(Frontispiece)</i>		THE JAMES H. DYKEMAN BOX FACTORY	89
EDITORIAL CHAT	83	ATHLETIC SPORTS OF THE ANCIENTS	92
THE FILE	84	HALL OF FAME	95
THE DISSTON ATHLETIC ASSOCIATION	87	MR. GEORGE R. RUFFIN	96



This Magazine is Published for the Advancement of the Interests of Millmen by

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INTERIOR OF COLISEUM, ROME

Another view of which appears on this month's cover. Here were held the Athletic Contests and Spectacles of the Ancient Romans.

—See page 92

THE DISSTON CRUCIBLE

A MAGAZINE FOR THE MILLMAN

VOL. III.

JULY 15, 1914

NO. 6

EDITORIAL CHAT

HEALTH AND THE EMPLOYEE.

A HEALTHY worker is generally a happy worker—consequently an efficient worker. Health is the first essential for success in any calling—whether it be brain work or muscular work. There is an old Latin saying—“*Mens sana in corpore sano*”—a sound mind in a sound body. It is a good motto for any one to tack up over his work-bench. If the body and mind are sound and healthy there is no limit to the possessor's capacity for successful endeavor.

To maintain both mind and body in the best of condition, to keep the eye clear, the muscles ready for quick response, we need a certain amount of play. We all have within us a whole lot of the child's instinct to romp around—and it is a good, normal, healthy instinct, too.

A brisk game of any sort, out in the open air, makes one feel like a young colt turned out to pasture. One wants to kick up his heels and gallop around.

To give this instinct free play is to take the first important step toward securing that sturdy health of body and elasticity of mind without which we are but machines, capable of only a limited field of action.

It is the duty of every man to guard his health as one of his priceless possessions. It is the foundation of his happiness, of his efficiency in the world's work.

The Disston Athletic Association, of which you will read in this issue, is one of the many ways in which we carry to practical ends our belief in the principle of conserving our co-worker's health.

THE FILE

ITS HISTORY AND MAKING

PART FOURTEEN

A FILE used for general machine shop work, but not very often called for is the Equaling File. This is made along the same lines as the Flat File and is Blunt in form, and

the "cut" is usually Bastard, Second Cut, and Smooth Cut.

The Pillar File, is a file much like the Hand Flat File in section, but narrower. Reference to the sections, or forms, of files in Part Eleven will explain the difference much more clearly than it could be written. While Tapered, the taper is very slight. It is used in machine shops on narrow work such as slotting, or cutting grooves for cotters, and keys or wedges.

There are two other files made especially for this work, but for which there is not such a strong demand. These are the Slotting File, which is a Blunt File, but usually slightly bellied, that is, with a curvature which runs from the point to the tang, and the Taper Cotter File, a flat file which tapers to a point and is cut on the sides and edges.

The Arch File is flat in form, but bellied on the edges, tapering at each end. It is used on work in machine shops where this curvature of the edges is desirable.

The Warding File is a very thin file from four to fourteen inches in length, and is used in slotting work by both jewelers and machinists, but especially by locksmiths for putting the slots or ward notches in keys.

A sort of connecting link between single and double-cut files is the Planer Knife File. While it is sometimes made double-cut on both sides, in its regular form each side is half single-cut and half double-cut. This file is for sharpening planer knife blades while on the machine. This is a quicker and easier job than taking the blades out and grinding them.

A file of somewhat peculiar form is the Oval Tumbler. This is used principally for die work.



Equaling File

Pillar File

Slotting File, Bellied, Rough

Slotting File, Smooth Cut

Taper Cotter File

THE DISSTON CRUCIBLE



With it a round hole can be worked into an oval shape.

The Cross File, sometimes called the "Shad Belly" is a file which is very often used in place of the Half-Round File, on the same sort of work. In this file both sides are rounded out, but one side, which resembles the half-round file, is higher than the other. This gives a varying curvature on the same file.

The Lock File has a very peculiar

cut, which will be understood better by referring to the illustration, than through any printed description. The Lock File is used for slotting work, mainly in connection with locks and key work.

In the filing of brass and other soft metals it is not possible to obtain satisfactory results from the files in general use. In view of this there are a couple of files with teeth especially arranged for cutting brass and other

THE DISSTON CRUCIBLE

soft metals. These are a Half Round File and the Hand Bastard File.

The Half Round File is suited for use on solder, and all kinds of soft metals. The teeth are so arranged that they will cut fast and clear easily.

The Hand Bastard File, for use principally on brass, has very deep teeth with open bottoms. This makes it a fast filer, and an easy cleaner because the filings drop out. The over-cut is put on at a longer angle than usual,

while the up-cut is almost straight across.

A special file for machine shop and foundry use is the Aluminum File, designed particularly for filing aluminum patterns. This comes in both the flat and half-round forms.

This completes the list of files intended for machine shop use, and in the next installment will be taken up the second group coming under the general heading of files, namely, Rasps.

(To be continued)



Lock File



Half Round File



Hand Bastard File, for Brass

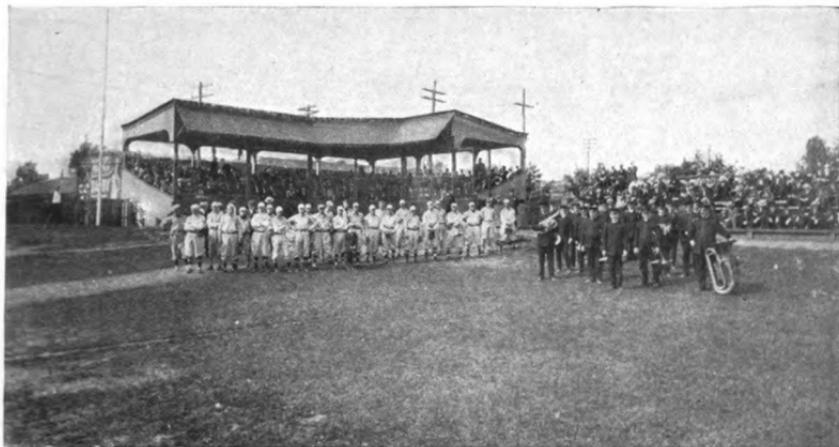


Flat Aluminum File



Half Round Aluminum File

THE DISSTON CRUCIBLE



Ball players and band before the grand stand at the opening of the Disston athletic field.

THE DISSTON ATHLETIC ASSOCIATION

THE reorganization of the Athletic Association connected with the works of HENRY DISSTON & SONS, is now an accomplished fact.

The idea has been to have a larger organization; its object being to encourage increased interest in various sports, and give the employees an opportunity for recreation, as well as to establish a better feeling between employer and employee.

The old Tacony Ball Park and Athletic Grounds was decided on as the

permanent athletic field, and alterations and improvements were made on an extensive scale. The grand stand was remodeled and roofed over, and the dressing rooms and bleachers torn out and replaced according to the most improved methods. No expense was spared to make the new athletic field one of the most complete recreation centers in the country.

In addition to baseball, other sports will be encouraged, such as foot ball, basket ball, running, jumping, etc.



View of the Disston athletic field.

THE DISSTON CRUCIBLE



The winning base-ball team.

All employees of the firm, both male and female, are eligible for membership. A Junior Branch has also been organized for the boys.

The official opening of the season, and the dedication of the new grounds took place on Saturday, May 16.

Extensive preparations were made to celebrate the event in a fitting manner and these plans were carried to successful completion.

Especial interest was felt in this opening as it was the first public game played on behalf of the new association and marked its real beginning.

The celebration opened with an elaborate street parade. This parade was led by automobiles carrying the officials of the association and the opposing teams. Behind the automobiles came the band of the State Fencibles, which was followed by the Marshal and his six aides. These in turn were followed by members of the

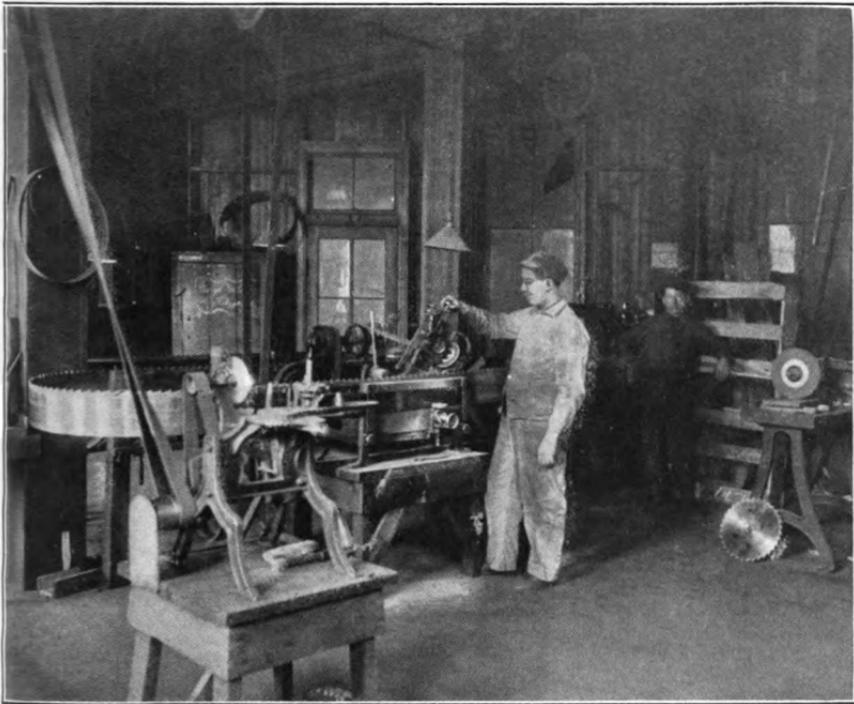
Association. The parade proceeded through the principal streets of the town of Tacony, finally arriving at the gates of the grounds. Preceded by the band, the players then marched around the grounds, drawing up in front of the grand stand to be photographed.

To the inspiring strains of the "Star Spangled Banner," the American Flag was raised to the top of the new steel flag pole, 80 feet in height, and the grounds were officially opened. One of the prominent citizens of Tacony then made an introductory speech which was enthusiastically received by the members of the association, the players, and a large crowd of spectators.

The first ball was thrown out by Mr. S. Horace Disston, Chairman of the Board of Governors of the Athletic Association, and the game was called. The opposing teams were the Wissin-

(Continued on page 91)

THE DISSTON CRUCIBLE



Filing Room of the James H. Dykeman Box Factory.

THE JAMES H. DYKEMAN BOX FACTORY.

The following letter was received a few days ago from Mr. G. W. Dyer, saw filer for the James H. Dykeman box factory, Brooklyn, N. Y.

Messrs. Henry Disston & Sons.

Gentlemen:—

Under separate cover I am sending you a piece which I have cut from one of your band-saws that met with an accident. The blade originally was six inches wide by nineteen gauge, one and one-half inch space, three-eighths of an inch deep and was worn down to three inches at the time the accident occurred.

The saw was being run on our band resaw machine and we were making a ten-inch cut on spruce about one hundred feet per minute; when owing to an accident with the machine, the saw became jammed and, on account of the tremendous strain, there was nothing for it but that the saw must be torn apart and upon looking at the end, as you will see from the piece sent you, it must have taken a tremen-

dous amount of power to tear the saw apart as it seemed to fairly cling together, the quality of steel having resisting qualities such as I have never seen before.

In place of breaking off short across once it started going, as has been the case in some other make of saws, it has made a very ragged break and shows a clear, clean grade of steel and for a saw that held its tension and cutting edge the way this one did, I was surprised that under this strain it should show such durability, and the break to my mind proved the perfect combination of toughness and flexibility possessed by the steel of which these band saws were manufactured.

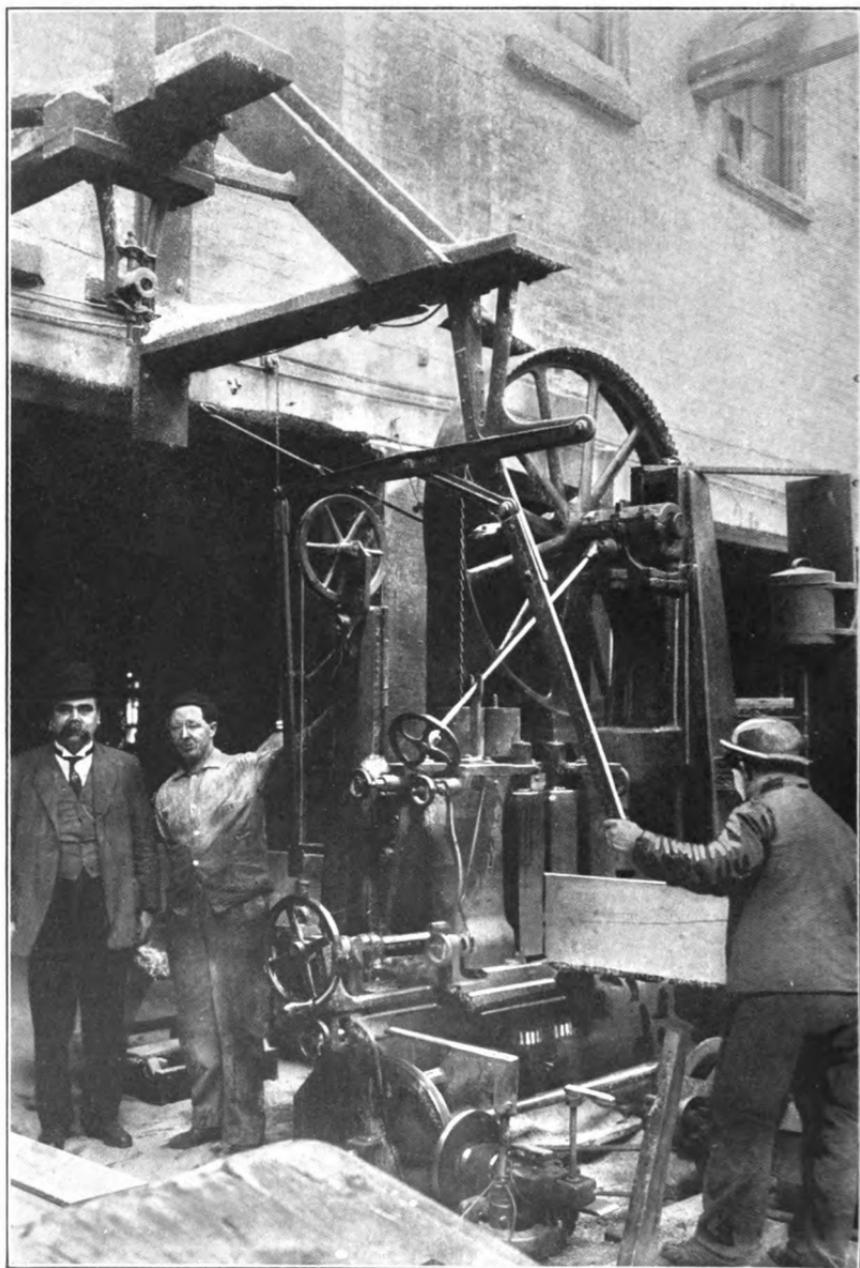
We are using all DISSTON BAND SAWS at our mill and from the results we are securing we are not likely to make a change. Yours truly,

GUY W. DYER.

Saw-Filer for the James H. Dykeman Box Factory, 280 Nevins St., Brooklyn.

It is very gratifying to hear from the users of our band saws that they are

THE DISSTON CRUCIBLE



Mr. J. C. Donovan, Supt., Mr. G. W. Dyer, Saw Filer and Mr. P. Rust, Sawyer, standing by the Band Resaw of the J. H. Dykeman Box Factory, Brooklyn, N. Y.

THE DISSTON CRUCIBLE

meeting with success and to know of the achievements that are accomplished and, as in this case, it is often, when as the result of an accident or other cause, the saws are subjected to what would be considered an annihilating strain, that the care and experience which is part of the making of the DISSTON Saw stands out most clearly.

In connection with this letter we will mention that the firm of James H. Dykeman is one of the pioneer box making concerns in this section, with a record of which they can be justly proud. Mr. James H. Dykeman was a carpenter by trade and established himself in the box business in 1877, that is, thirty-seven years ago, in partnership with a Mr. Elsworth and Mr. Van Husen, whom he later bought out. The first plant was located at 501 to 511 Union Street. Seven years later it was moved to John Street, Brooklyn, and from there they moved, five years after, to their present quarters, where they have been for twenty-five years. The changes in location were made necessary by the rapid growth of the business and with the usual farsightedness of the management they purchased a whole square block for an amount which would buy very little land in that section at the present time. To-day the firm is one of the leading box makers in this vicinity and their plant is well-equipped with modern machinery.

Under the supervision of Mr. J. C. Donovan, who has been with the firm for twenty-eight years, anyone visiting the plant, not familiar with the box business, would imagine it was the one business without a worry, but in looking deeper, it is found that it has taken years of effort on the part of Mr. Donovan to get the plant to this point of efficiency. Two large buildings occupy the whole block at Union, Nevins and Sackett Streets, the fourth side of the property facing the canal, making it possible to bring lumber to the mill very economically. The yards are well kept and at the present time there is about 8,000,000 feet of lumber, some of it piled to a height of 65 feet. The power is furnished by a 500 H. P. Corliss Engine, and at present a second engine of 1,000 H.P. is in course of erection, and the fly wheel which has

just been set in position is 20 feet in diameter with four feet face.

Throughout this shop, everything is well arranged. We print a photograph showing band resaw which is the machine referred to in Mr. Dyer's letter. Reading from left to right shows Mr. J. C. Donovan, Supt., Mr. G. W. Dyer, Saw-Filer, and Mr. P. Rush, sawyer. Another photograph shows the Filing Room and in the background is seen the sawyer resting on a late arrival from the DISSTON factory—a new eight inch band for the resaw. The Filing Room has a very complete equipment and this combined with the experience of Mr. Dyer, makes a very successful department, appreciated by everyone connected with the plant.

Among the old employes of this concern, we would mention Mr. J. V. Healy, who is connected with the office and has been with them for thirty-two years.

Since the death of Mr. Dykeman, the business has been carried on by Mr. Thomas F. Fife, Manager, and Mr. J. C. Donovan, Supt., and at the present rate of growth, it will be necessary in the near future for them to again increase their capacity.

THE DISSTON ATHLETIC ASSOCIATION

(Continued from page 88)

oming Field Club and the Disston Team.

The team which represented HENRY DISSTON & SONS was selected from the members of fourteen teams, representing various departments in the Works, which had been playing elimination games during the early part of the season. This meant that the members of the regular team were exceptionally fine players, and as the other team has an extensive reputation for good ball playing, it will be seen that from the start the play was fast and exciting. The DISSTON Team won with a score of five to two.

Opening under such auspicious circumstances the DISSTON Athletic Association promises to be a permanent and prosperous organization which will add further glory to the already famous DISSTON name.

ATHLETIC SPORTS OF THE ANCIENTS

TO trace the origin of athletic sports it would be necessary to go back to the activities of the earliest human inhabitants, perhaps even beyond the point where written or pictorial history begins. For the love of sport, the desire to excel in feats of strength, agility and endurance is ingrained in human nature and probably existed

seem to have been the first expressions of the universal desire for athletic contests, games or sports of this character being found among most primitive races.

The hieroglyphics of the Babylonians and Egyptians illustrate various games played with balls, but there are no conclusive records which indicate the exact character of their athletic sports. It seems assured, however, that athletics were indulged in to more or less degree in ancient Egypt. Some historians maintain that the Greeks derived their early forms of games from the Egyptians.

Regardless of whence Greek sports had their origin, the fact remains that this race instituted the greatest system of games and athletic contests that the world has ever seen. One thousand years before the Christian Era, the athletes of ancient Greece engaged in races and weight throwing events which even now form a part of the modern athletic meet. Such was the national, and even world wide scope and importance of the Greek Olympian games and relatively so far more important than the minor contests of other early civilization that any description of ancient sports is of necessity almost entirely an account of the sports practiced by the Greeks.

Originally the Greek athletic contests formed part of a religious observance. The earliest recorded games were those held at the funeral of Patroclus. Other occasions for the celebration of games were as thank offerings for victories gained or calamities averted, or in expiation of some crime. Each of the great contests was held at some sacred shrine or in honor of some deity or mythical hero.



Competitors entrance to the Stadium, Olympia, where for 1000 years the games were celebrated.

among the earliest prehistoric men. What their games were can never definitely be known. They may have consisted in running, leaping, perhaps hurling the war-club, or playing some sort of a game of ball. In fact, the earliest records and remains show that some form of ball game existed as far back as any records can be traced. This and the other sports mentioned,

THE DISSTON CRUCIBLE

The games described in the Iliad and Odyssey are of interest as showing at what an early date the distinctive forms of Greek athletics—putting the weight, wrestling, boxing, foot and chariot races—were determined.

Of the various periodic games held in Greece, the Olympian were the oldest. To the last they remained the most celebrated.

Olympia was a naturally inclosed spot in the plain of Elis. It was bounded on the north by the rocky heights of Cronion and on the south and west by the beautiful Alphaeus River and one of its tributaries. No more beautiful spot could be imagined. Here was the grove of Altis, in which were ranged statues of the victorious athletes. Near at hand was the temple of Olympian Zeus with the great gold and ivory statue of the god, executed by Pheidias. There is a Greek legend that it was on this spot that Hercules, after he had conquered Elis, and slain its king, consecrated a temenos and instituted games in honor of his victory.

Another and later legend exists to the effect that when Greece was ravaged by pestilence and torn by internal wars, Iphitus inquired of the oracle for help and was bidden to restore the ancient games which had been neglected.

In the time of Pausanias there was suspended in the temple of Hera at Olympia a bronze tablet bearing, in addition to the regulations of the games, the names of Iphitus and Lycurgus. This fact would seem to prove that Iphitus was without doubt responsible for giving the Olympian games much of their early prominence and importance.

Both legend and fragments of historical record lead to the conclusion that the famous Olympian games were instituted by Eleians and Pisans, tribes of the southern peninsula of Greece. The joining of Sparta in their observance did much to add to their celebrity.

In 776 B. C. the Eleians engraved the name of Coroebus as winner of the foot-race and from then on the records of succeeding Olympian victors have been preserved. Every fourth year these games were held, coming eventually to the importance of a national festival. For the first 50 years, the names inscribed were mostly those of Eleians or their neighbors, but as time passed, the victories were recorded of Corinthians, Megareans, and even Athenians and athletes from beyond the Peloponnesus. What was originally only a local observance became in time the great high festival of Greece to which came competitors and their enthusiastic followers from every part of the country and even from the outlying colonies of Cyrene and Marseilles.

The Olympic games continued uninterrupted for nearly 12 centuries, until they were abolished by decree of the Christian Emperor Theodosius in the tenth year of his reign, 388 A. D.



Portrait of an Athlete.

Olympia in the days when the great athletic contests were in their prime, must have been a wonderful sight. Heralds had proclaimed throughout Greece the "Truce of God."

No loyal Greek would think of bearing arms at this time, even though an enemy were at their very gates. The Olympian games took first place in the hearts and minds of all. Among the olive groves stood the white tents of the ten judges, chosen one from each of the tribes of Elis. They had been here ten months receiving instructions in their duties.

THE DISSTON CRUCIBLE

Before engaging in competition each athlete was required to complete ten months of training in the gymnasium. This they were obliged to swear to. They also had to prove by witnesses that they were of pure Greek descent and



The Discus Thrower

had no stain upon their civic or religious characters.

Women were not permitted to attend the games. They were allowed to compete as drivers of chariots, but with the exception of the priestesses of Demeter, were entirely barred from witnessing the contests.

After the athletes had duly qualified, they proceeded to the stadium where they stripped to the skin and anointed themselves. A herald proclaimed—"Let the runners put their feet to the line"—and called upon the spectators to challenge any disqualified by blood or character.

From the earliest Olympiads, the character of the contests changed with the passage of time. Originally all was concluded in one day. After the 77th Olympiad, the feast was extended to five days. The foot-race, varying in distance from 200 to 400 yards was the first and principal contest. In fact, for the first 13 Olympiads it was the only event. Later other foot-races of distances up to two and two-thirds miles were introduced. Wrestling was one of the later additions. In this event the contestants were anointed with oil and then rubbed with sand to permit a better hold. It can well be imagined that considerable skin was scraped off in the clinches. The third throw decided the match.

One of the later events was the broad jump. Here the men used weights which they threw behind them when they "took off." The record jump stands at 55 feet and was made by Phayallus of Croton. We can hardly believe

this, however, even if the jump was made with a spring-board as is held by some historians.

Boxing was engaged in under much the same rules as we have to-day. Instead of gloves, though, the Greeks used the *Caestus* which consisted of leather thongs bound round the fists and wrists. In later times the Romans added lead or iron weights or studs which made boxing often a fatal contest. The use of ear-guards and allusions to broken ears instead of noses leads us to suppose that the Greeks did not hit straight from the shoulder, but fought windmill fashion, frequently landing "hay-makers" as they are sometimes called to-day.

The *Pancratium* was a combination of both boxing and wrestling, in which it was not permitted to use the *Caestus* or even the clinched fist.

In the 23rd Olympiad, chariot racing was introduced. The race course was approximately 1600x400 feet. Down the middle was a bank of earth, the chariots having to make a short turn at either end of this to complete the course. Clever driving was essential to prevent serious accidents at these turns. Even the horses feared them and would shy as they approached the turning posts. Horse racing is called the sport of kings. Even in the early days of the Olympic contests, the chariot race was the favorite of kings and tyrants. Indeed, the heavy financial outlay limited the sport to persons of



The Boxer

wealth. Among the list of victors in these events appear the names of Cylon, the would-be tyrant of Athens, Pausanius the Spartan king, Archelaus of Macedon and many others.

(Continued on page 96)

THE CRUCIBLE HALL OF FAME



D. W. BARTRAN

If there is anything of magic in making saws do their work day in and day out without a hitch of any kind, then Mr. D. W. Bartran, whose photograph we are gratified to add to our Hall of Fame, must be a past master of the art. For saw troubles just can't exist when Mr. Bartran is around. They say of him that he can walk into a mill where the saws are giving difficulty, smile, do a little work, and presto—everything goes on smoothly again. Some may call it luck, or knack, but it is a safe conjecture that there is a busy brain and a vast store of ripe experience with saws and their tricks behind those keen eyes.

Thirty years ago, Mr. Bartran came from Canada. Since then he has held down some of the largest jobs in the United States, always staying several years in each position that he held. His marked ability, good nature and happy smile endear him to his employers and associates wherever he goes.

At one time the C. T. Patterson Co., New Orleans Branch of HENRY DISSON & SONS, was fortunate in having his services as a special man. In this work Mr. Bartran's gifts showed to rare advantage, for working with the

filer they could together solve any problem when the saws were not giving satisfaction.

After a year and a half's association with the New Orleans Office, Mr. Bartran accepted a position with the Wausau Southern Lumber Co. at Laurel, Mississippi, where he is at present employed as head filer. His long experience, and his remarkable ability in keeping saws up to their work stand him in good stead here, for the Wausau Southern is a strong mill of large capacity and does not favor its saws. They have to be put up to stand as much feed as any yellow pine mill in in the South. Two Bands and a Gang are kept busy day and night.

During Mr. Bartran's connection with the Wausau Company, a period of about a year and a half, he has used only twelve band saws, all of which were DISSON, and are still in service. In this time he has had only one crack. Seven of the saws have the original braze in them. This speaks well for Mr. Bartran's care of the saws, and for the saws themselves. To use Mr. Bartran's own words, in speaking of his success with DISSON SAWS—"I consider this a great record—wearing twelve band saws from 13 inches to 10 inches with but one crack. The steel, the temper and the workmanship in the saws that will do that must be perfect."

THE DISSTON CRUCIBLE

WHO'S WHO IN THE SAW WORLD

ATHLETIC SPORTS OF THE ANCIENTS

(Continued from page 94)



MR. GEORGE R. RUFFIN

A GOOD many men got their start in life back in "49." Mr Ruffin got a very early start, for it was in that year that he was born. The scene of Mr. Ruffin's birth was Albermarle County, Virginia. He is a descendant of the good old, hardy stock which settled at Jamestown, Virginia, in 1620.

After spending his early life in Virginia, Mr. Ruffin fell in with the trend of the times and moved west in 1873, locating at St. Louis, Missouri. After spending a number of years in that city, he again became possessed of a desire for change and moved into Texas. He has been a resident of that state ever since which speaks pretty well for Texas. She at least is to be congratulated upon having a man of Mr. Ruffin's calibre as a citizen.

Mr. Ruffin has been a mill supply salesman for the last twenty years, being connected with the C. T. Patterson Company, our New Orleans branch. He is an enthusiastic and successful distributor of Disston Saws, and as he is well liked by his customers his orders have a tendency to be both numerous and large.

It is said that wherever he goes he receives a hearty welcome. He is the sort of man who is brought into the family circle, and urged to become a guest for the night. He enjoys the complete confidence of all who know him for they have learned that any statement he makes he believes to be absolutely true.

Mr. Ruffin is a big man in every way—big mentally, big physically, and with a heart and voice in keeping with the rest.

Horse back racing dates from the 33rd Olympiad. At first the prizes in the various contests were of some intrinsic value, but after the 6th Olympiad the only prize in each event was a garland of wild olive, cut with a golden sickle from the sacred olive tree which Hercules, so the myth runs, brought from the land of the Hyperboreans. These were the only official prizes, but the victorious athlete came in for many more substantial rewards. As he marched in the sacred revel to the temple of Zeus, his friends and admirers showered him with flowers and many costly gifts. If he was an Athenian he received, upon his return home 500 drachmae and free rations for life in the Prytaneum or public entertainment hall. If a Spartan, he had as his prerogative the post of honor in battle.

An Olympic victor was regarded as more than a hero. His return to his native city was a triumphal progress. He was loaded with gifts, honors and attentions. An instance is recorded where a breach was made in the city wall to admit an olive-crowned athlete, the regular road being considered too common for him. Poets sang his praises, and sculptors carved his statue for the state. An Olympian prize was the crown of human happiness.

There were other periodic festivals held in other parts of Greece, among which were the Pythian, Nemean and Isthmian games, where the contests were of a similar nature but of nothing like the national character of the Olympic games.

The Roman Ludi Publici, or public games, were, as in the case of the Greek observances, of a religious nature. But they included as well theatrical exhibitions and feasts. At the beginning of each civil year it was the duty of the consuls to vow to the gods games for the safety and preservation of the commonwealth. The taste for games and spectacles became a passion with the Romans. The Roman mob looked upon games as one of the necessities of life and was not content unless it could have them day after day.

Taking advantage of this popular tendency, many political adventurers built up their popularity by providing spectacles at their own expense.

While the Roman Games played an important part in the history and social life of the time, they lack interest as true athletic sports. They were shows—spectacles, often of a brutal and revolting character, rather than real contests of strength and endurance. Whereas in Greece, no man was ashamed to compete in the Olympic games, in Rome only hired performers entered the contests. The Roman patrician practiced gymnastics in the privacy of his own home, but would have considered himself disgraced to appear in public competition.

The finest athletic contests of all history were those of the Greeks held at Olympia. They exhibited the characteristics of sportsmanlike conduct at their best. They have always been regarded as models of what athletic events should be. Today many of our popular track and field events are practically the same as those held 1000 years ago in ancient Greece. The recent revival of the Olympic games and the giving to them of an international character, is a compliment to the athletic heroes of the past and a recognition of their prowess.

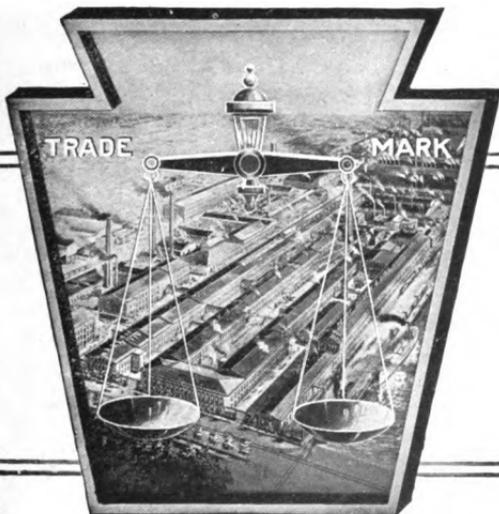
THE DISSTON CRUCIBLE

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TABLE OF CONTENTS

	PAGE		PAGE
PLANT OF TURTLE LAKE LUMBER Co. (<i>Frontispiece</i>)		THE TURTLE LAKE LUMBER Co.	123
EDITORIAL CHAT	115	GETTING THE MOST OUT OF YOUR SAWS	124
A LUMBERMAN'S LIFE STORY	116	MAKING GOOD	125
THE COLLETON CYPRESS Co.	120-121	JIM	126
THE MAKING OF AN AD.	122	HALL OF FAME	127
		E. V. SBISA	128



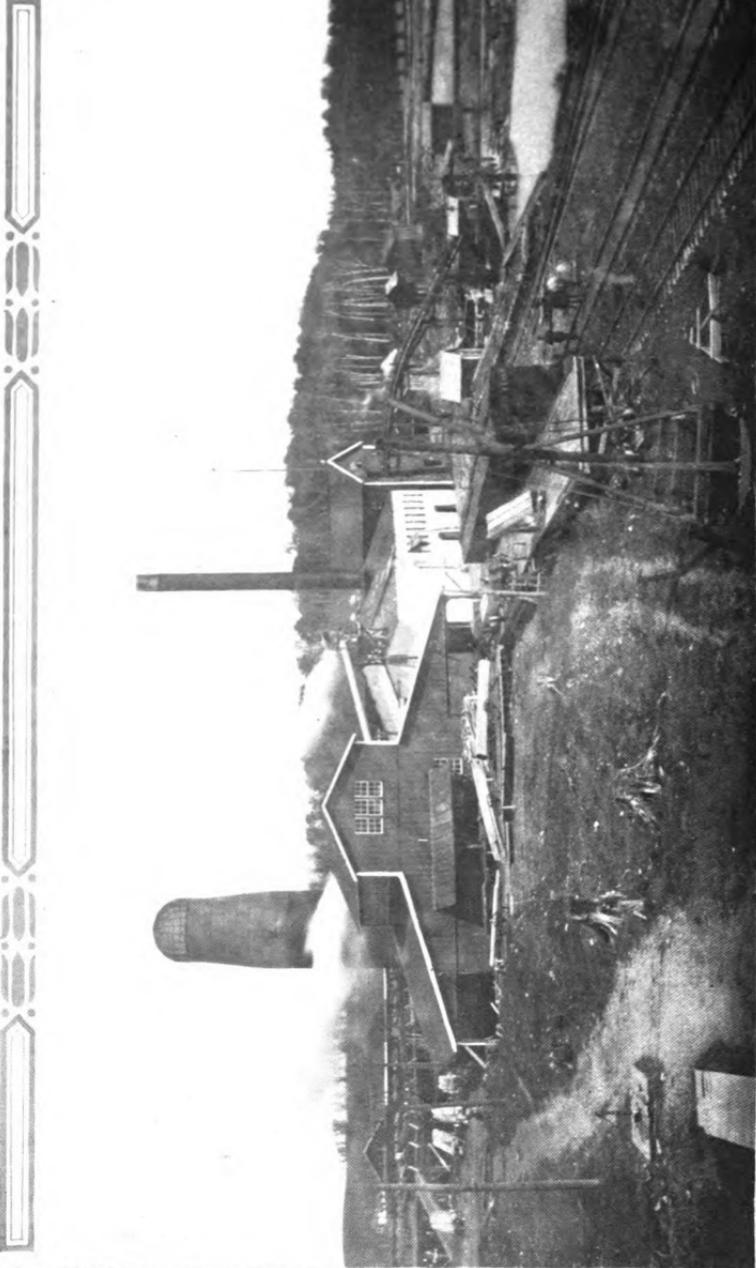
This Magazine is Published for the Advancement of the Interests of Millmen by

HENRY DISSTON & SONS
INCORPORATED

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PHILADELPHIA

BRANCH HOUSES :

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PLANT OF THE TURTLE LAKE LUMBER COMPANY

—See page 123



THE DISSTON CRUCIBLE

A MAGAZINE FOR THE MILLMAN

VOL. III.

SEPTEMBER 15, 1914

NO. 8

EDITORIAL CHAT

CONCENTRATION

TO have the ability to concentrate ones whole mind and energies upon the accomplishment of the task in hand is to be far on the way toward its successful completion. It has long been acknowledged that persistent thought, concentrated upon one subject, brings out new aspects and develops its hidden possibilities.

The inventor is a good example of a man who concentrates his efforts. He becomes so wrapped up in the study of his problem that he does not mark the passage of time. Even food and sleep are forgotten in the effort he is making to discover some hidden truth, to give to the world some new piece of machinery which will revolutionize the manufacturing methods of the times. Here is true concentration. Every bit of the man's energy of mind and body is focused upon his cherished project.

Great inventors, such as Edison, with his incandescent lamp and many other inventions, or Marconi with his mastery of wireless electric waves, possess the power of concentration to a remarkable degree.

Yet the ability to center thoughts and efforts upon a task is not theirs alone. You have seen your neighbor in the shop or in the mill with his eyes fixed intently upon his work—arms and hands moving swiftly, intelligently, without lost motion or needless exertion. He is a man who concentrates upon what he is doing. It is safe to say that he is making a success of his job as well.

Again, on the base-ball field, you have seen the pitcher of the home team face the last batter, with the score tied. He is thinking of nothing but: "I have got to fan that man." And if he is a good pitcher he does it. He has the ability to concentrate.

This matter of concentration is strikingly illustrated in the successful growth of the great industry founded by HENRY DISSTON in 1840. There was a man whose love for and pride in his work stood out in the words which he branded on his famous hand saw. "For Beauty, Finish and Utility this Saw Cannot Be Excelled." No man whose very existence was not centered in his work would have written those words.

It is the same capable concentration on the making of good saws and tools by those who carried on HENRY DISSTON's masterly work which has enhanced and broadened the success won by that early pioneer in American saw-making.

A LUMBERMAN'S LIFE STORY

From Tally Boy to Lumber Baron

By C. P. McDONALD

(This is the life story of one of Chicago's most successful lumber dealers, whose identity, for obvious reasons, must remain anonymous. How he rose from a humble beginning to a position of influence and power in the lumber world is best told in his own words. It is chiefly for this reason that his name is withheld from publication).

"FORTY-EIGHT, sixteen, five short!"

"Forty-eight common, sixteen cull, five short!"

"Did you get it?"

For several years these and similar expressions were my daily diet. They are not eupheneous phrases, perhaps, but to me they never ceased being sweetest music.

I first heard them 'way back in the early '70's. I still hear them today. Often I catch myself humdrumming the shout, "Forty-eight common, sixteen cull, five short!" my fingers tapping in rhythmic unison with the words.

I still can hear the guttural voice of the chief inspector as each plank, batten, and deal came up from the hold of the vessel in which it was stored. I can hear the faint scratch of my pencil flying across the smooth surface of my tally sheet, recording grades of lumber and dimensions as the figures and names floated to me from the deck of the boat.

"Did you get it?" The question was bawled at me every once in so often. The inspector, as the timbers sometimes crashed about him, failed to catch my sharply ejaculated "Check!" At other times I answered with a hardly perceptible mutter, mechanically jotting down dimensions, my mind trying to penetrate behind the curtain of futurity. For from the first moment after I had become a tally boy my dreams ever were of the time when I should become a lumber dealer and direct the destinies of my own big plant.

All boys indulge in dreams. Without them the world would be a sorry affair, devoid of the one big thing that

makes life worth the living. The trouble is the dreams of many young men never are realized. This failure of realization usually is charged to adverse luck. I don't believe luck ever figures in such things. The young failures, to my way of thinking, never chirk up because they have confused dreams with moods. They do not work and apply themselves to gaining the ultimate goal. They wait for a lucky turn of the wheel and do not strive to make their dreams realities.

My dreams were of the material kind. I meant to cash in on them some day. That perhaps is the reason why I did not take my place in the rank and file of the business failures. I believed myself made of sterner stuff. I did not, of course, set myself up as a paragon of wisdom. There were a lot of boys working around me who, I frankly admit, were wiser than I, whose educations were superior, who possessed greater strength. But their greater strength was only of the physical caliber. My strength was concentrated on purpose, theirs on the accomplishments of acrobatic feats and muscular achievements. While they developed their sinews and their brawn I assimilated a valuable knowledge of the lumber business. There is a vast difference.

For instance, I'm the head of my own concern right now, have a big lumber business and enough money to keep me from worrying. One of the boys who started out with me is a motorman in Omaha. Another is clerking in the freight department of a railroad. A third wrote me a year or so ago that he had become a business nomad—working here today, there tomorrow, making barely enough to keep himself abreast of the tide. So you will see from this illustration that it isn't the smartest boy who picks the plums, but the one who absorbs the principles of his work and puts them into practical circulation.

Father was a carpenter—and a good one, too—when he brought his family to Chicago from County Mayo, Ireland.

THE DISSTON CRUCIBLE

While father worked I was permitted to attend the old Kinzie school. When he didn't I helped out. During the summer I worked as a tally boy for a big lumber concern. I got \$4.00 a week, which was pretty good money in those days.

My duties as tally boy involved going on a boatload of lumber. I sat on a box in a convenient spot and marked down the feet and grades that were called out to me by the inspectors who were put on the cargo for the purpose of determining the amount of feet and the quality of the lumber in the cargo.

In the early days of the lumber industry in Chicago this lumber was shipped in by vessel to the wholesale market in Franklin and South Water streets, and the dealers used to go out to the market in the morning and look over the vessel loads of lumber that came in.

They then would examine the different cargoes and pick out what lumber they thought would suit their trade. The price of lumber was fixed by supply and demand, and if there was a big field of lumber in the dealers got it as cheaply as possible. We had to demonstrate the quality and grades of each cargo before we could make a sale. To do that a man had to have a thorough knowledge of the grades of lumber in the cargo, and he also had to know the requirements of the dealers. To be a successful salesman a man had to familiarize himself with the trade of his dealers and anticipate their wants in many cases. Some dealers bought different grades for their trade than the others did. To get his price the salesman had to have knowledge of the trade of the various dealers. But I anticipate.

In my position of tally boy I was required to figure up the tally sheets of each cargo of lumber and make a report to the buyer and seller of the amount and grades of lumber in the cargo. In this way, of course, I became efficient. The inspectors took an interest in me because they approved of my earnestness of purpose. They did all they possibly could to acquaint me with the different grades of lumber.

I had been a tally boy for several years when I learned that another lumber firm required a new bookkeeper.

My duties as tally boy had qualified me, and I applied for the job and got it. I got a substantial increase in my pay envelope, I might add incidentally, but I don't believe the exact figures would add any weight to this life romance of mine.

As bookkeeper I learned a lot more about the lumber business. I entered into the spirit of the labor because my youthful dreams then were as strong upon me as ever they were. As a tally boy I had determined upon becoming my own boss. As a bookkeeper this determination still gripped me.

Well, when I had wrestled with the company's ledgers for a few years, I was promoted to the position of general cashier. In this position I got much inside information that was to stand me in good stead when I ultimately embarked for myself.

A larger lumber company offered inducements one day. This company wanted a competent bookkeeper who would understudy the sales manager. They owned large mills in Michigan and shipped their lumber by car through the different states. I qualified, became sales manager, and was put in charge of all the selling.

Several months later the firm sold out and I went with another lumber company—a Michigan concern—as their sales manager on the Chicago lumber market. This firm sold all their lumber by cargo to the yards and dealers in Chicago. In those days we used to freight lumber by vessel for \$1.25 a thousand feet. Today the freight is from \$7.00 to \$8.00 a thousand from the south and \$15.00 to \$16.00 a thousand from the coast. That will explain, in a general way, why the price of lumber has advanced.

My business took me through the lumber camps each year, where I was supposed to look over the log cutting and familiarize myself with the quality of the lumber that would be produced from those logs the ensuing year. Here I got my real insight into the lumber game. I found tree felling an engrossing study. I learned, for instance, that when a tree is felled too young the proportionate amount of sapwood is softer than in a tree that has been permitted to mature. On the other hand, the wood of an old tree loses consider-

THE DISSTON CRUCIBLE

able of its toughness. Full grown trees contain heartwood in its greatest proportion, the sapwood remaining firm and elastic. Lumber cut from such trees is strong, tough and durable.

When Norway fir and northern pine trees reach seventy years they are matured. This maturity sometimes takes longer. But when such trees reach the venerable age of seventy and from then on up to one hundred years, they are considered worth while. Between fifty and one hundred years is the best time to fell the larch, the elm, and the ash. The oak should not be cut before it is ninety or one hundred years old.

The sap of trees is at rest during the midsummer and midwinter. Therefore those are the best seasons for felling timber.

I learned all this from the gang foremen, rough, rugged, big-hearted men, who treat the hard and seamed side of life as a huge joke, who daily grin at the prospect of sudden death, and who never are so happy as when they carry their lives in their hands. They know lumber, however, as the astronomer knows his telescope, the physician his remedies, the jockey his steed.

I recall a long talk I had with Jerry Casey, a big Celt who had known my father as a boy in County Mayo. Jerry had been foreman of one of our Minnesota gangs for many years. He loved the business, the life, his acute lumber wisdom. He joyed to talk about either. He liked the way I mixed and it is to him that I owe much of the knowledge I acquired of the lumber business.

"Jim," said he one day, "if you're going to be a successful sales manager you've got to know lumber. I'm going to tell you some things you may or may not know. If you do know them, my angle may add to your wisdom. You ought to know what a balk is—a log sawed or hewed to a square section, varying from eleven to eighteen inches square in size. You ought to know what deals are—parallel sided bits of timber from two to four inches thick and about nine inches wide.

"Do you know what battens are? Well, they are somewhat like deals, only they're not more than seven inches wide. You'll get a lot of calls for ends.

They are bits of deals, planks, and battens under eight feet long.

"Beware of deals, Jim, bearing coarse rings. These rings are layers of wood which grow upon the tree annually. They bring about a coarse grained wood which isn't desirable for the best class of work. Reject such deals, Jim, as you would those with waney or naturally beveled edges. When these coarse rings are wide they indicate that the mother tree probably has matured in marshy ground, which ground has a tendency to mature a tree too quickly.

"I'll take you around a bit and show you just exactly what I'm trying to drive into your skull. Would you know when a tree is suffering from cup shake? No, I thought you wouldn't. Well, cup shake is where the interior of the tree splits naturally between a couple of annual rings. Severe weather will raise the very devil in trees, Jim, especially when the sap is running down. When the sap freezes, cup shake follows."

Jerry ran along in this vein by the hour. You couldn't stop him if you had wanted to, and I'm sure I didn't want to. Why I was learning more from this wise old Irishman in half an hour than I could have learned in a year under ordinary conditions. He explained other diseases of timber—or perhaps, I should designate them as defects. He told me about heart shake, upsets, doatiness, star shake and foxy timber. I owe the greater part of my success to Jerry Casey, gang foreman. And I might digress right here long enough to say that Jerry's kindness in instructing me wasn't over looked when I became my own boss. Right now Jerry is handling a big gang of lumberjacks in my big camp in Minnesota. He's getting what I mean should be the biggest salary a gang foreman ever got.

It was hard work saving my first thousand dollars. Every man who has made a success of himself will tell you that same thing. And there isn't a particle of fiction in the statement either. Few young men of the present generation, getting fabulous salaries in comparison with those the boys got in the early days of the lumber game, save much. If it's hard for them to

THE DISSTON CRUCIBLE

save, what must it have been for the tally boys and bookkeepers working for a pittance? It's not a hard proposition to solve.

In 1890 I had a long talk with my brother, also a lumberman on a small scale. He wasn't satisfied. He didn't want to work for other people all his life. Neither did I. He had a good working knowledge of the game; mine was a little more advanced, owing to my frequent visits to Jerry Casey's camp.

"It takes money," I told Patrick, my brother.

"Granted," he conceded. "We've got a thousand apiece. That's enough for a start. We're both known to the dealers and the trade. Our reputations are untarnished. We can raise what little additional money we need."

His argument prevailed. Truth to tell, it didn't take much of an argument to make me take the plunge. The men for whom we both worked were waxing rich in the lumber business. They, in days gone by, had to make a start.

We went out among our friends and raised the necessary capital. We opened headquarters in Chicago, but operated in Minnesota, Wisconsin, and Michigan. It was at the start that I enlisted the services of Jerry Casey. He was tickled to death to join us in the venture.

We enjoyed an exceptionally good business right from the beginning. It didn't take so much money to open with in those days, although competition was keener than it now is. You see, there was so much lumber thrown on the market. As the years went by and lumber became scarcer and scarcer, prices began soaring. It takes a pretty good bunch of working capital to open a lumber business today.

When we threw open our doors lumber was, as I have said, sold entirely by cargo, shipped in by vessel to the wholesale lumber market in Franklin and South Water streets. Today that market is out of existence and practically all lumber now is sold at the mills.

Dealers in those early days couldn't pay cash for their lumber, owing to a financial depression. Lumber sold at extremely low prices. We found it necessary to extend credit, and so took

the notes of the lumbermen and discounted them at the different banks. The credit of the Chicago lumbermen was gilt-edged and banks were anxious to handle that class of security. We therefore had little trouble in discounting good paper.

We had frequent transactions where we sold from 5,000,000 to 7,000,000 feet of lumber a day. As business developed we opened yards in several important towns in Iowa. Sales are different now. The transactions themselves are different. Where we sold only by cargo in the '90s, we today sell entirely by carload lots, and the volume of business done by a firm at the present time isn't as big as it then was.

Sometimes we averaged from three to eight cargoes a day. That's quite a bunch of lumber when you sit down and figure it out. A cargo of lumber, for instance, would average about 175 carloads. There are approximately 350,000 feet of lumber in a cargo. In a carload lot there are something like 20,000 feet. Today, a lumberman does a good business if he disposes of twenty cars a day. There you have actual comparative figures of what the lumber business was and is.

For instance, a good day in our first year meant eight cargoes. Eight cargoes averaged 1,400 carloads. With 350,000 feet to the cargo, we sold 2,800,000 feet of lumber. Today if we sold twenty cars we'd be disposing of a lot of lumber.

The market formerly was governed by supply and demand. Today it is governed entirely by demand. If a dealer has a good trade, it makes a big demand on the manufacturer for his class of lumber.

In the early days hemlock wasn't salable. You couldn't give it away. Nobody would think of buying it. But lumber has grown steadily scarcer and scarcer. Today hemlock furnishes at least half of the lumber that is used. Coast lumber wasn't in demand in the Middle West then. White pine from Michigan and Norway was used here almost exclusively. White pine was cheap, selling then for less than hemlock sells for now. And just to think that hemlock once was an absolute drug on the market, and if you wanted

(Continued on page 128)



THE COLLETON
CYPRESS CO.

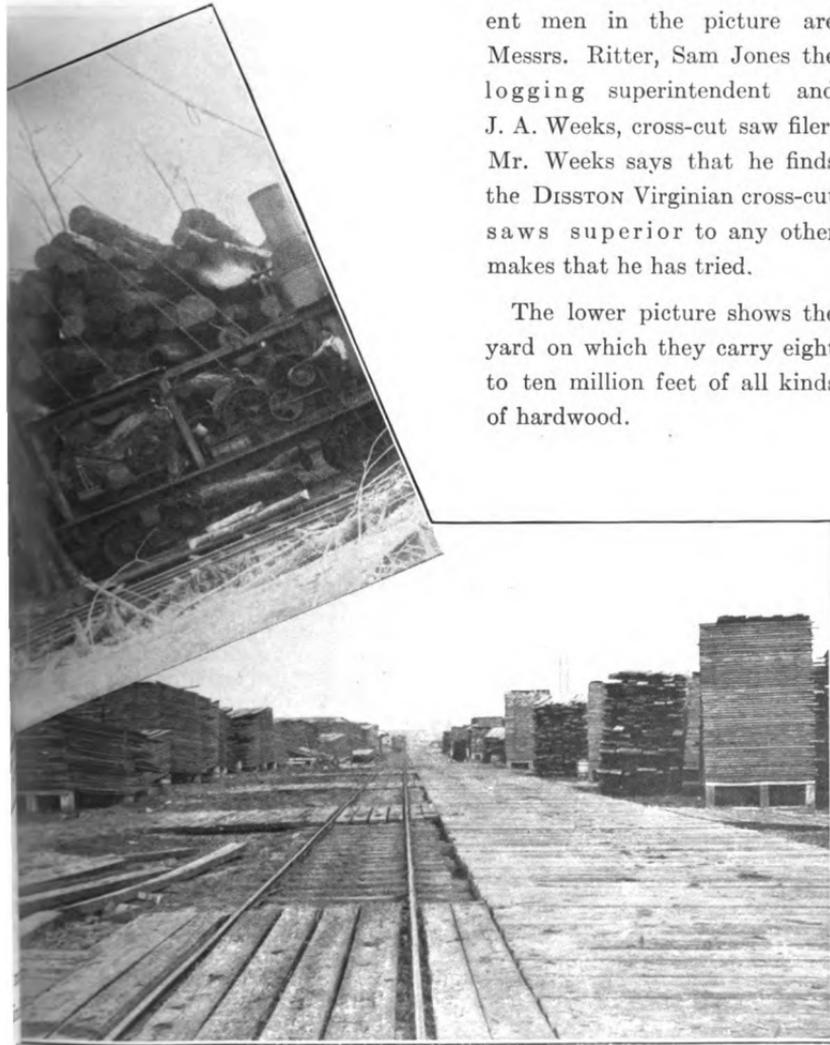
This busy southern mill is located at Colleton, S. C., in the heart of the cypress country. They have a particularly strong organization of young men who are accomplishing excellent results both as regards the quantity and the quality of the lumber they are turning out. The men shown to the right of

the upper pictures are Messrs. Rellish, yard foreman, O. Fobbs, mill foreman, C. J. Brass and W. E. Haskins, inspectors, A. Fobbs, machinist and E. E. Ritter, superintendent. Mr. Ritter was formerly band saw

filer in this mill and is to be congratulated on his rapid promotion. **DISSTON** Saws are used exclusively in the woods and in the mill.

The middle photograph shows a part of the logging equipment of the Colleton Cypress Co., and a pile of logs ready to be loaded on cars and transported to the mill. The three most prominent men in the picture are Messrs. Ritter, Sam Jones the logging superintendent and J. A. Weeks, cross-cut saw filer. Mr. Weeks says that he finds the **DISSTON** Virginian cross-cut saws superior to any other makes that he has tried.

The lower picture shows the yard on which they carry eight to ten million feet of all kinds of hardwood.



THE MAKING OF AN AD.

THERE are many ways and means of creating advertising, but much of it is created from the brain of some man sitting in an office with nothing save a pipe and his imagination for inspiration.

The thorough manner in which **DISSTON SAWS**, tools and files are made extends also to the advertising of their products. It will be of interest to our readers therefore to follow the **DISSTON** admen in their search for real facts for advertisements.



Two of their recent advertisements were originated in a practical way and at the same time a Pennsylvania farmer was given a vivid demonstration of what it means to have good tools at hand. On a certain farm it had been noticed that the masonry of the spring-house was being destroyed because the protecting coat of cement had fallen away, and also that the farmer was arduously attempting to clear away some large trees by means of the old time ax.

One bright morning the **DISSTON** admen, bearing two cross-cut saws, a large mason's trowel, and accompanied by a photographer, stepped into an automobile and drove up to this farm.

The farmer was presented with the trowel and the repairing of the spring-house suggested. He had neglected

the work simply because he did not have the *proper* trowel, but now armed with a good one he mixed the cement, set to work, and the photographer snapped a picture of him at the job.

In the meantime his two helpers were given the **DISSTON** cross-cut saws and they, too, were set to work on the trees. The photographer obtained a fine picture of these two men at work on one of these trees.

Where it had taken them about an hour to fell a tree previously with an ax, it took just fifteen minutes with a **DISSTON** Cross-cut saw to fell a similar tree measuring three feet in diameter.

Both these photographs were used for advertisements, and realistically present the up-to-date solving of part of a farmer's troubles by the use of **DISSTON SAWS** and other tools.

That even a hunt for advertising material has its adventurous side is shown by several little incidents which befell the party before its return. While turning the auto for the home trip it was necessary to run it on some

meadow land all soft from recent rains. The heavy car sank several inches into the oozy turf. The wheels revolved merrily without getting any purchase on the ground. All hands climbed out, peeled off their coats, and buckled down to extricating the car. The farmer produced a big jack from a corner of his barn, the hands gathered boards, and after much pushing and lifting and snorts from the engine the machine was unmired and the party started.

Rounding a turn in the road they came upon a horse and wagon hitched to a post. The horse objected to the sudden appearance of the car and attempted to bolt. His frantic efforts ripped off his bridle and but for the quick work of the admen in alighting and securing him, the horse might have been running yet.

THE DISSTON CRUCIBLE

When almost home they came across a peanut vendor with a little two wheeled cart. He had a mule for motive power and this mule had been browsing in a nearby pasture. At the time of the admen's arrival the owner was vainly endeavoring to re-harness the mule. The beast, however, was stubborn, and owner and mule were describing ever increasing circles that led farther and farther from the cart. Again the auto stopped, and one of the party who was something of an expert in mule nature offered to "show how." The animal's owner gladly accepted the proffered help and all watched the battle with interest. First a string was tied tightly about the animal's ear. Then it was changed to his mouth. All this time the DISSTON "tamer," with his arm thrown over the animal's back was gently pricking him with a wooden toothpick, much to the beast's apparent surprise, for he looked about frequently with perplexity clearly shown on his face. In a couple of minutes the man started towards the cart while the now docile mule jogged by his side. The beast cheerfully backed into the shafts and the astonished onlookers firmly believed they were about to see the mule even harness himself.

It is claimed that just as this DISSTON man made the way easy for the mule owner, DISSTON saws and tools make all things easy for the millman and mechanic.

MEANT ALL RIGHT

A clergyman who advertised for an organist received this reply:

Dear Sir:—I notice you have a vacancy for an organist and music teacher—either lady or gentlemen. Having been both for several years I beg to apply for the position.

—*Exchange.*

"I see your wife has her hand in a bandage. What's the matter?"

"I set a mouse trap and put it in my coat pocket last night."—*Exchange.*

POSITION WANTED

As band saw filer. A-1 reference as to ability and character.

Address, Box 142 Kinston, N. C.

THE TURTLE LAKE LUMBER COMPANY

The frontispiece this month shows a view of the Turtle Lake Lumber Company's plant at Winchester, Wisconsin, which is situated on a branch of the C. & N. W. railroad, some forty miles southeast of Ironwood, Michigan.

This up-to-date plant consists of sawmill, planing and shingle mill, blacksmith and machine shops. In addition they run a large store which does a business of \$100,000 yearly.

Mr. C. A. Blackstrom is Superintendent, while Mr. George Darling is General Manager and supervises the work in the woods and on the twenty miles of railroad which the company operates. Three hundred men are employed on the railroad and in the woods cutting hemlock, pine, cedar and hard woods. The mill cuts 125,000 to 150,000 feet per day. At this rate it is estimated that the timber limits controlled by the company will furnish a supply for about ten years.

Mr. H. C. Adkins and his son have charge of the mill saws and are without doubt largely responsible for the fine quality of lumber which the Turtle Lake Company has the reputation of turning out. Another feature which helps to secure this reputation is the use of DISSTON SAWS, which are warmly endorsed by General Manager Darling.

MUCH MISSING

A young fellow who was an inveterate cigarette smoker went to the country for a vacation. Reaching the small town in the early morning, he wanted a smoke, but there was no store open. He saw a boy smoking a cigarette, and approached him, saying:

"Say, my boy, have you got another cigarette?"

"No, sir," said the boy; "but I've got the makings."

"All right," the city chap said. "But I can't roll 'em very well. Will you fix one for me?"

"Sure," said the boy.

"Don't believe I've got a match," said the man, as he searched his pockets

The boy handed him a match.

"Say," the boy said, "you ain't got anything but the habit, have you?"—*Lippincott's.*

GETTING THE MOST OUT OF YOUR SAW

By GEORGE McCLELLAN

HOW long should a saw be operated before repeat sharpening is a very important subject, especially so if a bandsaw is the one in question.

The habit of operating a band saw as long as it will stand up to its work and cut straight is a bad one. It is much better to have regular changing time allowing such periods to be governed by the kind of timber being cut. Of course the condition of the logs enter largely into this. The less grit the better the condition of saw and better results as to output will be obtained in a given period. To illustrate, a large mill in N. C. had all their logs hauled to mill by carry logs, which drag the logs on the ground between two wheels. It was found necessary to change saws so frequently that the mill was forced at times to wait for sharp saws because the filers could not keep up with the demands. Finally the management installed a washing arrangement, a system of sprays under pressure struck the logs as they were hauled into the mill by the log jack and the benefit was all that could be desired. The saws stayed in running condition for a reasonable time and the desired output was obtained at small cost and everybody concerned was happy, especially the filer.

The advantage of changing saws at regular periods are many. In the first place it establishes a system, which is of great benefit in all business, and helps to keep the cut at a standard; in other words if the changes are made quarterly, the amount produced each two and a half hours will be pretty nearly alike providing the logs average about the same. The sawyer will exert himself to the utmost to keep up to the standard he has established and will increase it if he can and will hunt up the tallyman at the end of the day and ascertain if he has gone behind or gained.

Another advantage of changing saws at stated periods is to relieve the saw of too constant and undue strain. There is no doubt that many saws

which have failed on account of cracks or losing tension is due to either too long service per trick, or running it when dull, or continuing one on the wheels after a bad dodge in cut. The latter is a most prolific cause of cracks. The dodge in many instances will pull tension or dish or both and saw should be removed, and examined and corrected, which will not only increase the life of the saw, decrease expense and make life easier for all concerned especially the filer and sawyer, and the owners will benefit by increased output, better lumber and better frame of mind at the end of each day. In other words the mill will run smoothly and an average output with few miscuts will be the result.

Don't work a willing horse to death is an old saying that can be applied to a band saw. Treat the horse right and he will do a good day's work and after a good feed and rest will be ready for the next day. Although the saw is inanimate, it must be treated as though alive, keep up its condition, do not overwork it, and it will respond to the lever, the same as the horse responds to the reins. If forced too hard either will fail or nullify. The horse will strain himself or balk, and the saw will dodge and the sawyer will cuss. While the filer will in many instances become disgusted and hunt a smoother job. Don't expect too much. Learn the limit of each saw and don't drive beyond it. Many mills force their saws entirely too hard and suffer in quality and quantity of output, and will find if they will investigate that their neighbor whose mill is of the same capacity and who is conservative, manufactures more and better lumber, subjects neither saws or machinery while doing it. There is nothing in the slap dash method. It may look to the casual observer, and to the owners as though they are making more by such methods but my own experience and observation in numerous mills have proved that the men who keep their saws well sharpened and tensioned invariably get the best results from every point of view.

MAKING GOOD

EDITOR DISSTON CRUCIBLE,
Philadelphia, Pa.

DEAR SIR:

Over two years ago I took a position with Woolford & Smith, Cambridge, Md., to file their 6-inch Band Re-Saw, and while I had made good as a circular saw filer up to the time I took this position, I had never before had any experience as a Band Saw Filer, but after reading instructions on Band Saw Filing in the DISSTON Hand Book, I was not only able to make the Bands go, but from what I have since learned, I have had great success, for during the time I have been filing at this mill we have had only seven 6-inch Band Saws, all of them DISSTON, and I am pleased to advise that while some of my saws from ordinary use are reduced in width to less than 4-inch, all of these saws are intact, and still doing service, standing a feed of 125 to 150 lineal feet per minute cutting N. C. Pine. There is only the original braze made at the factory, in any of these Band Saws, and I never yet had as much as one crack in any of them, which speaks in itself volumes for the superior quality of the DISSTON SAWS.

Very truly yours,
W. S. WARNER.

Mr. Warner, being a modest man, evidently does not want to talk a great deal about his accomplishments. This is a very praiseworthy trait in his character, but he really deserves a few more compliments than he gave himself.

To qualify as a band saw filer after having had experience only on circular saws is indeed quite a feat. It takes a lot of good head work and reasoning to figure out for oneself how band saws ought to be put in order without first serving an apprenticeship at the work. It was also good judgment on Mr. Warner's part to read carefully the DISSTON Handbook on Saws. Not everyone, perhaps, could as readily apply what he read as Mr. Warner, but his experience ought to serve as a good example for other filers to follow who wish to broaden out and take on other work than that they have been doing.

FLIES IN AMBER

Certain careless flies, ants and other insects that existed on the earth before there was man, got their feet entangled in deposits of resin falling from the trees. The powerful aroma half-stupefied them, and they were powerless to escape, while the deposits increased about them. They died. Meantime the world went on with its business; subtropical vegetation disappeared from the Artic Circle, continents separated themselves from one another, life ascended in the scale, and man occurred and took to wearing clothes and seeing after things. About the time when man had learned to fly, these careless insects appear again quite unchanged and perfect, set in amber. . . . Most people think that amber is taken from the sea, because the sea, encroaching on the islands and shores of the amber forests, broke up the amber matrix, which sank to the bottom, but washed out the lighter amber and brought it to distant shores. The main deposits, however, are still underground, and the chief one is at a place near Koenigsberg, near the coast line of East Prussia, where scientific mining has gone on for fifty years. With the new freedom in colors and decoration in women's dress, amber, with its variety of hue and shape, has found a new importance. But it is better without the flies.—*Manchester Guardian*.

This Book Will Help You to Get Better Results from Your Saws. .

It tells how saws are made, how you can hammer and tension your own saws to keep them in the best condition for work.

The different shapes of teeth and their uses are given, as well as full directions for gumming and filing. The book also tells how to adjust your saws to the mill, and what speed should be maintained to get the best results.

Many other valuable points about the care and running of saws are fully described. Frequent illustrations make the directions clear and easy to follow.

It is FREE for the asking.

Write today for your copy of the
DISSTON HANDBOOK.



WHEN I came into the office I found Jim sitting in his usual place, with one of my cigars in his face and a bunch of newspapers in all stages of disarray, spread around him.

"Tom, old boy," said he, "I came in to tell you a lot of stuff about the occult side of this 'psychological depression' that the industrial conditions are suffering from, but you weren't here so I just smoked and read the newspapers, and now I don't want to talk about it. I find the newspapers have figured it all out and given the public generous and copious quantities of 'dope' on the 'psychological condition,' so I won't try to hand you any of that stuff and I'll cut out my occult knowledge, but I am bound to talk to you a little while, so I'll tell you a story that comes to my mind.

"To begin with, did you ever think how easy it is to make a fool crack when you think you are saying something that is smart and covers the situation perfectly? Now, my story will illustrate this phase of human verbal foolishness to its last limit. The tale dates away back to the time that Governor Patterson was seated in the executive chair of the big state of Pennsylvania. It concerns a rising young politician from one of the northwestern counties of that great state, and a good old lumberman from Lock Haven, who had already arisen in his particular line. The old gentleman had been a life long friend of the rising young politician and his family, and when the R. Y. P. secured a seat in the state senate at an age that was away under the usual senatorial mark, the old lumberman, you may be sure, did not lose any of his respect or esteem for his young friend, whom we will call Harry, for short, and every time they met he would do his best to

demonstrate his affection and regard for his young friend. Harry in turn to show his appreciation of the old man's feelings, would extend a hearty invitation to him to come to see him at his hotel in Harrisburg the first time it was opportune or possible, and partake of his hospitality and entertainment. Now comes springtime, the Susquehanna in flood, on her broad bosom many rafts of lumber and logs, and amongst the many was a fleet belonging to our friend from Lock Haven, and on one raft acting as admiral, or some such office of power, was the owner. They arrived in Harrisburg in due time but after the mooring, tie-up, or anchorage, had been properly attended to, the hour was too late for social calls and the old gentleman concluded to postpone his call until morning. He was not aware that Gov. Patterson's inaugural ball had been pulled off the night before, nor was he aware of the fact that his friend Harry had been one of the Governor's staff at the terpsichorean function, and the time he chose for a call on his friend was about two hours ahead of the time when active participants in inaugural balls begin to look dimly and hazily into a mirror and realize that it is considerably past the 'cold gray dawn of the morning after,' so he strode bravely into the hotel and asked to be shown to his friend's room. His air of early morning assurance put one over on the clerk and calling a bellhop he instructed him to conduct this early caller to the room designated. On their arrival the boy was about to knock, but Mr. Lumberman says, 'nay, nay, kid, that'll be all from you—fade—I'll do the knockin',' which he immediately proceeded to do. After several repetitions of his first gentle tappings on the chamber door, he heard a muffled invitation to 'come in,' so he turned the knob and finding the door unlocked pushed it inward and gazed on a 'morning after' scene that would have gladdened the heart of a prohibition speaker could he get it on a stereopticon slide. There were four occupants in the room, all male, in a variety of careless poses, but all in full regimental uniform, including swords. Two on the bed, one on the couch and one sitting at the table. The bed and couch occupants were dead to the world; on the table were three wine bottles half full, one lying on its side with the last of its contents dripping from the saturated cloth to the floor, the floor itself strewn with empties, and the furniture looking like a cubist's dream. The only sign of life was in the man at the table, his elbows at rest and his head supported in both hands, and his eyes sleepily fixed on the intruder. Our riverman gazed on the picturesque disorderliness with an amused eye, looked the man at the table over very carefully, and said, 'well, by crackey, *this* reminds me of home.'

"The man at the table opened his eyes a little wider and in a gentle voice said, 'stranger, I'm glad I said, come in; you are welcome to our beautiful city, but in candor and confidence and with all due respect to your family, if the statement you just made is correct, I want to inform you sir, you must have one hell of a home.'" T. H. C.

THE CRUCIBLE HALL OF FAME



NOW IN WAR TERRITORY.

The progressive American is always on the lookout for opportunity, whether at home or beyond the seas. The three men shown here have listened to the call of foreign lands and when the photograph was taken, on the North German Lloyd liner Kaiser Wilhelm II, were on their way to take positions abroad.

On the left is Mr. Emery Tomb, who is on his way to Russia to take a position as setter. Next him is Mr. S. H. Bowen whose destination is the Far East where he has been engaged to

act as head filer in one of the large mills. Mr. F. M. McConnel, on the right of the picture, is, like Mr. Tomb, on his way to Russia to take a position as sawyer.

It is quite probable that Mr. McConnel and Mr. Tomb may see some stirring times as Russia, the country for which they were bound, is now engaged in a great European war in which eight nations have joined battle. Mr. Bowen in the East may also see some fighting, as Japan is assembling her men to fight on the side of her English allies.

WHQ'S WHO IN THE SAW WORLD



E. V. SBISA

THE New Orleans Branch of HENRY DISSTON & SONS prides itself on having in its organization a group of vigorous and efficient men. In spite of the fact that the climate usually does not encourage energy, these men are always hustling, making enviable records in sales of Disston products and in good will for the firm.

One of this group who has been successfully identified with the New Orleans branch (the C. T. Patterson Company), is Mr. E. V. Sbisá. He was born in New Orleans, the southern metropolis, in 1880 and has always made that city his home.

It was in 1899 that the C. T. Patterson Company took Mr. Sbisá into their employ. The fact that he has been with this concern continuously since that time is sufficient testimony to the regard in which he is held. Until the summer of 1913 he was connected with the sales and price depart-

ment. Since then he has been out on the road selling DISSTON SAWS.

Mr. Sbisá will need to keep all his faculties alert to keep pace with the sales records of his associates in the Southwestern Branch. He has, however, the natural qualifications of a salesman, and the ability to make friends for himself and for his firm which argue well for his success.

A LUMBERMAN'S LIFE STORY

(Continued from page 119)

it removed from your tract you had to hire the work done. People today are too prone to blame a mythical lumber "trust" for the existing high prices of lumber.

While my brother and I were operating our company, I became interested in a big lumber manufacturing plant with some other lumbermen in Wisconsin. This was, of course, a business separate and distinct from the brotherhood concern. Today, I have large lumber interests in Washington, am a director in one of Chicago's biggest banks, have large coal interests in several growing companies, and enjoy automobiling and golf. What more could a man wish for?

So much for youthful dreams. Dreams, I always have maintained, are negotiable if one but seeks to understand them. Application is but a mild form of dreaming, argue against the theory as you will. When you dream of becoming wealthy, your own boss, acquire the knowledge that is essential, before you can make your dreams become tangible.

Consult with the Jerry Caseys of the business you are engaged in. Every enterprise has its Jerry Casey. No business would be complete without him. When you become your own master, hire Jerry Casey. He has the knowledge which upbuilds, expands, captures the elusive dollar. When you've gone into the game and dug out its secrets, qualified to operate your own concern, let Jerry Casey boss the gang. It's a combination that never was known to fail.

THE DISSTON CRUCIBLE

Price 10¢ per copy

\$1⁰⁰ yearly in advance

TABLE OF CONTENTS

	PAGE		PAGE
TWO WINNERS (<i>Frontispiece</i>)		AN EFFECTIVE LOG WASHING DEVICE	138
EDITORIAL CHAT	131	SMALL-POX, WOLVES AND A CROSS-CUT SAW	139
THE FILE	132	THE MURRAMARANG SAW MILLS	140
ONE OF AUSTRALIA'S BUSY MILLS	135	HALL OF FAME	142
A BIG ONE FROM CALIFORNIA	137	MR. ED. PRESTON	143



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INCORPORATED

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TWO WINNERS—(see page 137)

THE DISSTON CRUCIBLE

A MAGAZINE FOR THE MILLMAN

VOL. III.

OCTOBER 15, 1914

NO. 9

EDITORIAL CHAT

INVENTION AND PROGRESS

IN this day of rapid transportation, labor saving devices and intricate machinery, we seldom spare a thought to the men who have given these really marvelous inventions to the world. As we ride in a comfortable, well-appointed railway train, we accept the facilities that enable us to travel hundreds of miles in a day without feeling the least gratitude toward the man who invented the steam locomotive or to the man who contributed so much to railway safety by the invention of the air brake.

It seems to be one of our human weaknesses to overlook the claims of genius. There was never yet an inventor who was not laughed at, ridiculed, or treated with more or less patient toleration when first he described his invention to a doubting world.

Westinghouse could with difficulty secure a trial for his air brake when first perfected. Today, it is used on practically every railway in the world. Marconi was called a clever dreamer when he predicted the sending of telegraphic messages through the air without wires; yet now immense stations are being erected on the shores of the seven seas for the sending of commercial messages. Fifteen years ago the flying machine, or aeroplane as it is now commonly called, existed only in the brains of a few earnest but scoffed at experimenters. Nowadays they have become a sight familiar to thousands of people. It was even planned to make a trans-Atlantic flight this fall from the United States to Europe in a huge machine carrying two men. The war alone interfered.

Inventors rarely receive the recognition which is their due. Yet the world would be standing still were it not for the contributions which they make to science, to manufacturing, and to the world's general welfare and health.

Inventiveness should be encouraged wherever it is met. There is probably a man in your mill or camp who comes forward every now and then with a suggestion for doing something a little better than it was done before. Encourage him, appreciate him, and let him see that his efforts are recognized.

Some of the greatest improvements in saws and saw mill machinery have been worked out by the men in the shop, in the filing room, or in the woods.

If a man is worth his pay he is worth listening to when he gets an idea. Give the man with an idea a hearing every time. It is on ideas that the world's progress is built.

THE FILE

ITS HISTORY AND MAKING

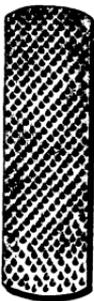
PART SIXTEEN

THE Beveled Edge Horse Rasp has the teeth running in opposite directions from the center, and each half is beveled on the opposite sides. The edges, including the bevel, are single-cut.

Blacksmiths—or Farriers—and veterinary surgeons, both use what is called a Horse Mouth Rasp in dental work on horses. This consists of a long handle (very often joined in the center for compact carrying) with a



Horse Rasp
Beveled



Horse Tooth File
and Rasp with
Adjustable Holder



Horse Tooth
Rasp and
Handle



Corn
Rasp

THE DISSTON CRUCIBLE

short Rasp at the end. This also comes in a slightly different form known as the Horse Tooth File and Rasp. In this case there is an adjustable holder at one end in which is secured a short combination File and Rasp called a Float. This Float is rasp-cut on one side and double cut on the other. It is held in place by two screws.

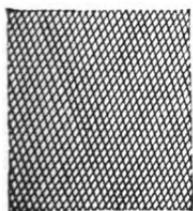
There is another Rasp which is usually classed among Manicure Files. This is the Corn Rasp. It is made in various sizes from 2½ inches to 6 inches in length, and is very light in weight. It is a Double-end Rasp, with a curved depression on each side at the center where a grip is obtained with the thumb and forefinger.

The next division in the listing of files comes under the head of Superfine Files. These include a long range of varieties running from the tiny files

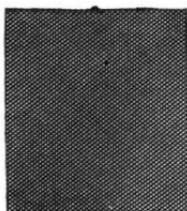
used by watchmakers and jewelers—on many of which the teeth are so fine that they feel perfectly smooth to the hand—and Manicure Files, to the comparatively large and heavy files with the Superfine Cut used for finishing work in machine shops.

At the foot of this page are shown illustrations of the various Superfine Cuts. These begin at what is termed the No. 00 cut and run down in fineness to that known as No. 8.

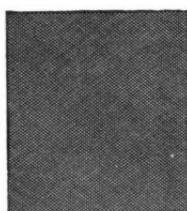
The majority of Superfine Files are shaped in a manner similar to the other files which have been described throughout this article, making it unnecessary to illustrate more than a few which show slight variations from these standard forms. The principal difference lies in the cut which can be readily seen by comparing the samples of Superfine Cuts shown here with the



No. 00



No. 0



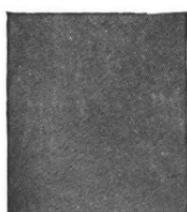
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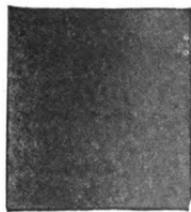
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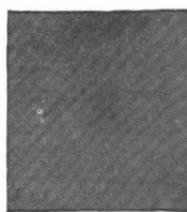
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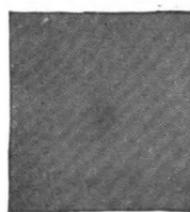
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No. 6



No. 7



No. 8

THE DIFFERENT CUTS OF SUPERFINE FILES

THE DISSTON CRUCIBLE

standard cuts shown in an earlier part. (Part Ten, March, 1914).

The Flat File it will be noticed differs from the regular shape by tapering to a point at the end. Other forms, such as the Pillar, Hand, Round and Half Round, all follow the same standard lines.

A file of peculiar shape is the Crochet File. This has both edges rounded and cut, and tapers to a point.

The Barrette File is somewhat similar to the Three Square File,

but is more flattened in form. This file as well as the one above is employed for filing on any fine, or close fitting work. Gear teeth are a good example.

The slitting File is diamond shaped; that is, wide at the center and tapering to a thin edge on both edges.

The Drill, or Joint File, is parallel in width and is furnished with either round or square edges, as preferred.

(To be Continued)



Flat File



Crochet File



Barrette File

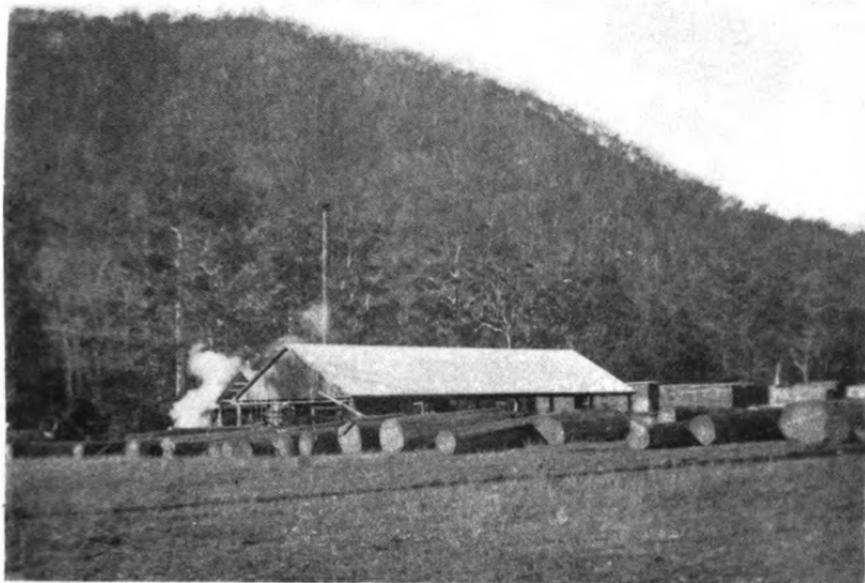


Slitting File



Drill or Joint File

THE DISSTON CRUCIBLE



ONE OF AUSTRALIA'S BUSY MILLS

AUSTRALIA, since its first colonization, has borne a reputation as a lumber-producing country.

While many of the forests have been entirely cut over, lumbering is still one of the country's important industries.

The photographs on this page show the plant of a concern which plays an active part in the lumber production of the day. This is the firm of Munro & Lever which operates "The Gorge Mill" shown in the upper picture. Be-

low is their yard where a large quantity of lumber is piled for drying and seasoning.

This mill cuts pine only, the average weekly output being 50,000 feet. A Canadian bench and two hand benches are used. The engine has a capacity of thirty brake horse-power. Disston Saws also help materially in insuring smooth running and maximum output.

Mr. H. C. J. Lever is also connected with the firm of James Campbell & Sons of Brisbane.



THE DISSTON CRUCIBLE



This California Sugar Pine measured $9\frac{1}{2}$ feet diameter at the butt. Note the comparative size of the man standing beside one of the lengths



The seven lengths into which the big Sugar Pine was cut

THE DISSTON CRUCIBLE

A BIG ONE FROM CALIFORNIA

MANY lumbering sections have traditions of immense trees that have been felled at one time or another. But such stories are becoming fewer as most of the bigger timber seems to have fallen before the lumberman's cross-cut saw.

California's most famous big trees have always been the Sequoias or giant Redwoods, but a new claimant for "high" honors has recently come to light in the shape of a huge Sugar Pine cut in the mountains above Tuolumne. While not exactly comparable in size with California Redwoods, this tree is nevertheless a remarkable one.

This old patriarch of the forest was brought down on August 12, and is said to be the largest log ever cut in the Tuolumne district. It measured nine feet six inches in diameter at the butt. To handle this immense log successfully it was necessary to cut it into seven lengths which are shown in the lower photograph. The figures of the men standing against the logs, particularly the one in the upper photograph, give a good idea of the size of this enormous tree.

The seven logs into which the tree was divided were cut up in the mill of the Westside Lumber Co., at Tuolumne. 37,000 feet of lumber were cut from them, DISSTON SAWS doing the work.

Our San Francisco branch was instrumental in obtaining these interesting pictures for us.

R. B. McKim Co.,
Boston, Mass.

Gentlemen:-

We have been running the 56" DISSTON Circular Saw you furnished us for several weeks and it is doing good work, cutting fast and smooth and accurately, making better lumber than we could get out with the saws we had been using. We are very much pleased with the work it is doing.

Yours very truly,
DIAMOND MATCH CO.,
Jas. M. Barron.

TWO WINNERS

(See Frontispiece)

When it comes to a sawing contest we naturally expect a great deal from the individual man. He in turn looks to his saw for rapid and efficient aid.

The frontispiece of this issue proves this, for while the prize-winning sawyer here pictured shows the pride he has in his work, he has also given a prominent position to the saw which helped him make his record.

Needless to say, it is a DISSTON SAW which enabled this man to win first prize in a fiercely contested competition. With a 7½-foot "Cougar" he cut through this 40-inch fir log, beating his nearest competitor by 59½ seconds. There were eight other contestants.

This is only another one of many incidents which go to prove that at work or play you will not go far wrong if you pin your faith to a DISSTON SAW.

POSITION WANTED

First class, experienced Band Saw Filer desires position, South preferred, but will go anywhere in the United States. Address,

H. G. LOEWER, Kiln, Miss.

IS IT ONE ON YOU, TOO?

—*Cuba Times*—
If she had to stand on her head,
We knew she'd get at it somehow,
This poem she's already read—
Now, we'll wager a cent to a dollar
If she gets the least kind of a show,
But you bet she'll find it out somehow,
know,
It is something she ought not to
If there's anything worries a woman,

REAL TROUBLE

Visitor—"Are you having any trouble to find work for the unemployed here?"

Uncle Eben—"Nope. Our trouble here is to get work out of the employed."

—*St. Louis Lumberman*.

THE DISSTON CRUCIBLE

AN EFFECTIVE LOG WASHING DEVICE

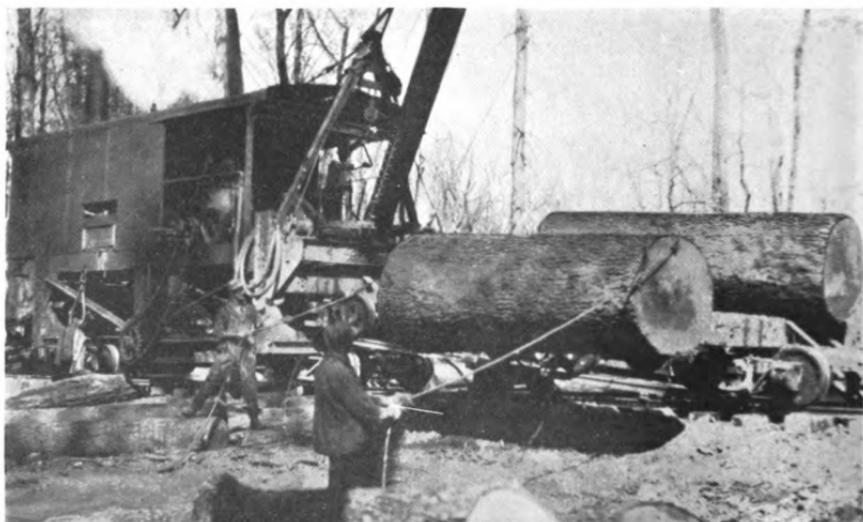
IT is often claimed that the first few minutes run of a band saw will dull it more than the succeeding hours run, and if this is the case, how much more must a saw be dulled that has to run through mud and sand and gravel caked on the outside of a log, which is a common condition of timber during the wet season. The photograph of two fine White Oak logs, taken in an East Arkansas woods, shows the amount of mud on the logs after having been dragged across the loading ground after a rain. How this mud and sand would affect a saw tooth can be better imagined than described. To overcome the detriment of such a condition one of the large mills has a washing device, shown in the other photograph, which is clear enough not to need any explanation. A three inch pipe leads to a yoke of pipe in which there are openings sufficient to direct a stream to every part of the log as it passes up on the conveyor chain. Driven from a centrifugal pump with a pressure of about 75 pounds, the loose bark, dirt and sand are all washed off, and the logs go to the saw clean and in almost as good a condition as if they had been in a pond. Any device which removes dirt from a log is helpful,



Streams of water wash off loose sand and bark

but this rig is at once practical and effective and commends itself to all mills handling hardwoods filled with sand and gravel due to logging methods.

M. Wright.



Logs caked with sand and gravel from being dragged along the ground

SMALL-POX, WOLVES AND A CROSS-CUT SAW

HAVE had some experiences with small-pox, wolves and cross-cut saws during the past 16 years, but only this once did they enter into a combination such as I am about to relate. I have tramped through the wilds of the North, South, East and West during these years, most of the time a cross-cut saw being my only pal.

On this particular occasion I had not only my old time friend the saw, but about 30 small-pox patients, that I was trying to give the glad good bye to.

It was the winter of 1901 that I found myself mixed up in this combination in the wilds of Northern Wisconsin where I was demonstrating and selling cross-cut saws to lumbermen. On this particular trip I had got a chance ride with a man of the woods to one of the large lumber camps about 20 miles from town. It was not far from the midnight hour when my friend halted at the door of the camp to let me off, he having 5 or 6 miles more to make before reaching his own camp. Seeing a light in the stable I made for it and inquired of the boy whom I found there, where the foreman could be located. The boy asked if I was the doctor and if I had come to see him as he was down with the small-pox and also 30 of the men. I had now found out all I cared to about this particular camp so inquired how far it was to the next camp which he said was 2 miles through the woods and by the road 3 or 4 miles. Thought I had better take to the woods, so offered the boy a dollar to guide me through. It was snowing and none too light, so the boy with the lantern took the lead and the writer, with his cross-cut saw, followed close behind. We had made the best part of the hike when the guide's trained ear caught the unwelcome howl of the pack. It only took him about two jumps of a wolf to start on the return trip. \$2.00 had no attraction for him to continue on, so I with the lantern and saw and the boy with the dollar parted. Have

often wondered if I did not pray for the wolves to go his way. If he prayed that they might keep me company his prayer was answered as every jump they made was so much nearer to my scared self. It was now about time to do something and to do it quick. I knew that my hungry guests could not go up a tree but that I could, just as I had in my kid-hood days with a hooked end-stick. But without the hook how could I reach my perch of safety? Necessity is the mother of invention. The idea came as if by an electric impulse to use the saw. So I adjusted the sample handle to the end of the saw and as the teeth were protected with a heavy leather cap, having a grip-like handle, all that was necessary was to hook the handle over a limb and haul myself to a place of safety. After gaining my perch, was somewhat uneasy as the leader of the pack was making some high jumps and tearing the bark from the tree. Exposing the newly filed points of the saw I prepared for action, and with a cavalryman's sabre-like swing made a cut at my hungry antagonist that settled the right of possession, as he soon left the scene of action rubbing his head with his paw, his companions following, giving an occasional growl as a parting good bye for the manner in which I had entertained the gang, especially their leader. Not until my visitors had reached a safe distance did I descend from my perch to make my way to the camp where I was received as a gladiator, fed and cared for as only men of the woods know how.

—*The Man With the Saw*

ONCE TOO OFTEN

PARSON BLACK (sternly)—“Did you come by dat watch-melyun honestly, Bruddeh Bingy?”

THE MELON TOTER—“Deed I did, pahson; ebery day fo' nigh on two weeks!”—*Puck*.

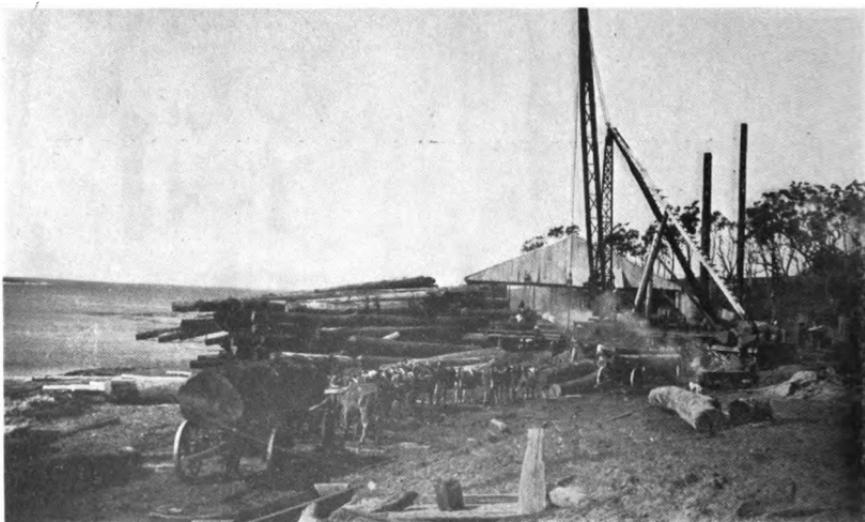


THE MURRAMARANG SAW MILLS

THERE is no saw mill in Australia more picturesquely situated than the Murramarang Mill. It is located on the south coast of New South Wales, about 200 miles from Sydney. On the one side is the vast Pacific Ocean with its long rollers constantly hammering at the shore. On the other the rich vegetation forms a beautiful background for the buildings of the plant.

This mill is owned by H. McKenzie Limited and is claimed to be the largest hardwood sawmill in New South Wales outside of Sydney. Mr. H. A. Swan, the manager, has been identified with the mill for the last ten years, starting in when a boy of thirteen, and working his way up.

Logs are hauled two to four miles from the woods by bullock teams some of which are shown in one of the



THE DISSTON CRUCIBLE

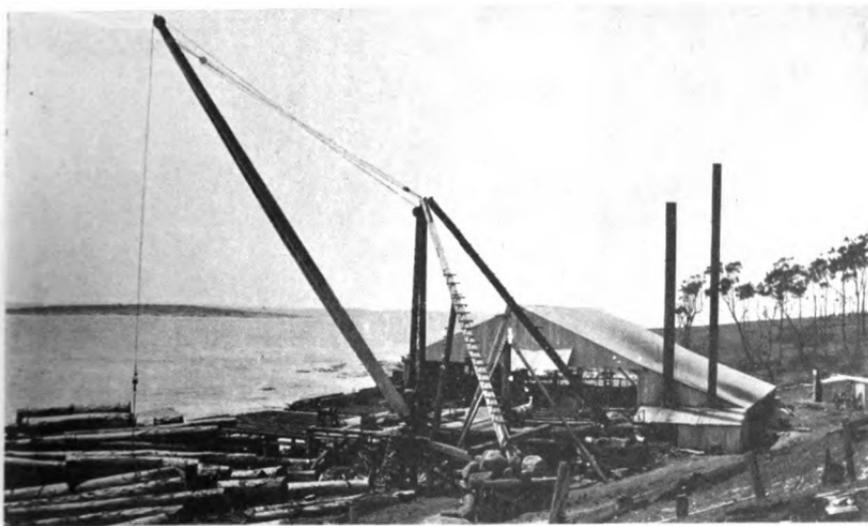


accompanying photographs. There are fifteen teams now in daily service, and each team hauls an average of 2,000 feet.

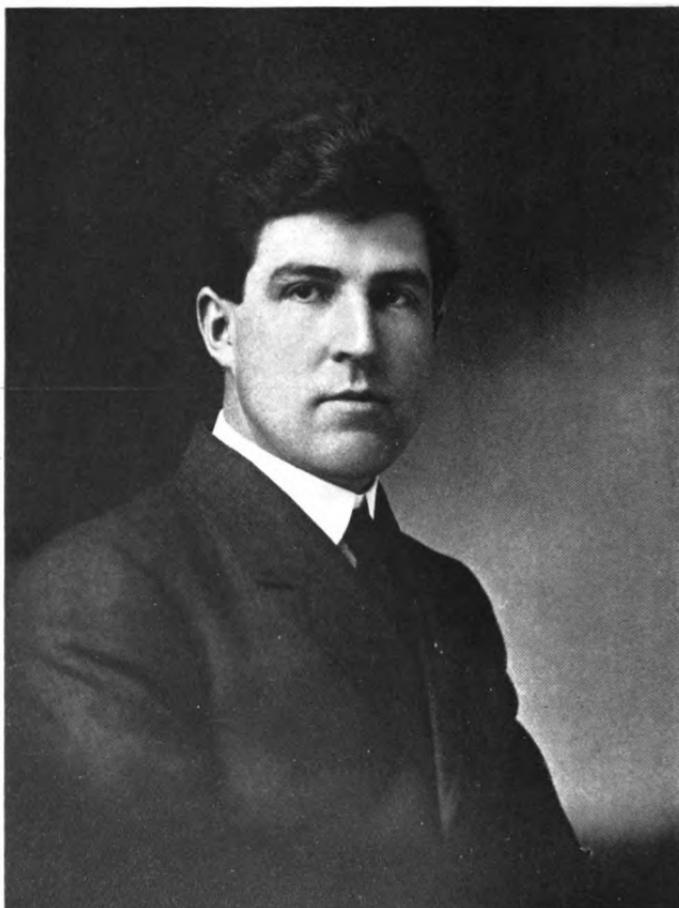
The plant equipment includes a large, ten ton steam crane, as shown in the photographs, which is kept constantly at work lifting logs to the steam cross-cut, and then to the carriage, as well as shifting the small logs to the rack bench. There are

four benches in the mill using 46-inch DISSTON SAWS, and producing an average daily output of 20,000 feet. DISSTON SAWS are used here entirely and are giving excellent satisfaction according to Mr. Swan.

For the photographs and facts concerning the Murramarang Mill we are indebted to Mr. Swan and wish to thank him for his courtesy in forwarding them.



THE CRUCIBLE
HALL OF FAME



Mr. H. J. KUTZ

IT is said that band saws sometimes get cranky under even the best of treatment, but it is a safe conjecture that none of them ever "put anything over" on Mr. H. J. Kutz. There is a certain look of determination and resourcefulness about the set of his jaw which would seem to indicate that he carries through successfully anything which he undertakes, whether it is the fitting up of a refractory band saw, or anything else.

For eleven of his thirty-three years, Mr. Kutz has been filing band saws. At the beginning of his career as a filer he found that one of the strong essentials for success was to use the best

saws he could find for the work in hand. Following out this principle his choice has naturally been the **DISSON BRAND**, of which Mr. Kutz always speaks in the highest terms. That his rule is a good one to follow is attested by his successful career, and by the good things said of him by his friends and associates.

At present Mr. Kutz is with the U. S. Spruce Lumber Company at Fairwood, Va., taking care of their bands and re-saws, a position which he has held with credit for the past nine years. These saws run night and day, cutting spruce and hardwood. This goes far to prove that **DISSON SAWS** merit Mr. Kutz's faith in them.

WHO'S WHO IN THE SAW WORLD



MR. ED. PRESTON

WHILE saw mill men do not often come into personal contact with Mr. Ed. Preston, his services are of great value to those in the Southern territory.

At the present time he is foreman of the saw shop of the C. T. Patterson Company, our New Orleans branch. Mr. Preston has had a very interesting business experience. We give it below in his own words and believe that every filer will gain added inspiration from its reading. Mr. Preston has carved out his own success by the energy and application he has given to his work. His is a good example to follow.

"I was born at Sheffield, England, on March 15, 1855, the son of an English Saw Maker—one of the old timers who worked for Spear & Jackson, Robert Sorby and other old time saw makers of England before saw making had made much headway in this country. My first experience in the saw business was in Chicago, where at the age of fourteen or fifteen, after running away from school and refusing

to go back, my father told me I was either to go to school or go to work with him—he had at the time a small saw works and repair shop, making all kinds of small saws and doing repairs of all kinds.

"Shortly after going in the shop, the late Mr. SAMUEL DISSTON, an old friend of my father's, advised him very strongly to go to Saginaw, Michigan, and open a repair shop. This was at a time when Saginaw was becoming known as a great lumbering place, and as at the time there was no other saw works there, we were kept busy gumming, hammering and fitting large circular saws. As the filers in those days did not understand hammering, and there were no automatic gumming and sharpening machines, this training made a good repair shop man and circular filer of me.

"I was about nineteen years of age, when the Superintendent of the C. B. Benson Lumber Company of Otter Lake, Lapeer Co., Mich., came to our shop looking for a circular saw filer to keep 72" saws in order that were cutting very large cork pine logs. I begged so hard to be allowed to try the job, that I was given the situation, and am proud to say that on my first attempt, as a mill filer, I gave entire satisfaction. Still have the recommendation they gave me. After the mill shut down, I worked in our saw shop that winter—but in the Spring went to work as gang filer for the H. Pearson Lumber Company of Saginaw, Mich. Stayed with the Pearson Lumber Company five years, using the old filing machines—no automatics introduced at this time. I had a reputation as a gang filer by this time, and the late Wickes Brothers of Saginaw, Mich., father and uncle of the present firm, offered me a good situation as filer for one of their gangs, which they had placed with Youman Brothers & Hodgins of Winona, Minn. I give a great deal of credit to the late Wickes Brothers for my success as a gang filer, as they both took a great deal of pains to explain and teach me all they could about their gangs. They had a working model of the movement of their gang over the office, and would work it and explain until I knew all

THE DISSTON CRUCIBLE

about it. As a result I have never had trouble to get all there is in a gang out of it.

"The second year after going to Winona, Minn., Youman Bros. & Hodgins wished me to take the job of filing the two circulars and top saws as well as the gang. The mill had two circulars, gang and shingle mill under one roof; this was when I got in trouble, as they had speeded the circulars up from 650 for the 60" to 850 revolutions and the 56" from 700 to 950 revolutions per minute. No other mills at the time were running saws so fast, and their old circular filer had gotten disgusted and quit, and I felt the same way. The first week after we started up, I knew the way the saws acted they were not opened up enough. After worrying about the saws all one night, I came down to the mill the next morning, took one of my straight edges 24" long and made it convex on the edge about what I thought would help the saws, put one up to fit it, and it ran so much better that I knew I was on the right track. Before the week was over, they decided to build a new mill, and put in two bands, one circular, and a gang, and the writer wished to take a chance with the band saws. Mr. Youman refused to let me have the band saw job, on the ground that it would give them all "green men" in the filing room, whereas, by keeping me at the circular and gang, they would only have green men on the bands.

"I had grown tired of Minnesota's cold winters and on being refused the position of band filer, decided to go back to Saginaw, Mich., where my brother-in-law, Louis Germain, had an interest in, and was General Manager of the O'Donnel-Spencer & Co. Planing Mill and Box factory. He put in a band re-saw, the first in that country, to split inch lumber into four pieces. The saws were 6" wide, 22 gauge. This was in a white pine country and the writer had the best of luck handling these thin saws.

"On account of my son's health which needed a milder climate, I next took a position at the E. G. Goddard Lumber Co's mill at Logtown, Miss., was there about two years, and my little boy got entirely well, running around the pine woods.

"I then heard a band filer was wanted at good wages at Harvey's Canal, across the river from New Orleans. Applied for the place, got it, and stayed with them about two years. Was then offered more money to go to the Fischer Band Mill at Carrollton, a suburb of New Orleans. Was with them two years when I was offered and accepted a position with the Big Creek Lumber Company, a fast circular and gang mill at Pollock, La. Was with them four years; got tired of the woods and came back to New Orleans, and, while holding a nice little situation in one of the box factories, was requested by an old friend, Harvey Avery, at that time traveling man for a saw company to take charge of the saw shop in a branch house they were to open in New Orleans, and Harvey was to be manager. When the branch house was opened, the writer went with Mr. Avery, stayed with him as long as he managed the place, about two years, and then went back to the Saw Mills and Box Factories.

"The past two years have been spent in charge of the saw shop of the C. T. Patterson Company."

GOING SOME

"Talkin' about runnin' " remarked the Hon. Andy Ananias Munchausen, "about the finest bit of sprintin' I ever saw was up in Scotland, the shootin' season before last. I'd been out all day deer-shootin', and had had most awful luck when I spied a whoppin' great buck about 1,800 yards away. Takin' a careful sight, I let fly. But, bless your soul, the instant my bullet touched him and before it had time to penetrate his hide, that beast was off like a flash!

"I never saw two such evenly matched things as that deer and my bullet. For over half a mile they sped on together, neither gainin' on the other; the bullet just managin' to keep in touch with the deer's skin. At the end of a mile, however, the pace began to tell on the deer, and he faltered just a moment. 'Twas fatal. The bullet sped on, and the poor beast keeled over.

—*Better Farming.*

THE DISSTON CRUCIBLE

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TABLE OF CONTENTS

	PAGE		PAGE
MOUNT LASSEN (<i>Frontispiece</i>)		FARMING CUT-OVER PINE LANDS	154
EDITORIAL CHAT	147	FRESNO FLUME AND LUMBER COMPANY	157
THE FILE	148	BIG TREES OF CALIFORNIA	158
IMPORTANCE OF PROPER FEED ON THIN CIRCULAR SAWS	151	MR. PAUL C. McCANE	160



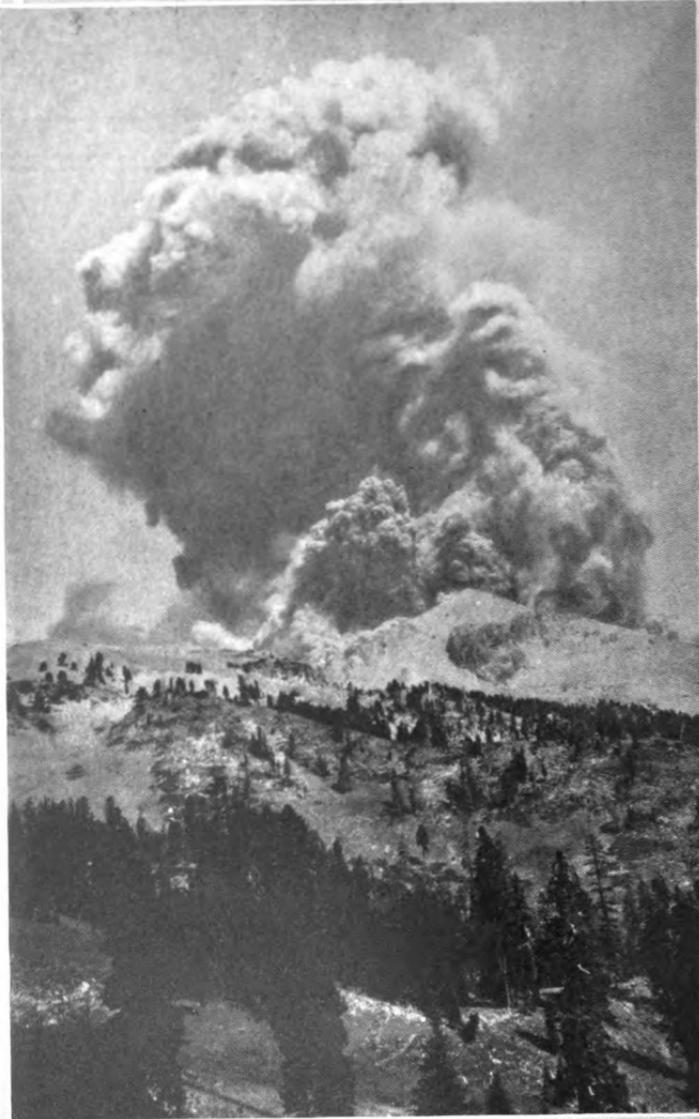
This Magazine is Published for the Advancement of the Interests of Millmen by

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MOUNT LASSEN, CALIFORNIA, IN ERUPTION.

Another view of this volcano is shown on
the front cover of this issue.

Copyright, 1914, R. E. Stinson

THE DISSTON CRUCIBLE

A MAGAZINE FOR THE MILLMAN

VOL. III.

NOVEMBER 15, 1914

NO. 10

EDITORIAL CHAT

THE WEST

THE WEST has always had an irresistible attraction for men of spirit and ambition. When, by the Louisiana Purchase, the United States took title to thousands of square miles of virgin territory, there was opened up for settlement a vast area which has never ceased to be a goal for generation after generation of America's energetic sons.

1849 saw one of the most spectacular rushes toward the sunset country. The lure of gold led the adventurous on and on, some to almost unbelievable success, others to bitter disappointment. Many tremendous fortunes were built in those days from the treasures dug from the earth and from the commercial enterprises which followed the settlement of the country.

One of the important results of this westward movement has been the peopling of the country by men of the most energetic and virile type. The men who had the desire to migrate westward, who were willing to put their fortunes to the test were a rugged and fearless lot. They were strong, they had imagination, they had ability. They set a pace in developing the natural resources of the land which their sons have ably maintained.

Of the many industries set in motion, none has had greater success or produced more wealth than lumbering. The great forests of the Pacific Coast have brought the lumberman as much, if not more, gold than the mines which they covered have brought the prospector.

Hand in hand with the lumberman in building up this great industry has gone the saw manufacturer. The huge timber found in this country called for larger saws than had ever been used before. Yet the sawmaker was equal to the demands made upon him and has turned out saws which can successfully handle even the largest timber encountered.

DISSTON SAWS have long been the standby of western lumbermen who know the dependence that can be placed upon them. On the other hand, the many excellent suggestions of clear-headed western lumber experts have contributed in no small degree to the success and efficiency to which DISSTON SAWS have attained.

THE FILE

ITS HISTORY AND MAKING

PART SEVENTEEN

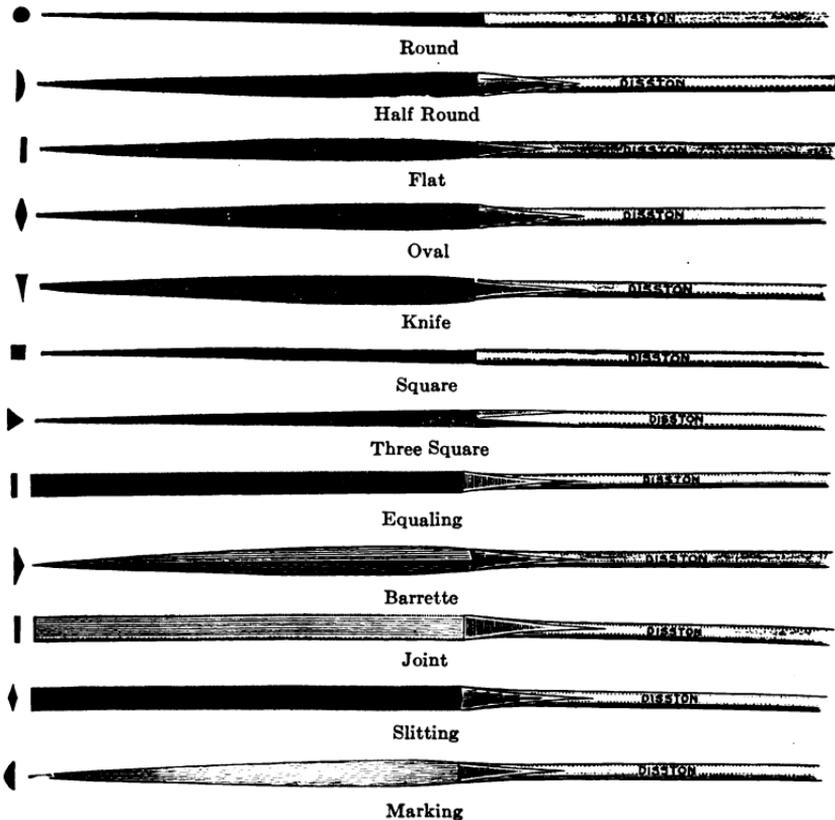
NEEDLE FILES are slender little files from four to six inches in length, and come in all the different forms. Only half the length is cut, however, the balance of the file being formed into a long, round tang or handle. These little files are used for jewelers' work principally.

To name the industries in which files are used would be almost like compiling a trade directory of the world, for there are few that do not need some form of file. This gives rise, of course, to a number of special shapes that are invented and manufactured to meet

the peculiar needs of some particular line of manufacture.

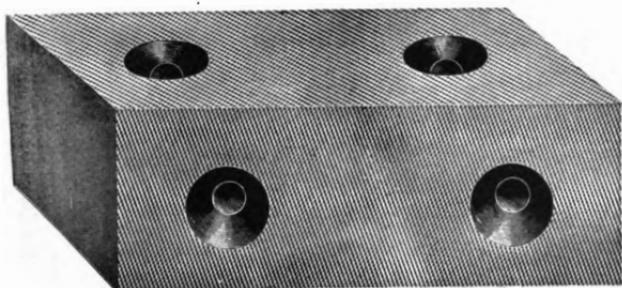
It would be impossible to show all of the various forms of special files, and needless, too, because many are turned out to meet certain conditions, or as experiments, and are later discontinued because some standard form is found to give as good results.

A special file that has attained a more or less standard form is the Riffler, used by sculptors, silversmiths, die sinkers, etc. This form consists of a long, straight handle in the center, while the ends for a short distance are file cut. The chief variation in

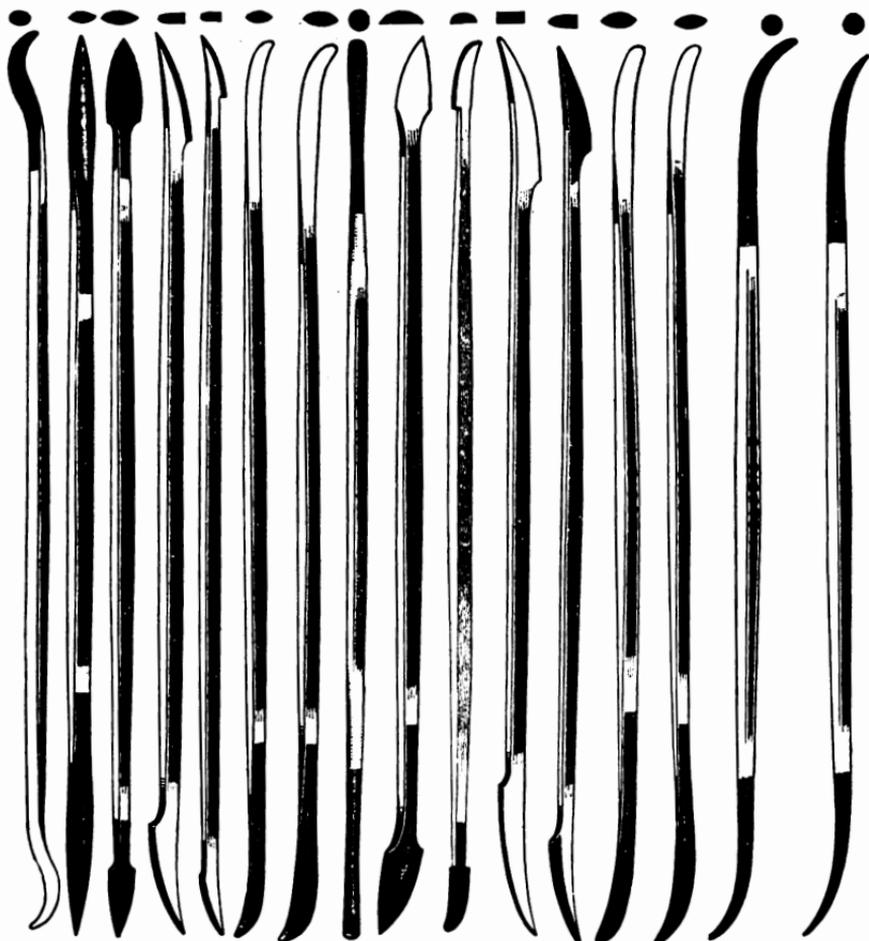


FORMS OF NEEDLE FILES

THE DISSTON CRUCIBLE

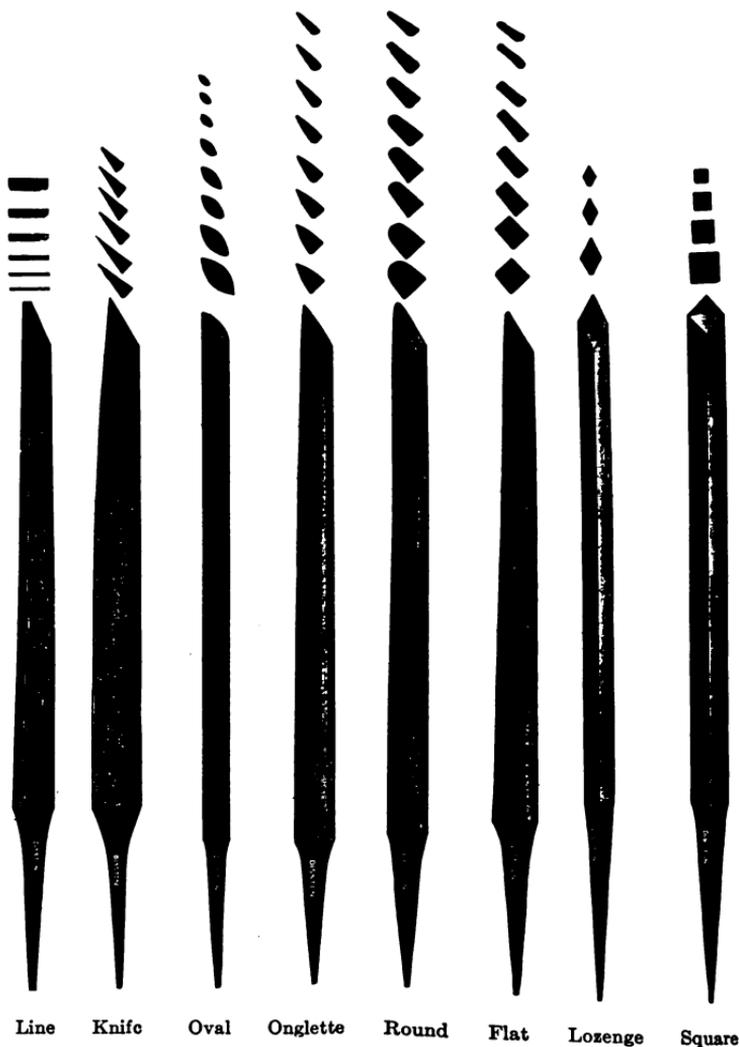


VALVE FILE



TYPES OF RIFFLERS

THE DISSTON CRUCIBLE



ENGRAVER'S TOOLS

these files lies in the shape of the ends. The shapes are too numerous to show in any article of this character, but a few examples illustrated will give a very good idea of the general form of these files. A form known as French Rifflers have, in the majority of cases, a rasp cut. There is also a form of Riffler that has only one end shaped and cut, while the tang fits into a long handle made of wood.

Engraver's Tools and Machine Scrapers, while not cut, are made the same manner and with much the same shapes as files, and come under the same classification. These always have the tang fitted into a handle for greater ease in using.

A considerable number of Special Files are made in heavy form such as the valve file.

(To be Continued)

IMPORTANCE OF PROPER FEED ON THIN CIRCULAR SAWS

WITH the advent of the band resaw and the light gauge blade, the prediction was freely made that the circular resaw was doomed to extinction in a short time, as part of the sawing outfit of the planing mill. The prophecy has failed of verification, and like the thin log saw, the thin resaw still holds its own.

One of the advantages of the thin circular over its competitor, the band, lies in the fact that nearly all of the ordinary employes around the mill can point up a saw and go on, doing good work at a fair rate of feed until the saw needs gumming. It will work under conditions that are absolutely prohibitive to the band.

Some experience with thin circulars that caused us lots of trouble might be of benefit to some one who is striving to get a circular to work on a band kerf. Our saws were ordered 14-gauge at the eye and 22-gauge on the rim, using full swage, side dressed to take only one-sixteenth inch kerf. The old saws they were to replace were 12-gauge straight, which would run along a half day without filing. It was like an axe chopping out a three-sixteenth inch kerf.

The mandrel ran hot, but it did not seem to make any difference to the old saw. The new blades, however, went all to pieces, so to speak. They writhed and twisted like a midway dancer and the first twist took all the swaging off both sides, by striking the bed plate at the back of the blade. It took some time to get the mandrel to run cool. From previous want of care, the arbor had scored at the bearing and showed slightly sprung when put in the lathe. When this was finally remedied and the box kept cool with the aid of a stream of cold water, another saw was put on. For a time, the saw would work well when the feed was about fifty feet a minute. Gradually heat would start to develop at the rim and then the saw would "snake" until water was applied to cool it off.

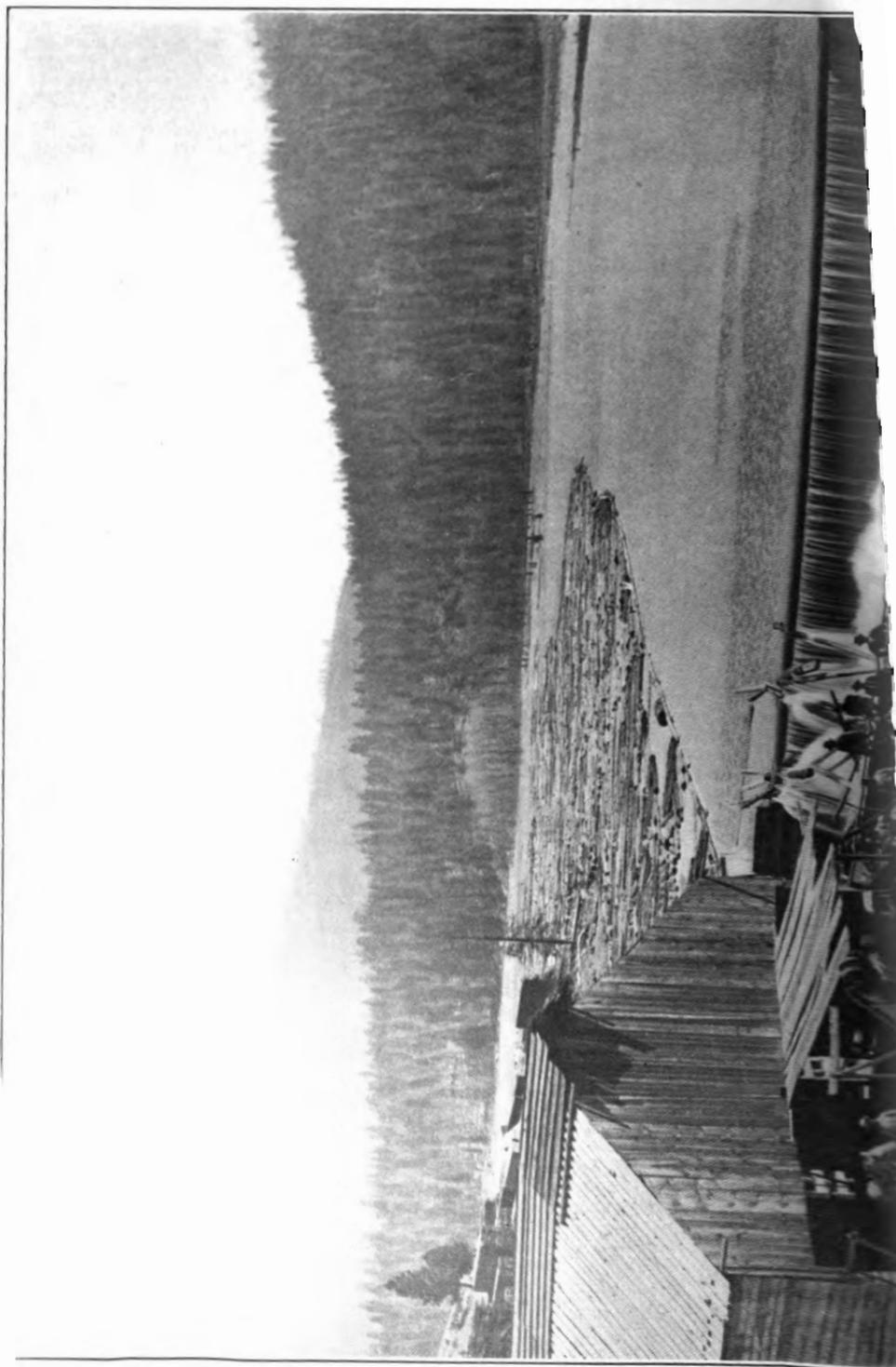
Here was a quandary; the saws would not work without the water and the dust would not go up the blow pipe with the water. The old saw was too small and orders were pressing. The saws were twenty-two inches in diameter and had eighty teeth, and it occurred to me that the saws were cutting too much fine dust to a given amount of feed; if they had less teeth or more feed, they might work all right. The feed pulley for a ninety foot feed was put on, with the result that the saws went through the siding as if it were cheese, without heating. The feed had been too slow. The same rule that applies to a big circular applies to a small one. If your saw has plenty of teeth and belt power, give it all the feed the belt will pull; if you have to run a slow feed, use fewer teeth; don't make flour instead of sawdust.

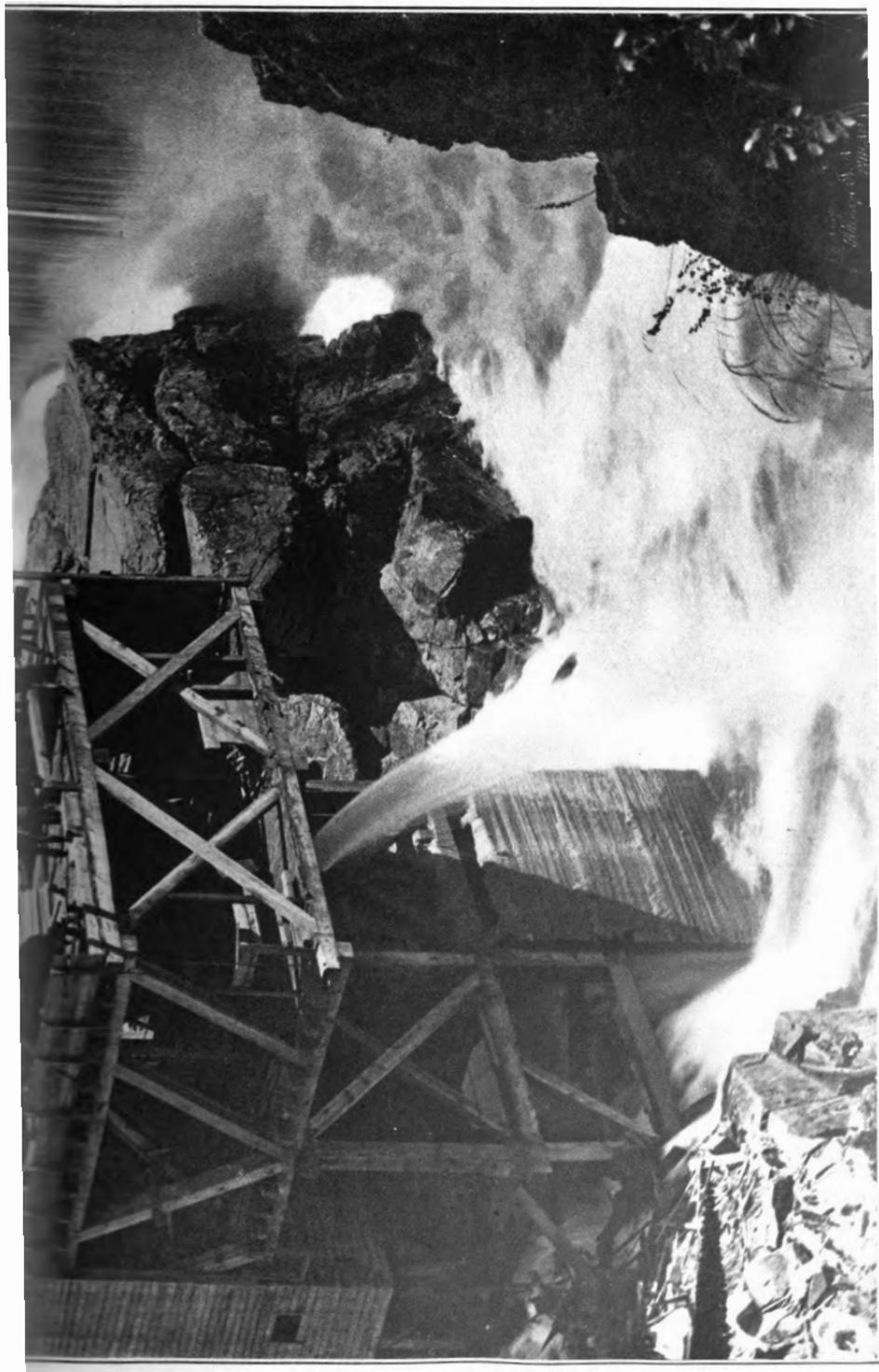
M. WRIGHT.

WASTED BY-PRODUCTS TO BE USED

The possibility of more thoroughly utilizing the enormous quantities of waste resinous wood produced in the lumber industry has been disclosed by an investigation just completed by the Bureau of Chemistry of the Agricultural Department at Washington. The annual waste, it is estimated, is not less than 8,000,000 cords. This, according to the investigators, can be manufactured into paper pulp, turpentine, rosin oils, pine oils, wood alcohol and other products to a value of nearly \$300,000,000. The investigation shows that the industries of paper making, wood distillation and rosin oil production can be developed in combination.

"Their development will not only open a profitable field of industry," says the bureau's report, "but should prove a big factor in the conservation of our natural resources. In addition, by the utilization of our waste and fallen timber, the injury to the forests by fire and insects will be materially reduced."—*Printers Ink.*





FARMING CUT-OVER PINE LANDS

By T. S. GRANBERRY

THE Long-Bell Lumber Co. of Kansas City, Missouri, realized many years ago that a time was rapidly approaching when their immense holdings of virgin timber lands in South-west Louisiana would be denuded of their beautiful forests of Long Leaf Pine, and in their stead there would be nothing left but a vast stretch of land covered with stumps and decaying tree tops. Not only a very unsightly scene,

This is not written, or based on theory, but constitutes cold facts which must be met in the very near future. What is to become of the country, and the many thousands of people who will be thrown out of employment when we have reached "the parting of the ways"? It will take many years for the country to readjust itself to the changed conditions, so in order to take the greatest advantage of future possibilities it behooves us to take time by the forelock, and begin *now* to solve the many problems which will enable us to successfully meet these conditions when they come about.

With these thoughts in mind the Long-Bell Lumber Company began several years ago to turn their attention to the utility of cut-over land. An Experimental Farm consisting of over four hundred acres was established in 1906, since which time a considerable sum of money has been spent in experimenting and demonstrating what varieties of fruits, and different truck and field crops are best adapted to the soil and climatic conditions



One Year's Growth Magnolia Fig Tree

but a dangerous and wasteful way to leave the land.

Their great lumber manufacturing plants would from sheer necessity be forced to cease operations after the last Long Leaf Pine had been felled. It is a true saying that "Coming events cast their shadows before." That phrase was the more forcibly impressed upon their minds when considered in connection with the above conditions. And it applies not only to the Long-Bell Lumber Co., but to all other concerns of a similar character; the people, and the country in general.

of this part of the country. As a matter of fact, in making these experiments with fruit, truck and field crops, many disappointments have been encountered. On the other hand, some experiments have been highly successful—even beyond our expectations.

In footing up results, and beginning with fruits, our experiments cover, at present date, sixty-four thousand trees and vines, in nursery and permanent orchards. This does not take into consideration the many thousand trees which have been condemned and destroyed on account of failure, or

THE DISSTON CRUCIBLE

some other objectionable drawback which caused us to withhold our approval of them as successful commercial fruit trees.

The sixty-four thousand trees embrace the following varieties; Peaches, Plums, Japanese Persimmons, Paper-shell Pecans, Cherries, Satsuma

by weather conditions (as in all other sections) rather than by adaptation of soils, etc., but to foot up results of these crops, barring unfavorable weather conditions, we can grow Irish and Sweet Potatoes, Water-Melons, Cantaloupes, and Table Vegetables successfully on a commercial scale. Tomatoes also do

well, but are subject to "Wilt Disease." Among the field crops experimented with, Corn, Oats, Sugar Cane, Sorghum, Cow Peas, Peanuts, are all successfully grown. Cotton, the South's greatest of all staple crops will be experimented with the coming season.

After devoting seven years to experimentation the management of the farm will be gradually turned toward commercial lines, at the same time being governed by our past experience with the various fruits and crops.

All experiments have been worked out along plain and practical lines, and records made of successes or failures, which is about the only sure method of



A Four-Year-Old Vineyard

Orange, Duncan Grape Fruit, Kumquats, Magnolia Figs, and ten different varieties of Grapes.

Without going into details, according to our experiments, we have condemned Peaches, several different varieties of Plums, Pears and Apples from a commercial standpoint. From the same standpoint our most promising fruits are, Paper-shell Pecans, Oranges, Grape Fruit, Figs and Grapes.

Many people are surprised to learn that Citrus Fruits can be successfully grown in this latitude. Our lowest temperature in the past ten years was experienced here in 1910. This was twelve degrees above zero. The Orange Trees stood this without artificial protection, which demonstrates the hardiness of this fruit in withstanding cold.

Our success with truck and field crops has been governed more largely



Grapes Raised on the Experimental Farm

demonstrating the real value of cut-over lands for horticultural and agricultural purposes. This should be of inestimable value in the future development of this section. Whether or not

THE DISSTON CRUCIBLE

these things work out as we would wish them to, we cannot ignore the fact that the Long-Bell Lumber Company is certainly deserving of praise and commendation in their efforts to give to the

would continue with the names of the different cuts of lumber and timber giving names and dimensions of each and the different qualities and how one can tell same, also how the different checks or shakes occur in wood.

Hoping that I may see this taken up in your columns.

With thanks, I am,
Yours respectfully,
(Signed)

A. LICHTENSTEIN.

No doubt there are many of our readers who can give this information desired by Mr. Lichtenstein. We will be glad to publish a letter on this subject and hope some of our friends will write us in answer to this request. The story referred to by Mr. Lichtenstein appeared in our September issue.



Two-Year-Old Duncan Grape Fruit

country a permanent backbone, through developing natural agricultural resources which will endure long after their mill sites have been obliterated by time.

CORRESPONDENCE

DEAR SIR:

I am taking the liberty of writing this letter to you to see if some reader could not help me by giving me the desired information.

I was a practical wood pattern-maker at one time and am now a teacher of shopwork in the New York City Elementary Schools and a reader of your magazine from which I have gained a good deal of knowledge, which I have found very useful in my work.

I was interested very much this month in the "Lumberman's Life story, from Tally Boy to Lumber Baron," especially in the part where Jerry Casey (the foreman of the lumber jack gang) tells Jim about the different cuts of timber and the names, growth and qualities, and heartily wish that some one with Casey's experience

A USEFUL LETTER

I thought "E" to be the most unfortunate letter in the alphabet, because it's always out of cash, always in debt, never out of danger and forever in hell. But after I became better acquainted with "E" I found it was never in war and always in peace. It is the beginning of existence, the commencement of ease and the end of trouble. Without it there would be no meat, no life, no heaven. It is the center of honesty, makes love perfect and without it there would be no hope.—*Totem Pole, Seattle P.-I.*

ONCE OVER

BARBER—Shall I go over it again, sir?
VICTIM—Oh, no; I heard every word you said.—*Boston Truth.*

POSITION WANTED

Circular Saw Filer, several years experience, best of references. Address Oscar Dow, R. F. D. No. 1, Montgomery Center, Vermont.

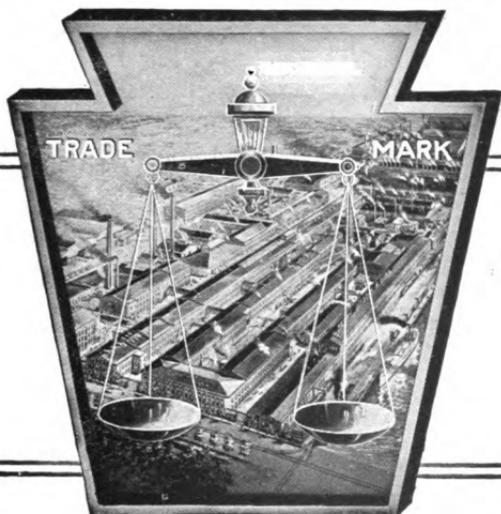
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TABLE OF CONTENTS

	PAGE		PAGE
SKIDDING PINE	<i>(Frontispiece)</i>	COTTON STATES LUMBER Co.	171
EDITORIAL CHAT	163	PROOF OF TOUGHNESS	172
THE FILE	164	CAUSES OF "BULL NOSE" LUMBER	173
FROM SMALL TOWN BARBER TO BIG TOWN LUMBERMAN	166	ONE OF THE MIDDLE WEST'S REPRESENTATIVE MILLS .	174
MEADOW RIVER LUMBER Co.	168-169	GIDEON & ANDERSON LUMBER & MERCANTILE Co.	175
RESCUING A DISSTON SAW	171	SYDNEY W. BATTY	176



This Magazine is Published for the Advancement of the Interests of Millmen by

HENRY DISSTON & SONS
INCORPORATED

Keystone Saw, Tool, Steel, and File Works

PHILADELPHIA

BRANCH HOUSES :

Chicago, Ill. Boston, Mass. Cincinnati, Ohio. Seattle, Wash. Portland, Oregon.
New Orleans, La. Memphis, Tenn. San Francisco, Cal. Sydney, Aus. Vancouver, B. C.
Canadian Works, Toronto, Canada.



Skidding Pine at one of the George Gordon Camps in Northern Ontario, Canada

THE DISSTON CRUCIBLE

A MAGAZINE FOR THE MILLMAN

VOL. III.

DECEMBER 15, 1914

NO. 11

EDITORIAL CHAT HOLIDAYS

THE lumber industry throughout its many branches—in the lumber camps and in the mills, is usually too busy to pay much attention to holidays. But one day which is always recognized and which therefore takes on additional significance is Christmas Day. Unlike other holidays it has a world-wide celebration. For more than nineteen centuries this day has been celebrated in all Christian countries. Now when over half the world is at war, the principles for which this day stands—the standards which it suggests for man's duty and conduct toward his fellow man should receive, if only briefly, our serious consideration.

So much for the serious side of Christmas. The aspect of the day which all of us enjoy contemplating, is that which has to do with gifts for young and old, with houses decorated with brilliant holly and fragrant pine branches. Homes ring with the happy shouts of children; tables groan with the weight of roast turkey, pies and all the other trimmings which custom decrees for the proper enjoyment of the day.

It is the day of all the year devoted to the renewing of family ties, the reunion of friends, the exchange of hospitalities. If we had the magic carpet of Bagdad which would whisk its owner to any part of the world in the twinkling of an eye, we would like nothing better than to visit the home of each of our readers on Christmas Day and offer our greetings in person. But, as the days of such magic are past we will have to entrust our message to the **CRUCIBLE** to deliver into your hands. **DISSTON'S** Best Wishes for a Merry Christmas and a Happy and Prosperous New Year to each and all of our many friends.

*Quality
Sells*

THE FILE

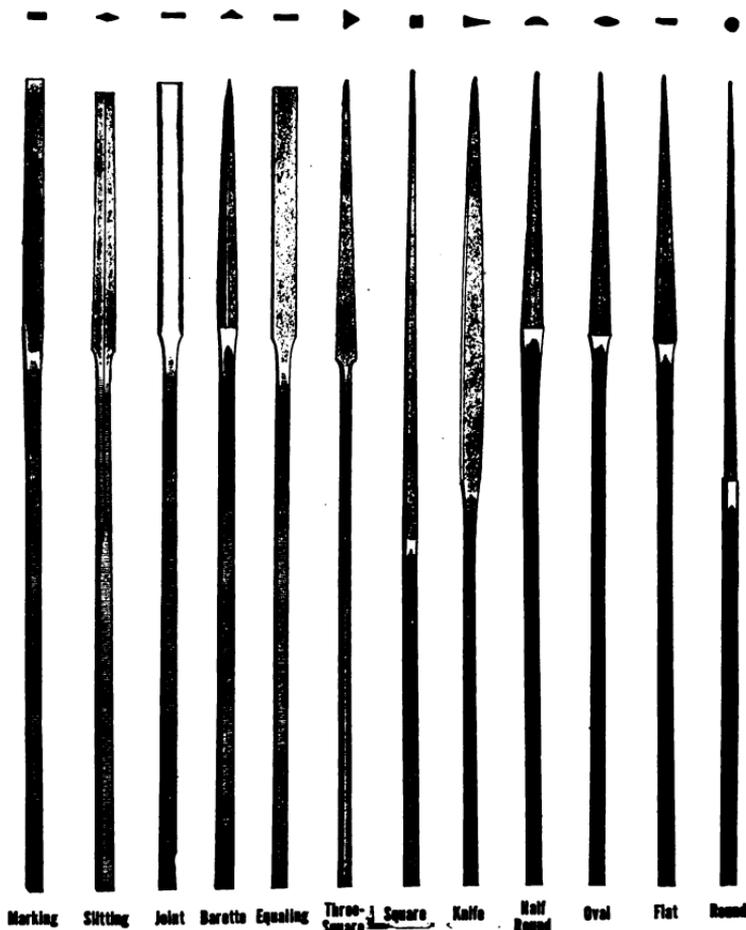
ITS HISTORY AND MAKING

PART EIGHTEEN

FOR sharpening Gin Saws, and Beet Sugar or Shredder Knives, a special form of Circular File is made, which fits on a shaft and revolves like a circular saw. A file of this kind is specially made for the silver manufacturing branch of the Oneida Community by HENRY DISSTON & SONS. The handles

of many silver articles are made in halves and then fitted together. These circular files are used for trimming and smoothing the edges so that a perfect joint may be obtained.

This brings to a close the story of the file from the time when history first recognized its existence, down to



ESCAPEMENT FILES

THE DISSTON CRUCIBLE

THREE SQUARE



CANT



HALF ROUND BLUNT



ROUND BLUNT



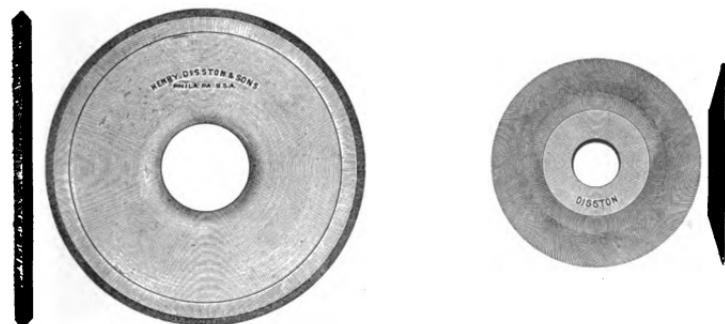
MILL BLUNT.



THREE-SQUARE BLUNT



MACHINIST'S SCRAPERS



CIRCULAR FILE

GIN SAW FILE

modern times when its use has become well nigh indispensable to almost every form of manufacturing business. Although many foreign countries still send a quantity of files to this country, America long ago took the lead in their manufacture. In addition to using over 35,000 dozen files of their own manufacture in their shops annually,

HENRY DISSTON & SONS send enormous quantities of their files, not only all over this country and Canada, but to almost every foreign country. The continued high quality, efficiency and durability of DISSTON FILES have won for them first place in the World's demand.

(THE END)

FROM SMALL TOWN BARBER TO BIG TOWN LUMBERMAN

Told to C. P. McDONALD

SMALL in stature, delicate in health, I wasn't a youngster whose prospects in life were overbrilliant. When I saw the sturdy frames of many of my schoolmates and noted the friendly muscular bouts they went through almost every day, I shuddered. Why hadn't I been born a modern Hercules, of big frame, of powerful constitution, in order that I might have a fair chance to break even with the world?

Those were the thoughts that ever haunted me during my boyhood days in Buffalo. Young as I was, I looked ahead and turned my mind to the future.

When I was ten years old my father died, leaving my mother practically penniless. If father had lived, I haven't the least idea what I would be doing now. On the other hand, had mother been content to remain a widow I perhaps now would be in a line of endeavor to which I would not be adapted. Circumstances often mold a young man's career, and it is a foregone conclusion that they shaped my own. I might have turned my attention to the doing of heavier work than I was fitted for, thereby cutting my life short by several years.

But, even when a boy of tender years, I had ambitions and an amount of pluck and perseverance one would hardly expect to find in so small and frail a body. Once, I remember, I was kept home from the district school suffering from a severe attack of tonsillitis. My mother was worried and called in a doctor.

"He's a delicate little chap," the doctor said. "He ought to be kept out o' doors. When the time comes for him to go into the world and make a living he ought to find employment at something that will keep him in the open."

The time did come, of course, and I remembered the doctor's injunction to my mother. I did not, however, act upon the advice at once, for I felt I needed a little capital with which to

work. I was literally shoved out into the world long before I expected to be. You see, mother remarried. My stepfather was a good man, but he had no sympathy for a youngster who wasn't strong and athletic. A big rawboned man himself, he could not tolerate weakness in others, and soon after his marriage to my mother he took me from school and made me his assistant in a small live stock business. The work proved too strenuous for me. Prodding cattle far into the night, feeding a hundred head every day, including Sunday, and doing heavy roustabout work did not agree with me. I felt I was unequal to the task and I frankly told my stepfather so.

"You'll get over your weakness some day," he declared, "and thank me for developing you. Why, when I was your age——"

That always was his argument. What he did, according to his way of telling it, would take the strength of a giant. He followed a plow when he was hardly able to walk, and cut the winter's supply of firewood when he was six. These and other impossible feats he expected of me. I rebelled. The outcome of my rebellion was that I received a severe chastising and was given the alternative of doing what I was told to do or getting out and hustling for myself. I chose the latter course. That choice perhaps is responsible for my becoming sole owner of one of the representative lumber establishments in a town I will call Duluth because that isn't the town. Of this, however, more later.

At the time my stepfather and I agreed to disagree I was thirteen years old. Mother was almost hysterical and her husband was adamant. Mother felt that I was not physically equipped to fight a battle in a world of which I knew so little. My stepfather, at the last moment, showed me he was not entirely heartless. He called me aside.

"Eddie," he began, "it's a big world you're going up against and you'll find the sledding pretty tough going on the

THE DISSTON CRUCIBLE

high spots. You've chosen this course, however, and I am not trying to dissuade you, for it would be useless. You've got a will of your own. You're young, and, I believe, ambitious. Perhaps in leaving in this way you will make a man of yourself and some day become an honored and respected citizen. Here's all I can spare right now, but if you get up against it and need assistance drop me a line and I'll do what I can for you. Good-bye, and God be with you."

He pressed five new crinkly five-dollar bills into my palm. It was a fortune in those days. I thanked him and we parted.

I had no objective point in view, but I faced toward Pennsylvania. It was a beautiful late spring morning when I left home, and I reveled in the open. It was not my intention to spend my money for railroad fare, inasmuch as I had nowhere in particular to go. My few personal belongings were not heavy, and I threw them in a bundle over my shoulder as I hiked merrily southward. Somehow there was a song in my heart, a song that spoke of peace, of pride, of fields to conquer. Despite my ill health and my frailness, I had confidence in myself and my ability some day to make good. It was bred in my bones, I guess, for at thirteen I trudged along on the highways and byways of Maryland and Pennsylvania with a confidence as supreme and a determination as keen as any matured man ever possessed.

Naturally, I felt keenly the absence of my mother's guiding hand, but I knew when I had found my Eldorado—"made my pile"—I could go back to her knowing an added pride on her part would be my reward. So I walked out of Buffalo with no qualms of conscience. Bright days gave me a zest for life, my appetite grew strong for conflict. I would, I told myself in my youthfulness, come out ahead, with the banners of success waving defiance to the universe.

I've often heard young men say that, given the opportunity, they would become successful men. Generally these same young men will sit around and wait for opportunity to knock. I took

the contrary view. Instead of waiting for opportunity, go dig her out and manacle her with the irons of determination. Hold her an unwilling captive until she yields of her bounty. She won't listen to reason, but she will succumb to force. It took me a long while to figure out this life problem, but that's about all I had to do while plodding through the meshes of parts of two states.

My first night out I slept in an open field. It was a balmy night with just a tinge of cold. I wasn't used to it, and I remember I shivered myself to sleep. I awoke with a start, the sun creeping over the horizon, my clothes sodden with dew. Mother would have been worried to death had she known it. I arose, undressed, and plunged into a small lake half a mile further on. My clothes, spread to the sun, were dried when I came from my plunge.

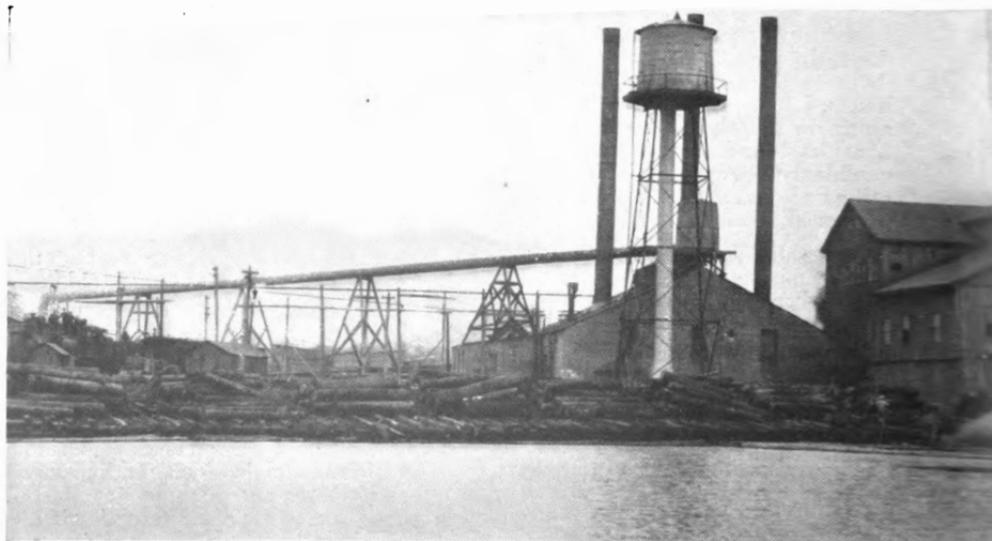
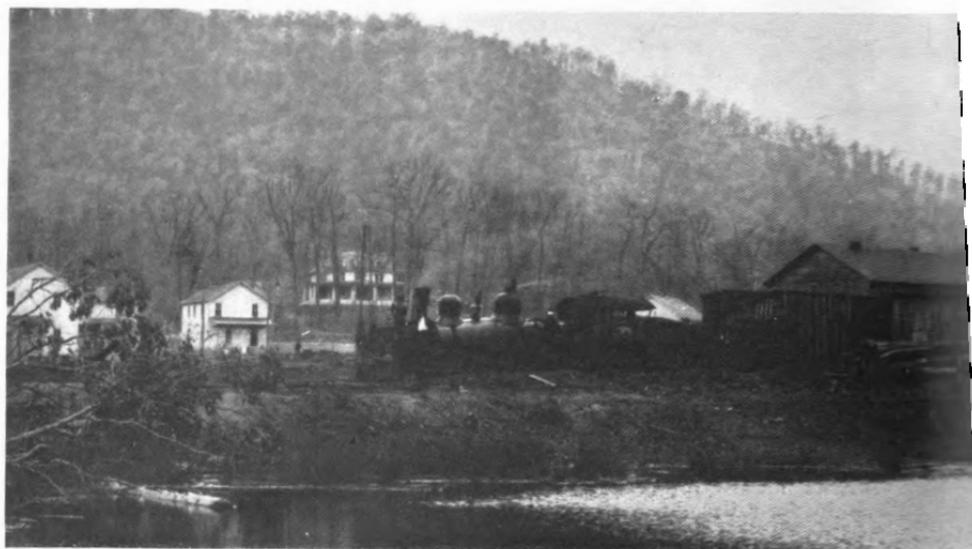
I was hungry, more so than I ever had been in my life. I slung my bundle over my shoulder and trudged on. I came to a farm house. A kindly faced woman greeted me at the door. I asked for breakfast with all the confidence of youth, volunteering to do whatever work I could in return for the repast.

She accused me of running away from home, but I frankly told her the principal reason for my exile. She fed me, telling me there wasn't a thing in the world I could do for her, and when I left her she wrapped up a big parcel of food and handed it to me. I got her name—Mrs. Jeremiah Waldron—and jotted it down in a little memorandum book. "I'll remember you," I told her.

"They all say that," she returned smilingly. "Good-bye, boy. Good luck."

Nobody should find fault with the world and its people. I learned in those days of tramping to success that it's filled with Mrs. Jeremiah Waldrons and with Jeremiahs, too. Perhaps my small physique and my apparent illness reached the hearts of those with whom I came in contact. Whatever it was, I do not at this time attempt to analyze, but I do know I owe the world and those within it a debt which I always shall be unable to pay in full measure.

(To be Continued)



MILL OF THE MEADOW RIVER LUMB



COMPANY, RAINELLE, WEST VIRGINIA

THE DISSTON CRUCIBLE



Mill and Logging Operations of the Cotton States Lumber Company



RESCUING A DISSTON SAW

SOME time ago we received a letter from Mr. C. E. Barrett of Guatemala, C. A., which related his experiences in saving a Disston chisel tooth saw from the scrap heap which it had almost reached as a result of the abuse it had received. It looked like a hopeless case, but Mr. Barrett, with the aid of a Disston Lumberman Handbook, turned the trick. The story which we give below in Mr. Barrett's own words, will be of interest to every man who has to do with the care and running of saws.

"I am not in the habit of writing unsolicited testimonials, but I am strongly moved to return thanks for the Disston Lumberman Handbook, a copy of which I own.

"I am not a dyed in the wool saw mill man, but a machinist. As a machinist in the tropics has sometimes to tackle anything in the way of machinery it fell to my lot this spring to tackle a saw mill in an out of the way neck of the woods.

"A 50-inch chisel-tooth saw, 34 teeth, (3-8-5-16-inch), carriage to saw up to 22 feet long, engine about 15 H. P. and boiler about 20 H. P. comprised the outfit.

"The saw had been working, I was told, up to within two months of the time I took hold of it. The 50-inch saw itself has been in use some eight years, is one of your make, and has been subjected to all kinds of abuse such as driving in 2-8 teeth with No. 3 holders, by means of a Conqueror Swage, which the man who tried the trick managed to break in the process. The saw was fearfully and wonderfully collar burnt, let down so that the rim shook like an old shirt on a clothes line in the wind, buckled, dished, set so she led out of the cut by a full 1-16-in. instead of into it, the mandrel sprung a full $\frac{1}{8}$ -inch (how did they do that with a $3\frac{1}{4}$ -inch shaft?) and out of level $\frac{1}{4}$ -inch. Naturally the saw would be out of center with sprung mandrel, end motion in mandrel boxes, carriage track neither level nor straight by a jugful, side or lateral motion both between carriage wheels

and track and in carriage boxes. The carriage had play enough to move $\frac{3}{8}$ -in. in or away from the saw. At some points on the track the carriage bore on only three wheels out of ten, but, and here comes the wonder, that saw cut lumber.

"She did not cut it smooth or straight and it took the last ounce of 15 H. P. to drive her through the cut even though her feed had been cut down to a scant $\frac{3}{4}$ -inch, but *she cut it*.

"So I went into session with the saw and your Lumberman Handbook.

"It took three days of close attention and study to hammer the saw into tension and take out the lumps. The rest of the necessary work was easy enough.

"The saw now gets away with 3,500 feet or more of fairly hard lumber in the day. I find the best feeds to be $1\frac{1}{4}$ -inch and $1\frac{3}{4}$ -inch, according to hardness of the kind of wood sawed. She saws straight enough almost for micrometer measurements at a speed of 600 R. P. M.

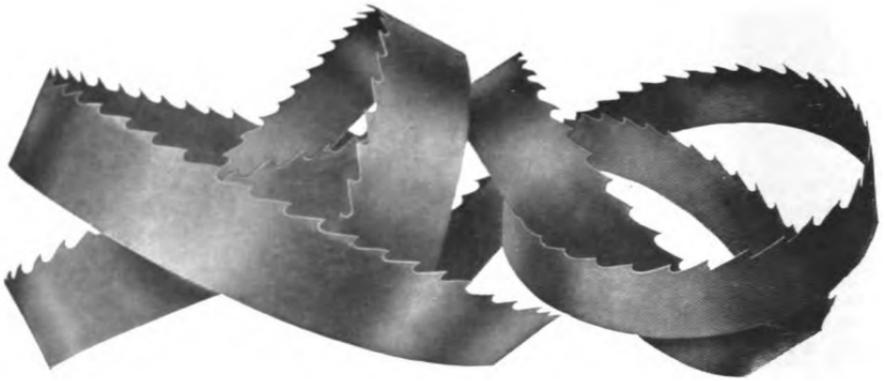
"After eight years abuse I doubt if any saw could be made to beat this record, and there is no telling how many years more she will sing through the cuts if treated with any measure of kindness."

COTTON STATES LUMBER COMPANY

One of the busiest mills in the South is that of the Cotton States Lumber Co., photographs of whose mill and logging operations appear on the opposite page.

This plant consists of one double cutting band mill, one single cutting band mill and a large gang. Disston Saws have been used here exclusively for many years, always with excellent results.

The capacity of the mill is 150,000 feet per day and the average daily output usually equals this figure. The lower picture gives a good idea of the size and character of the timber on the holdings of the Cotton States Company. They have a logging railroad about twenty miles long with first class equipment in every respect.



PROOF OF TOUGHNESS

Smedley Brothers, of Frankford, Philadelphia, have one band saw of our make, $3\frac{3}{4}$ -inches wide, 19-gauge, $1\frac{1}{4}$ -inch space, that has met with an accident that put it out of commission.

They were cutting 1-inch boards of soft stock on a Fay & Egan's machine which was running at highest speed and feed, and doing it nicely. A hurried order came in for some 4-inch by 6-inch yellow pine which they undertook to cut without changing speed or feed of the machine, with the result that the saw ran off the wheels, became all twisted and turned beyond repair. It resembles a puzzle now, but without the slightest indication of a crack, or loss of corners of the teeth.

This confirms the faith which this firm has always had in DISSTON products for they are equipped with circular saws, wide and narrow band saws, planer and jointer knives, moulding blanks, files, and even planer bolts and washers—all of the DISSTON make.

We are enabled to show a picture of this saw through the courtesy of Mr. Hogan, the Superintendent.

DOWN TO DATE

JONES—I saw a brand-new contortion act yesterday.

GREEN—What was it?

JONES—A lady in a hobble skirt trying to listen to her ankle watch.—*Judge.*

A FREAK SHINGLE

Trees frequently take on peculiar and fantastic shapes while growing, but here is a piece of wood which apparently took on the strange lump appearing in the photograph during its manufacture into a shingle.

Originally the knob rose evenly on all sides, but some one later has dressed two sides with a knife. This shingle was picked up from a pile, so no one knows just when it was made. The saw was doing good work at the time, and had no defects, which makes it hard to account for the peculiar formation described. The shingle and the facts connected with it were sent us by Mr. Dave Jenkins of the Disston Branch at Seattle.



Perhaps some of our readers can give an explanation of this peculiar phenomenon. If so we would be very glad to hear it.

THE UNANIMOUS VIEW

Harold Bell Wright, the novelist, was talking in Chicago about genius.

"There are a hundred different opinions as to what genius is," said Mr. Wright, "but all authorities are agreed that it's absolutely unsafe to lend him money."—*St. Louis Lumberman.*

THE DISSTON CRUCIBLE

CAUSES OF "BULL NOSE" LUMBER

ONE of the difficulties that the sawyer has to meet with at times, is the tendency of his saw to make what is known as "Bull Nose" lumber. This term is applied to lumber of irregular thickness on one end, which has received a curved or nose-shaped cut.

The principal cause of this defect is the saw's leading out of the log. This may come from the adjustment of the band mill. Nearly all filers train the saw on the mill with a tilt. They use the tilt only on the top wheel and set the lower wheel perfectly level, which causes one wheel to buck against the other. The top wheel is trying to carry the saw off the wheels and the bottom wheel to bring it back on. Under such conditions the heaviest strain is on the back edge of the saw on the top wheel and on the front edge of the saw on the bottom wheel, which causes the saw to stand dished. Trying a straight edge on the saw between the guides will show whether this is the case or not.

When set up in this way, the saw will lead out of the log when beginning the cut and will straighten out again as soon as the full width of the blade goes in, making the peculiar nose-shaped cut at the end.

Other possible reasons for "bull nose" cuts may be found in the saws being out of level or the teeth not being fitted square.

A QUIET TOWN

There was a big boom in a little town in one of the Western States. After a while the boom blew up and people who had hurried to get in on the good thing began to drift away. Years later one of these former residents happened to meet a native of the town and asked him how things were in the old place. "It's something fierce," was the reply, "and getting worse all the time. Say, I'll tell you how far that town has gone back. A man dropped dead last Sunday on Main Street, right in front of the post-office—and they never discovered his body until Thursday.—*St. Louis Lumberman.*

CORRESPONDENCE

MESSRS. HENRY DISSTON & SONS,
also fellow Millmen:

I have been sawing about fifteen years off and on and in that time I have met with some queer things in the shape of sawmills. Here is one. I was a young beginner, but thought I had pretty good judgment. At Gowanda, N. Y., I met a man who wanted a sawyer. We went to the mill, to look it over. He had a large stock of logs on the roar ways and in the yards. We went into the mill and looked at the saw and then he said, "I sent for a new saw, it will be here in a day or two." He said that the saw that was on the arbor was no good. I saw it was a 9-gauge HENRY DISSTON, 60-inches. I looked it over and asked him what was the matter. He said it is no good; you ought to see that filing. I said "Fire up your mill, Mr. Bell. If I can't saw lumber I won't charge you anything and we will wait for the new saw." I sat down and swaged and filed the saw. It took one hour. We started the engine, and the saw did not stand up. I then ran the engine a little faster and the old saw began to stand straight. I rolled on a big Waffle Log and Mr. Bell laughed. I said, "What are you laughing at." He said, "You will soon see that old saw will break over the mill." I started that saw and you never saw a saw make better lumber in your life. If any one wants a good saw they better get a DISSTON, for they are the only standard saws that live up to their work and guarantee. I have sawed with a good many different makes of saws but none can compare with HENRY DISSTON & SONS. I recommend them to all who wish a good saw. I can't say enough in their favor.

Respectfully,

WELLS E. CASLER.

POSITION WANTED

By a first-class band resaw sawyer and matcher man. Ten years experience in this line. Sober and can give best of references. Will give prompt attention.—Address C. P. Laberdee, 1107 North St., Syracuse, N. Y.

THE DISSTON CRUCIBLE



ONE OF THE MIDDLE WEST'S REPRESENTATIVE MILLS

WHAT is said to be the largest exclusive walnut mill in the country is that of the East St. Louis Walnut Co., located at East St. Louis, Illinois. The photograph shows the mill and a shipment of logs in process of unloading. This mill deals in walnut only, handling over six hundred cars of logs each year and exporting logs to all parts of the world. Mr. W. L. Fletcher is Secretary of the Company and General Manager of the mill. DISSTON BAND SAWS are used here, giving excellent results in cutting up the walnut logs.

An interesting and unique feature of this plant is a herd of over one hundred goats which browse around the log piles and yards during the summer months. A stranger visiting the place would think this a remarkable sight and would wonder what part the goats could possibly play in the activities of the mill until enlightened by Mr. Fletcher as to their important duties. As a matter of fact, the goats are kept as official yard cleaners. Mr. Fletcher purchases them from the East St.

Louis Stock Yards every spring and turns them loose around the plant. They keep down the weeds and keep the logs clean. At the end of the summer they are fat and in fine condition. They are then sold back to the stock yards.

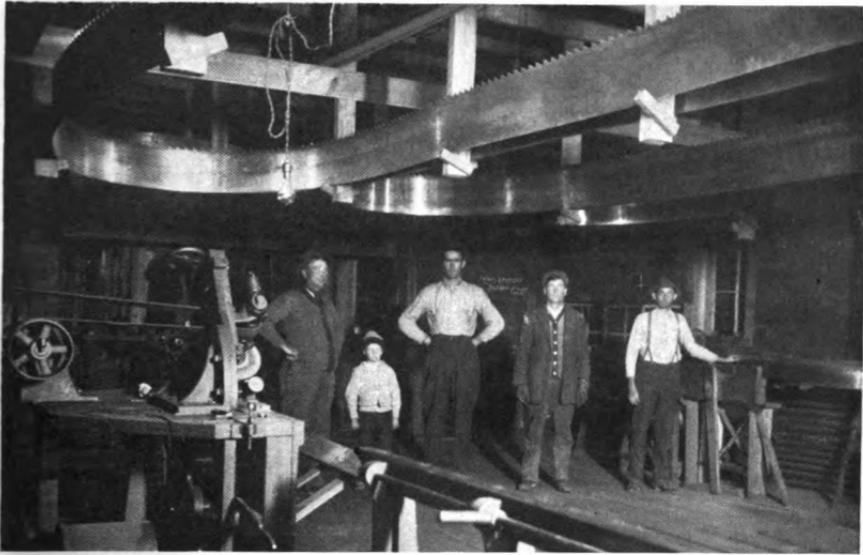
While on duty during the summer the goats are not at all partial as to what they feed on. Tin cans, weeds, or newspapers all look good to them. There is only one kind of fodder that they steer clear of and that is the pile of old, worn out DISSTON SAWS behind the mill. They show a profound respect for these, having learned by experience that they are too tough, even for goats.

SUFFICIENT

"Do you think you have sufficient counsel for my boy?"

"Yes; we have a spread-eagle orator, a sob specialist, an insanity expert and a little cuss who knows the law, if we need any law."—*Louisville Courier-Journal*.

THE DISSTON CRUCIBLE



GIDEON & ANDERSON LUMBER & MERCANTILE CO.

THE photograph above shows the neat and well appointed filing room of the Gideon & Anderson Lumber & Mercantile Co., of Gideon, Missouri. This concern operates both a band and a circular mill using Disston Saws. Mr. Luther Thomas, band Sawyer, who is a man of some twelve years' experience in operating saws, is frank in saying that he likes Disston Saws best of all he has used. He says they show better quality, stand more and hold up better than other makes that he has tried.

John King, filer on the band mill and Dave Minor on the circular are the men depended upon to keep the saws in shape and cutting to their full capacity.

COMPLIMENTS FROM AUSTRALIA

Bungey, Coonanbarra Rd.,
Wahroonga.

HENRY DISSTON & SONS,
Gentlemen:

It is now some fifteen months since you informed me that you were making a band saw steel that for tension holding capabilities far excelled any other steel used by your firm previously. Your

product being so well known by me and having at times been compelled to put it to some severe test, as far as tension was concerned, can you wonder if I now confess to having my doubts, at that time, as to the correctness of your statement; but now I have been through the experience with three 12-inch bands supplied by you and made with this superior steel as before mentioned, and so I now make haste to apologize for the doubt that you did not even know I entertained.

They are beauties and no mistake. I have struck iron with them several times, cut a rifle barrel with one and did very little damage except for a few teeth. Tension upset, I hear you ask; not much. That tension is like a running stream; it goes on forever. Don't tell my employer that I say so, but those saws save me lots of work. When trouble comes I send down the reliables and that gives me ample time to fix things up again. The same can be said of the 7-inch saws supplied last. They are great, no cracks, no trouble anywhere and swage lovely. Have run 12-inch eight months and 7-inch eighteen months continuously.

Very kind regards from

Yours very sincerely,

GEO. J. DANE.

THE DISSTON CRUCIBLE

WHO'S WHO IN THE SAW WORLD



SYDNEY W. BATTY

MANY Disston men who have made good and are now filling positions of trust and responsibility have practically grown up in the service of the Company. One of the well-known and highly esteemed men of this group is Sydney W. Batty, whose association with the Disston Company has covered a period of more than twenty-three years.

Starting as an office boy, back in 1891, "Syd.," then a lad of fourteen, was rapidly promoted through the grades of ink-well filler, messenger, etc., to the position of order clerk in the hardware department. Here he remained until 1898 when he entered the employ of William Batty & Son who operated a saw shop at Manistee, Michigan. In this position Batty had considerable shop experience and at the same time was actively engaged in selling Disston Band Saws, Files, Knives, and other products.

Early in 1900, however, Mr. Batty returned to Philadelphia and again entered the Disston employ, this time in the factory and mill goods depart-

ment. After three years' work in the manufacturing departments of this company he went to Norfolk, Va. Making this his headquarters, Mr. Batty traveled through eastern Virginia and the Carolinas selling the Disston Mill Goods line. New York and Pennsylvania was the next territory assigned him after a year's work in the South. During the next four or five years, Mr. Batty traveled this section with great success, making many friends and securing many new customers for Disston Goods.

In 1908, Mr. Batty temporarily suspended his selling activities and spent a year in the mill goods and knife departments at the Philadelphia works.

At this time the New England and Eastern Canadian fields presented an excellent opportunity for the development of the Disston Hardware line. Mr. Batty was assigned to this territory and covered it with marked success up to the time of his promotion to the management of the San Francisco Branch of HENRY DISSTON & SONS, which position he is now filling.

Mr. Batty's advancement has been steady and consistent. His straightforward business methods and agreeable personality have made many friends and customers for Disston goods, all of whom unite in wishing him a continuation of his success.

MEADOW RIVER LUMBER CO.

The center pages of this issue show a panoramic view of the Meadow River Lumber Company, located at Rainelle, West Virginia. This mill is considered one of the most modern and best equipped plants in this territory. As in a majority of the mills where quality and quantity of output are kept at a high point, Disston Saws are used here with great success.

The Meadow River plant consists of three band mills and a very extensive, hardwood flooring mill and planing mill. Mr. John Raine is General Manager, Mr. Howard Gray, Mill Superintendent and Messrs. Will Gray and Mott are filers. The successful work of these men has contributed largely toward the enviable reputation enjoyed by the Meadow River Company.

THE DISSTON CRUCIBLE

Price 10¢ per copy

\$1.00 yearly in advance

TABLE OF CONTENTS

	PAGE		PAGE
A BIT OF VIRGIN FOREST IN ILLINOIS <i>(Frontispiece)</i>		SOME HINTS FROM AN AUSTRALIAN FILER	186
EDITORIAL CHAT	179	SAWMILLS IN HOLLAND	188-189
FROM SMALL TOWN BARBER TO BIG TOWN LUMBERMAN	180	GREENHEART	189
A MODERN TRACTION SAWING OUTFIT	182	A VIRGINIA SAWMILL GROUP	190
A NOVEL ACCIDENT	183	A SIXTY-FIVE YEAR OLD SAW	191
WHITTAKER BROS., Australia	184-185	FOUR OF NEW ENGLAND'S FINEST	192



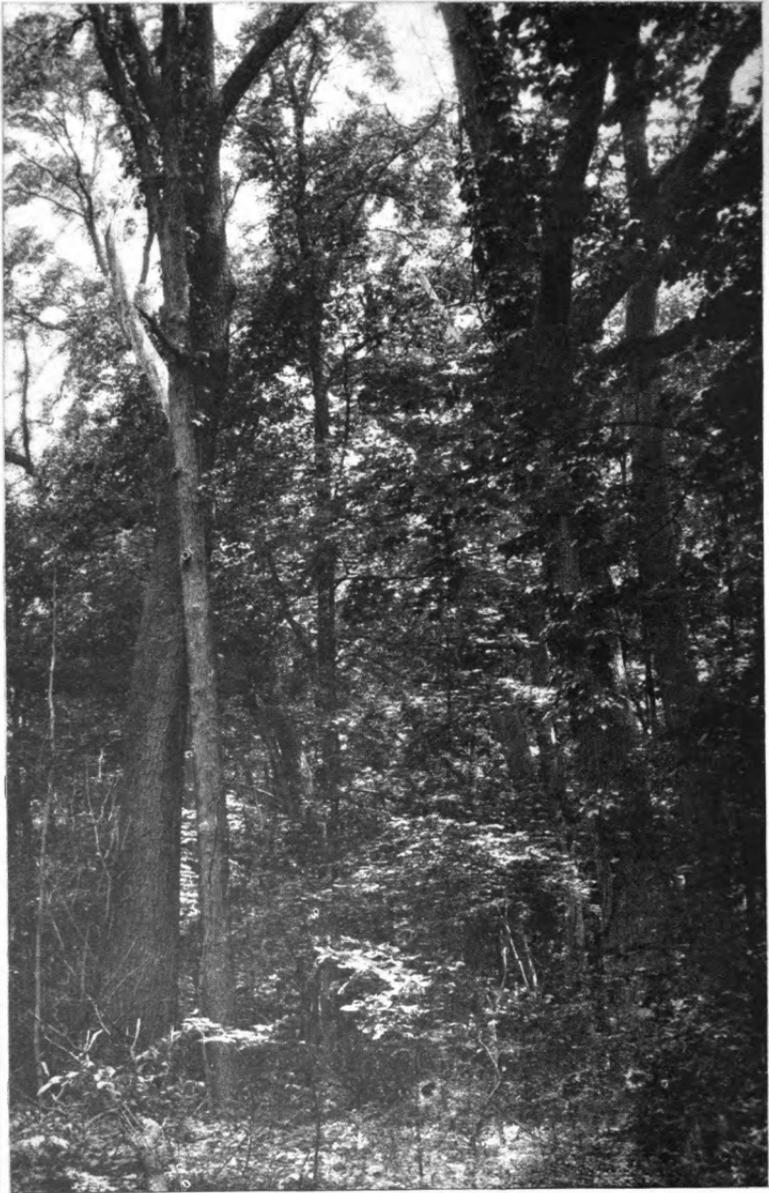
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Keystone Saw, Tool, Steel, and File Works
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BRANCH HOUSES :

Chicago, Ill. Boston, Mass. Cincinnati, Ohio. Seattle, Wash. Portland, Oregon.
New Orleans, La. Memphis, Tenn. San Francisco, Cal. Sydney, Aus. Vancouver, B. C.
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A BIT OF VIRGIN FOREST IN ILLINOIS

THE DISSTON CRUCIBLE

A MAGAZINE FOR THE MILLMAN

VOL. III.

JANUARY 15, 1915

NO. 12

EDITORIAL CHAT

1840 - 1915

THE year 1915 marks the seventy-fifth anniversary of the Disston business. In these seventy-five years there has been built up an enormous manufacturing and selling organization which has placed Disston products in every portion of the civilized world. The basis of this phenomenal growth has been, from the first, quality.

Unlike many big businesses of today which have sprung into being almost over-night, the firm of HENRY DISSTON & SONS had its origin in a small and humble way.

Back in 1840, HENRY DISSTON, then a young saw maker, received some tools and steel in lieu of money due him from his employers, William and Charles Johnson, when they failed and closed their saw making plant. With this equipment HENRY DISSTON laid the foundation of what was destined to become the greatest saw and tool making plant in the world. The quality of the saws turned out by this young man soon gained him a reputation and the business increased steadily. Several small concerns starting about this time were bought out and the plant still further extended.

In 1855 HENRY DISSTON made a departure from the custom of securing saw-steel from England and established a crucible steel melting plant of his own. This was followed in a few years by a rolling mill which made it possible for the Disston Works to conduct every operation in the manufacture of saws within their own walls. This marked a new era in saw making in the United States. The market which had heretofore been supplied largely from abroad now turned to saws of American make. The improvements and new designs developed by the Disston factory, as well as the high quality of the goods, not only earned a large share of the American demand, but opened many foreign markets as well.

As time has gone on, HENRY DISSTON'S sons and grandsons have followed him in the management of this ever growing enterprise. The first small shop has long since been replaced by long rows of buildings filled with the most modern equipment, and humming with the activities of hundreds of workers, until the present gigantic plant comprises fifty-eight buildings, covering fifty acres of ground and employing 3,600 men.

But the ideals upon which HENRY DISSTON built this business are today upheld with the same firmness of purpose as in 1840. Now as always the watch word is Quality.

*Quality
Sells*

FROM SMALL TOWN BARBER TO BIG TOWN LUMBERMAN

Told to C. P. McDONALD

PART TWO

I'LL not attempt to chronicle, day by day, the vicissitudes of my journeyings. Sometimes I worked for two or three hours, earning my bread and butter, and sometimes I got it without services. In such instances I offered to pay for my food, but never was a penny accepted.

One wonderful day in early June I came upon a restful little Pennsylvania town of 1,500 souls, which I shall call Drummond. I walked through the main street, tired, hungry, dilapidated. I passed a barber shop, in the window of which was a sign, "Porter Wanted." I entered the place and asked for the job temporarily.

"Little small for such work," said the good natured German who owned the place. "Give you a crack at it, though, if you really want to try it. Ain't much money in it."

I took it. And so for nine years ended my wanderings. I did not find the work exacting or heavy, nor did I find it to my liking. But way back in my brain something told me to hang on and keep an eye peeled for better things. When you're broke you can't stand out for the better things and get anywhere. The little things, the minor jobs, all are rungs to the ladder that leads to achievement.

The \$25.00 which my stepfather had given me was almost intact. I had spent little of it. At the end of my first week's employment as a barber shop porter I put a few pennies to the bulk of my fortune and deposited it in a bank.

I had worked several months for Mueller. He took an interest in me. One day he asked me if I would like to learn the barber trade. I told him I would. He taught me, I applied myself, and when, a few months later, his assistant went west I assumed management of the second chair.

In a small town tips come few and far between and the percentage a man makes is quite a little less than that enjoyed by the big city tonsorial artist. But living expenses, on the other hand, are comparatively less, and by dint of

close economy I managed to put away the greater part of my income. Thus, the foundation of capital which I would need in future years was laid, and within six years—I then was nineteen—a goodly portion of the superstructure was built.

Mueller was getting along in years. He had a farm which he and his brother worked, and it was a paying proposition. He wanted to retire from the barber business and devote his undivided attention to the development of his land. His really was the only shop in town that made money. I bought him out at a ridiculously low figure, and three years later—having spent nine years in Drummond—I sold out. I had five thousand cold dollars tucked away in the bank. Had the porter job been one beneath my dignity I probably wouldn't have had a cent. That's where most young men of the present generation fall down. They wait for the big job, the good paying one, to come along. Nine times in ten it doesn't show up, and before he realizes it he has wasted several valuable years in idleness.

At twenty-two I married the daughter of Judge Hunting of Drummond. Georgia's father had, in years gone by, been a judge, but at the time of my marriage to his daughter he was a combination justice and farmer. When not practicing law, he was tilling the soil. He did not oppose our marriage; he looked upon me as a man of promise.

Shortly after the wedding my wife and I traveled west. Then we journeyed north. I left her at the home of an uncle—her father's brother—and went into the woods. I plunged in gold watches to the extent of \$1,000.00. My wife's uncle was a retail jeweler in a modest way, and it was from him that I got the tip that watches could be sold to the woodsmen who spent their lives in the lumber camps. From him also I got many pointers on the composition of jewelry, prices, and so forth. When I set out for the North

Woods I knew quite a little about the jewelry business.

The watches I took with me bore the imprint of a manufacturer whose name stood for the best that money and skill could produce. These watches cost me different sums, according to the number of jewels with which they were set. A seven jewel movement cost me \$3.50, a fifteen jewel, \$8.00 and a seventeen jewel \$12.50. These I sold for \$10.00, \$20.00 and \$30.00, respectively.

I might add in passing that my uncle's tip was a live one. I disposed of my thousand dollars' worth of timepieces in less than two weeks. Three times I made the journey to the lumber camps, selling on each trip a thousand dollars' worth of watches that netted me between \$6,000.00 and \$7,000.00.

I took my wife with me on the third trip. After selling my consignment of "tickers," we roughed it for six months. Truth to tell, I needed relaxation. As the years rolled on my health had gradually improved, due no doubt to my persistence in taking daily out of door exercise. My chest deepened, my eyes grew brighter, my muscles hardened, my appetite increased. I was at last physically fit to tackle any job under the sun.

This half year in the North Woods was not wasted, you may rest assured of that. A new fever inoculated itself into my being—it is a legend that this disease gets into the veins of every young man who spends a few weeks in the leafy paradise of the North and whose blood is red—the consuming ambition to become a "lumber baron."

The camp boss listened to my appeal. He, too, once had had that same ambition, he told me, but somehow or other he had "just stuck around camp and got nowhere." He was restless, he said, when he got away from what he called God's country, and no longer could smell the damp tang of sawdust and hear the thunder crashings of a felled forest monarch. There was no sweeter music, he swore, than the steel teeth of a rip saw tearing through the vitals of a prize poplar or elm. Every time he went "down the river" he vowed never to go back to lumbering, but—Lord bless you!—the call of the pines was irresistible. Twenty-five

years in the woods was a powerful long time, he declared, and he feared that, unless he got out of it soon, it would become a habit.

It was from this man that I learned the rudiments of the lumber business. Through him I became expert in judging quality. Due to his influence, I met a number of lumber buyers who furnished me with a valuable fund of figures, such as cost of production, number of men necessary for a given quantity of a certain kind of lumber, when not to sell and to whom to dispose of my output.

It took many, many months to acquire this knowledge, for I started at the bottom, worked as a lumber jack, filed saws, sharpened axes, figured estimates, kept tallies and books, carried grub for the crews, washed dishes. Menial labor, you may think, but when a fellow starts in to learn a business he should scruple at nothing which, though apparently insignificant, is a certain factor to a perfectly finished whole. I absorbed everything in the way of data that would assure my success in the future.

One day I went back to my wife's uncle. I told him of my plans and of my hopes. I had a few thousand dollars, not quite enough to embark in the lumber business on the scale I contemplated, but I felt sure if he would give me the necessary lift I would be successful in the undertaking. My wife had, I afterwards learned, told him of my early struggles. He said:

"Boy, there's quite a difference in being an accomplished barber and a successful lumber baron. But derved if I don't believe you'll make good at whatever you tackle. Let me know exactly how much will turn the trick and I'll back you to the limit."

He did, too, much to his ultimate satisfaction, for a few years later I was on top. I had, through competitive bidding, acquired a large tract of black forest walnut, ash, and white pine, which I held on to, pending a rising market. It took me over a year to clear this tract, and I found a ready sale for the walnut among the Grand Rapids furniture manufacturers, who contracted for almost the entire output.

(Continued on Page 191)



A MODERN TRACTION SAWING
OUTFIT

Mahomet, the prophet, is credited with the saying, "If the mountain will not come to Mahomet, Mahomet will go to the mountain."

So it is with the traction sawing outfit pictured above. If there is a sawing job which will not come to the mill, the mill will get under way and go to the job.

R. V. Crissman and his brother of St. Clairsville, Pa., are the enterprising owners of this well equipped rig and are making a good reputation for themselves by the work they are doing in their vicinity. These boys are young in years, but pretty well seasoned in the sawmill business. One result of their experience is a deep-rooted belief in the merits of DISSTON SAWS, one of which shows plainly in the photograph of the Crissman Brother's outfit.

HABIT

DOCTOR—"I have to report, sir, that you are the father of triplets."

POLITICIAN—"Impossible! I'll demand a recount."—*Puck*

NO PLACE FOR MONKEYS

Here is a monkey wrench story, the source of which is unknown, but it is worth repeating. It is introduced as coming from the Pincher creek district. Two travelers were driving through that section and met with an accident to their buggy. One of the two went to a nearby shanty, the occupant of which happened to be a Swede, and asked if he had a monkey wrench. The astonished traveler received the following reply:

"No, Ay got a cattle ranch; my brother, Ole haf a horse ranch; Nel's Nelson haf a hog ranch ba de crick ofer, and a Yankee feller haf a sheep ranch but five miles down the road; but Ay bet no feller ban fool enough to start a monkey ranch in dose country."

KNEW WHEN TO STOP

"See here, waiter," exclaimed the indignant customer, "here's a piece of wood in my sausage!"

"Yes, sir," replied the waiter, "but I'm sure —er—"

"Sure nothing' I don't mind eating the dog, but I'm blowed if I'm going to eat the kennel, too."—*St. Louis Lumberman.*



A NOVEL ACCIDENT

It is not an infrequent occurrence in the mill for a saw to run into a piece of iron embedded in a log. It is always interesting, however, to note how the saw comes out of the encounter. The photograph above was received from the Streever Lumber Company of Ballston Spa, New York, and shows a horse shoe which was struck by a DISSTON inserted tooth saw. We give below Mr. Streever's letter in which he describes very interestingly the nature and result of the accident.

"Some time ago we returned a fifty-two inch inserted tooth saw to you for repairs and at that time stated we would send you photograph of the cause of the injury.

"We were surprised to receive the saw repaired to its full size and in perfect condition. The saw marks on the log show the direction saw was moving in when it struck the horse shoe which evidently had been hung over the limb years ago. The shoe was perfectly embedded at least three inches under the bark with no sign of any scar on the surface of the log. The saw first struck the horse shoe on the toe calk a glancing blow which hooked the edge of saw over in such a way that it was impossible to back up the carriage and was, therefore, neces-

sary to shut down the mill with the saw turning against one side of the horse shoe. At least a third of the side of the horse shoe was worn away by the teeth before the saw was stopped. We find the toe calk so hard that a file would not touch it.

"We think it quite remarkable that although the points were all torn out and most of the throats and the edge of the saw bent in places almost at right angles and the whole saw blade very much warped and out of shape that the injury to the saw was not greater. It was also surprising to us that the saw could be perfectly repaired without reducing its size. I might add that we have used four or five leading makes of inserted tooth circular saws, but at the present time are using only DISSTON which will be our future policy."

WHY NOT?

"Mother," asked Tommy, "is it correct to say that you 'water a horse' when he is thirsty?"

"Yes, my dear," said his mother.

"Well, then," said Tommy, picking up a saucer, "I'm going to milk the cat."

—*Ladies' Home Journal.*



1—Falling.

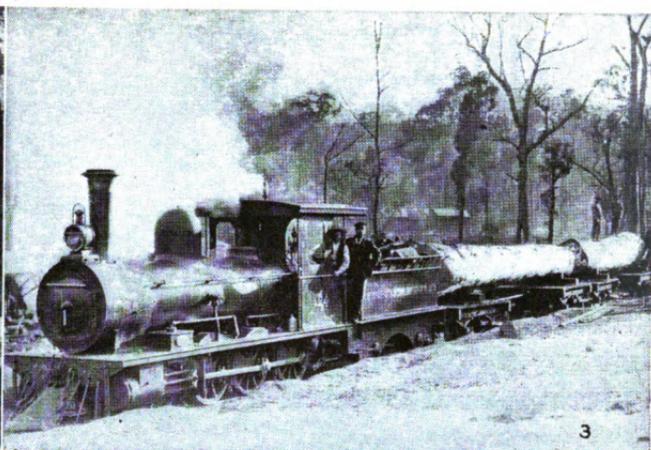
2—Log Hauling.

3—Bringing Logs to
the Mill.

4—Jarraah Mill.



VIEWS OF THE MILL AND LOGGING OPERATIONS
SUBIACO AND NORTH PERTH



5—Frame Sawing.

6 Sawn Timber.

7—Timber Yards and
Joinery Works,
Subiaco, W. A.

8—Angora Goats.

IONS OF MESSRS. WHITTAKER BROS. OF
SDALUP, AUSTRALIA.

SOME HINTS FROM AN AUSTRALIAN FILER

MELBOURNE, May 26th, 1914.

MESSRS. HENRY DISTON & SONS.
Philadelphia, Pa.

DEAR SIR:

I received your welcome letter of April 6th, and thank you for congratulations on being capable of taking band saws down to the extent in letter.

At the present time I'm still working your two saws. The engineer has not started the alterations to band mill or trued up the wheels.

The two 12-inch band saws of your manufacture have come down, one to $7\frac{3}{4}$ -inch and the other to $8\frac{1}{2}$ -inch. About two weeks past the widest of these saws met with an accident. The band would not stay on band wheels. I benched it. It had two nasty twists, tension pulled out and in a bad state generally. Having to roll and hammer this old saw more than usual would crystalize the steel as I find two center cracks one inch in length, another six inches from the braze in the gullet. The $7\frac{3}{4}$ -inch saw has one center crack one inch long and small one near the braze. Both these saws are still doing good work.

I expect to run these saws another two months as they have not started the alteration to mill or ground face of band wheels.

The mill is working constantly all the year. If these saws were not made of very high grade steel they could not stand the strain and bending on the band wheels without cracking up long ago.

I have thought since I got your letter you would consider I had great presumption to criticise the particular saw the way I did, knowing what a staff of practical men you must have in your employ.

I note what you say in regard to packing of band saws for shipment abroad. There is no doubt, putting six saws bent up in a small case, that the dumping about in transit would injure the saws considerably.

At the conclusion of your letter you invite me to make suggestions

that may be of any importance. There are many things for a filer to consider in fitting up band saws to get the longest life out of them. I start by putting the back in first about the same crown as the saws when sent from the factory. The reason is this; when a saw has worked and needs benching, the tension is pulled out far more on the tooth edge than on the back and rolling back in first enables you to roll the saw fairly well right across the saw. The back will not shift to any extent.

I then put in the tension and am as careful as possible not to put too much in places and have to take it out again. I think it is time well spent to roll light and gradually stretch your saw right across than try to do it with heavy rolling which must crystalize the steel far more than the light rolling.

After I have the tension evenly distributed all through the plate, put the saw on top of bench and level inside and finish on outside of saws, I generally find very little alteration in crown or tension. I suppose it is the usual way, but what I want to impress is not half do it as it will pay you well to make the saw as perfect as possible. I'm not an advocate of continually rolling and belting a saw with hammers every opportunity you have. It knocks the life out of them instead of putting life into the saws.

The next important part is to see that your swage just expands the tooth sufficient for the shaper to make good, strong, well-shaped corners on the teeth and don't pull the metal up too low, down in the front part of tooth.

It is the same with the sharpening machine. It must be in the best possible order so as to have every tooth ground uniformly that each one does its share of the cutting. After grinding I touch the points on the top of teeth lightly with a file. I think this puts a keener edge. Some filers assert there is no necessity to do so, but my

experience is the saw will cut lighter and be less liable to crack. When grinding be very particular not to blue the teeth at any time during the operation. In handling the band saws never let the braze be on bend as it is liable to spoil your braze. I have found without exception that the most serious cracks I ever had are caused through band wheels being out of line, but small cracks say from $\frac{1}{8}$ inch to $\frac{3}{8}$ inch deep don't trouble me in the least. Center punch both sides and they work out.

To give the saw every chance of a long life, have a careful sawyer who will not rush the saw in cut when entering. Keep guides in good order and it is most important to keep the saw and wheels clean from gum, etc. You can look for cracks very quickly if the band wheels are continually being fitted to keep saw in position through dirty saw or wheels.

The sawyer working your 12 inch saws is a good careful one and no matter what timber he cuts, the saw and wheels are always clean. He hardly touches the tilt from one year to another, bar any accident.

The band wheels should be perfectly flat on face and not go too long without grinding, also don't work saws too dull. There are many things for a filer to study, such as seeing that the track and carriage are in good order and in line with saw if it is a log band; also the feed rolls and set gear on a resaw. I think it is well for the filer to know as much as possible of the working of his saws on the mill as well as fitting them up in the filing room. There are plenty of bad sawyers as well as bad filers. A good combination to save cracks is "A good sawyer and filer combined."

I have not worked with the full swage on your 12 inch saws. When I first entered this employ, in deep cutting the sawyer always notified the engine driver and he had to open the engine out to get through cut. Since altering the tooth he does not know when we are cutting deep boards so it is easier on the fireman and engine.

The sawyer states they are the best saws he has worked so I have kept it on and think it must have helped in

keeping cracks out of the saws. It stands quite as fast feed and I don't think it is so dull after it runs but I swage and shape just the same as full swage.

The points stated in this letter I hope will be of some use. Excuse any shortcomings in explaining my way of operating band saws, having very little practise putting my ideas on paper. I do not say they will reduce saws $3\frac{1}{2}$ inches to 4 inches. There are so many things to consider and overcome in getting the longest life out of band saws, that it would take practical instruction and mill experience to get a thorough knowledge.

In conclusion I am pleased to state I have no cracks in the six 14 inch band saws up to date of this letter. Thanking you for your kind letter, I remain,

Yours very truly,

WILLIAM CONGDON.

CUSTOM-MADE DOORS IN CHINA

Referring to the interesting article published some time ago in the Crucible under the title "The Saw in History," we learn that, notwithstanding the highly efficient present day power driven saws for cutting woods, metals, fibre, cloth, stone, mica, etc., primitive methods still hold in some localities.

A missionary, sent to China by the Presbyterian Synod of North Carolina, upon his recent return related the following incident to the writer. Wishing a connecting doorway cut between two rooms in his house, the missionary sent for a native carpenter. After bargaining for some time, the carpenter left the premises. Presently he returned with a helper, carrying a log of timber on their shoulders and a bag of tools on their arms. They then went to work, cutting the lumber by hand from the log as they needed it. My missionary friend told me that when the door was finished it not only was a substantial, workmanlike job, but an artistic one as well.

PINEKNOT.

THE DISSTON CRUCIBLE



GREENHEART

THIS tropical South American wood has earned a world wide reputation on account of its remarkable lasting qualities, according to a pamphlet prepared by the Forest Service.

Authentic records prove that, when placed in contact with water or the soil, it shows more resistance to destroying influences than do iron and steel. This durability is due in part to the presence in the wood of an alkaloid known as biberine and in part to the presence of resinous substances. The development of these latter substances largely determines the color of the wood which is known in the trade as yellow, gray and black greenheart. The black is the most durable.

The chief use of greenheart is in construction work in ship and dock-building, being used for keelsons, beams, planking, piers and piling. When placed in water it is proof against the ravages of the teredo or sea worm. There are well known instances where greenheart has stood in wharves for thirty years and under water for one hundred years, still remaining perfectly sound.

All the gates and piers of the Liverpool (England) docks are made of this wood as are also the lock gates in the Manchester ship canal. Greenheart has also been specified for use in the sills and fenders of the lock gates of the Panama Canal.

The ship *Fram*, used by Dr. Nansen in his Arctic explorations was constructed of greenheart: the same wood was also used in the Antarctic ship *Discovery*. Trestles, bridges, millwork, flooring, and in fact any construction which will have to stand great wear and tear are the best fields for the employment of this wood.

Greenheart is found in the northern countries of South America and in Brazil and the islands of Trinidad and Jamaica, in the West Indies. Its best growth is along the coast and rivers.

Greenheart is a large tree. It ranges in height from 60 to 100 feet and from 2 to 4 feet in diameter. The

trunks are without branches for the first 50 or 60 feet and furnish fine logs, free from knots. It is a tree which grows very slowly. Estimates place the age of a tree of merchantable size, say 20 inches in diameter, at about two hundred and fifty years.

Methods of marketing this timber are antiquated and expensive. All hauling in the forest is done by gangs of men or by oxen. The same care is not used in preparing the logs for shipment as is employed in the case of mahogany and cedar. At present only the regions along the navigable waterways are being exploited. In British Guiana, especially, there are vast forests, lying above the falls of its many rivers, which contain valuable stands of timber waiting only for modern methods to open them up.

SAWMILLS IN HOLLAND

In view of the close proximity to the scene of the present European war, these pictures from Holland, shown on the opposite page, take on added interest.

They are not typical of sawmills in that country, for Holland is progressive and up-to-date. They represent a type of mill that is rapidly passing away, and as such will be of interest to the American millman who is accustomed to only the most modern equipments in the lumbering districts of America.

Year by year these picturesque mills disappear, making way for more modern plants. It will not be long before the last of them will fold and discard their wings in favor of the steam or electric drive.

We are enabled to show these pictures through the kindness of Mr. H. P. Bronger of Rotterdam.

FORESTALLING HIM

BARBER—Your hair's very thin on the top, sir.

CUSTOMER—Ah, I'm glad of that; I hate fat hair.—*St. Louis Lumberman.*



A VIRGINIA SAWMILL GROUP

This picture shows the employes of Mill No. 2 of the Camp Manufacturing Co., at Arringdale, Va. They are a husky looking crowd and it can well be imagined that they keep things moving at a fast clip through the mill.

It is to Mr. J. A. Harrell, filer, who appears at the left end of the front row that we are indebted for this photograph. Mr. Harrell has been connected with the Camp Manufacturing Co., for eleven years, the last three of which have been with Mill No. 3 at Butterworth, Va. During these eleven years DISSTON SAWS have been used by the Camp Manufacturing Co. with great success.

While filing at Mill No. 3, Mr. Harrell has made an excellent record with his DISSTON bands, using only eight band saws for two band mills during three years. DISSTON resaws are also used on the horizontal machine and are subjected to some severe usage, but always give complete satisfaction.

The Camp Manufacturing Co. specializes in kiln-dried North Carolina Pine, both rough and dressed. They operate three mills in Virginia and one in North Carolina, having in all a daily capacity of 500,000 feet.

A MAN'S SIZED JOB

"Dear Mum—Please excuse Johnny today. He will not be at school. He is acting as timekeeper for his father. Last night you gave him this iximble, if a field is four miles square how long will it take a man walking three miles an hour to walk two and one-half times around it? Johnny ain't no man so we had to send daddy. They left early this morning, and my husband said they ought to be back late tonight, tho it would be hard going. Dear Mum, please make the nixt problem about ladies, as my husband can't afford to lose the day's work. I don't have no time to loaf, but I can spare a day off occasionally better than my husband can. Resp'y yrs. Mrs. Jones.—*Miami News.*

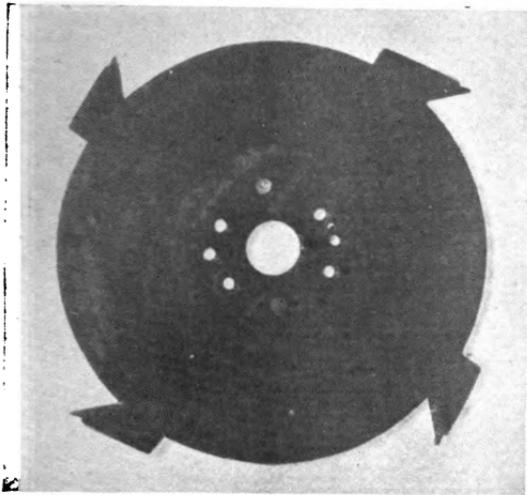
FEBRUARY 1912 CRUCIBLES

We will greatly appreciate the courtesy of any CRUCIBLE readers, who will return to HENRY DISSTON & SONS, Philadelphia, copies of February, 1912, issue of THE DISSTON CRUCIBLE. These are needed to complete our files.

THE DISSTON CRUCIBLE

A SIXTY-FIVE YEAR OLD SAW

The old saw shown here is about as unlike present day designs as a saw could possibly be, yet in its day it did faithful service. Way back in 1850 it was put in service in a mill at Ellsworth, Maine, cutting clapboards. In comparison with the saws used now it did slow work with its four teeth,



but no doubt, at that time, it was rated at a high point of efficiency.

The saw measures $20\frac{1}{2}$ inches in extreme diameter with teeth $14\frac{1}{2}$ inches from point to point. Three inches from the rim it is hollow ground to the center with an equal taper on both sides. The plate is 9-gauge at the centre, and 11-gauge on the rim. Teeth are 10-gauge at the points.

A piece of boiler plate supplied the material for this saw. There is no mark upon it to indicate the maker. These brief facts are all that is known of its history, for of the men who knew the story of its busy life probably none now remain to tell.

As a curiosity the old saw is most interesting. It is now in the possession of Abner Taylor, Disston Representative at Bangor, Me. The photograph was sent us through the courtesy of Mr. J. L. Drew of Bangor.

FROM SMALL TOWN BARBER TO BIG TOWN LUMBERMAN

(Continued from Page 181)

Having repaid Georgia's uncle the funds he had advanced, everything was clear sailing. My business had grown steadily. It is unencumbered and profitable. I knew my line and I knew myself. Having unlimited faith in both, I went after business that had too long remained neglected. I not only went after it—I got it. It developed and blossomed wonderfully.

Two children have come to us—a boy and a girl. Our home—which I presented to my wife a few years ago—is one of the best houses that money could build. It is in a little town just thirteen miles north of Duluth.

Every Christmas for the last ten years I have sent a beautiful remembrance to Mrs. Jeremiah Waldron. It comes from a boy whom she once fed. Nor is that all. Two years ago I motored from Buffalo, N. Y., to Drummond, Pa., carrying with me a small satchel containing nineteen 17-jewel watches. These I scattered

among as many Jeremiah Waldrons along the route. For these Jeremiah Waldrons and their wives showed a sickly boy of thirteen, in whose old memorandum book their names are scrawled, that the world is a good place in which to live, especially when one looks for the bright side, the right side, and who permits nothing to stand between him and his ambition.

THE END.

Florida buttonwood, a tree confined largely to the keys along the south coast, is very highly prized for use in cooking on ship's galleys. It burns slowly with an even heat and makes but little smoke or ash.

Dogwood, the principal source of shuttles for use in cotton mills, is growing scarcer year by year, and various substitutes are being tried, but with no great success.

THE DISSTON CRUCIBLE

WHO'S WHO IN THE SAW WORLD



FOUR OF NEW ENGLAND'S FINEST

MILLMEN of New England have long been well acquainted with the R. B. McKim Company, DISSTON representative at Boston, and no doubt many of them will recognize the members of the group above.

These men compose the well known firm which handles DISSTON products throughout the New England States. A brief sketch of the histories of the men who have contributed so much to the success of the McKim Company will no doubt be interesting to their friends in the saw-mill world.

Mr. C. D. Woodman, at the left in the upper part of the photograph entered the retail hardware business in 1884 in the employ of G. H. Woodman & Co., Westboro, Mass. In 1893 he took a position with Mr. H. O. Stratton, who represented HENRY DISSTON & SONS in the New England States, but, owing to business depres-

sion, he remained in his employ but one year and returned to the retail hardware business. After the death of Mr. Stratton, he entered the employ of Mr. R. B. McKim, who had succeeded to the business, and represented him as traveling salesman until the incorporation of The R. B. McKim Co., in 1909, when he was elected Vice-President of the company. Mr. Woodman's territory includes Connecticut, Rhode Island, Massachusetts and Maine.

Mr. W. H. Banks, shown in the picture at Mr. Woodman's left, started in the wood-working business when he was fourteen years old and worked at it until eighteen. Coming from seafaring stock, he naturally took to the water and shipped before

the mast in square-rigged ships trading between Europe, Asia and America. He soon advanced to officer, but owing to ill-health, was forced to give up the sea and returned to his "old love," the woodworking business, which business he followed until he retired as Superintendent of The Phonoharp Company, of East Boston. Mr. Banks then accepted the position of salesman for The Frictionless Metal Co., of Chattanooga, Tenn., covering New England and Eastern Canada. He became associated with Mr. R. B. McKim in 1906 as traveling salesman covering New Hampshire, Vermont, and a portion of Massachusetts and Maine.

Mr. A. E. Martin, at the lower left, in the group, was employed by Mr. H. O. Stratton in January, 1892, as bookkeeper, which position he retained with Mr. R. B. McKim, and held same up to 1909, the year the business was incorporated, when he was elected Treasurer.

Mr. J. A. McKay's connection with the DISSTON COMPANY dates back to July, 1891, when he began as errand and general utility boy for Mr. H. O. Stratton. He was eventually advanced to shipper and then inside salesman and, upon the incorporation of the company, was elected Secretary.

The prestige and popularity of DISSTON goods have been greatly increased through the efforts of these four able men. They have made many friends both for their house and for the goods they sell, who will always be glad to hear of their successful achievements.

THE DISSTON CRUCIBLE

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TABLE OF CONTENTS

	PAGE		PAGE
TWENTY-EIGHT LOADED TEAMS	(Frontispiece)	W. D. VEAZEY & Co.	11
EDITORIAL CHAT	3	TWO MILLION FEET OF WHITE OAK	12
A FLURRY IN BOX SHOOKS	4	FROM OUR READERS	13
A VETERAN MULAY SAW	7	SAW VS. IRON	14
THE FORTRESS OF QUALITY	8-9	MR. HARRY BOWEN	15
BALSAM FIR	10		



This Magazine is Published for the Advancement of the Interests of Millmen by

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TWENTY-EIGHT LOADED TEAMS ON MITCHELL BROS. LOGGING ROAD, KALKASKA COUNTY, MICHIGAN



THE DISSTON CRUCIBLE

A MAGAZINE FOR THE MILLMAN

VOL. IV.

FEBRUARY 15, 1915

NO. 1

EDITORIAL CHAT

SPECIALIZATION

IN a primitive state of society every man had to look after his own needs. He was his own tailor, making his rough coverings of skins for himself. He also had to fashion his own tools and implements with which to kill and prepare those animals which he used for food. And we suspect that his cooking was more notable for its shortcomings than for its tastiness. In fact he probably bolted most of his food raw.

Under such circumstances, where a man had to provide for himself all the necessities of life, meager though they were; was forced to feed, clothe and protect himself from the attacks of wild beasts and of other "predatory malefactors," it is evident that he could not become expert in the making of any one of his outfit of implements. The rough stone hatchets and knives which he left behind him bear witness to the fact.

But with the growth of intelligence and civilization, men turned their energies more to individual lines. One became a hunter and supplied the tribe with meat. Another cured the skins and made clothing for his fellows. Still another devoted himself to the cunning fashioning of bronze knives and spears. Thus specialization had its origin.

Through the thousands of years since the dawn of life on this world, the process of specialization has been going on. It has led to the establishment of industries which have grown to be great factors in the world's supply of commodities. And within each organization, formed to produce a special product, have grown up specialized departments run by men who have been trained to perform each his appointed part in the building up of the completed whole.

So it is with the saw-making business. As the demand for greater quantities and larger dimensions of lumber increased, the saw-maker developed his facilities and built special forms of saws to meet the increasing requirements of the lumber industry.

The DISSTON organization has always been a conspicuous exponent of the success achieved by specialized effort in saw manufacturing. Experts have been constantly at work improving designs and testing new shapes of blades and teeth. The results have been a series of improvements which are of incomparable value to the lumber industry—improvements which in turn are being continually bettered and augmented by this ever alert and growing institution.

A FLURRY IN BOX SHOOKS

By C. P. McDONALD

RALSTON was a \$5,000 man who knew the selling game, and whose firm knew that he knew it. But values count but little against the animal fighting instinct planted in the breast of the full-grown, healthy male when the provocation for wrath is big enough.

So when Ralston's boss walked in on him one afternoon and taunted him furiously on a personal matter in which both were interested outside of their business relations, neither of them thought anything about what his acts might mean to the firm. Of course there was a woman in it.

Ralston, however, was not thinking of her when he landed on the boss's chin, and then, after a decent interval to allow for the other's staggering rise from the office floor, repeated on eye and nose, and finally gave the last punch on the spot marked by the fifth button on the white "weskit." All he realized was that it was good to have the chance at the fat, hated creature that tried in vain to beat down his guard and get in one blow on him.

Ralston knew just how the other felt. He knew that it was not the licking that the boss was minding most; it was the sense of utter inability to retaliate in kind. The boss was game, and he kept coming until he met the knockout; but Ralston, raging as he was, toyed with him and let his contempt show on his countenance. That was his triumph.

While the boss was twitching back to a pained consciousness Ralston put on his coat, removed his hat from the peg, closed down his desk, and walked out the door. Once outside, he made an inventory of the situation and found that against a lost and lucrative job, he could place about \$80.00 in cash, a quantity of clothes, and a constitution unimpaired even by some recent extremely fast living.

There was no doubt at all, he reflected of the pace he had been traveling for the last six months. His cash balance was proof enough of that.

The case called for an instant decision and he made one. He took the night

train for Chicago and the next morning he was registered at a downtown hotel. He did not go to any of the firms in the hardware trade.

"I've had enough of hardware," he communed with himself, "and now that I'm out of it, it's me for the lumber business. I've always wanted to break into it."

It required the passage of several days and the infliction of a score of hard jars to bring him to the understanding that the lumber business did not want to be broken into, at least not by him. The big dealers had a full quota of help in every department. The branch house managers turned him down, and there wasn't a niche into which he could fit in any of the city sales departments of the big manufacturers.

His \$80.00 went fast. Soon he was in possession of nothing but a big stock of nerve, one suit of clothes, and enough change, he concluded, to carry him seven days if he shaved but once a day, had his shoes shined every other day, made a scant breakfast do for three meals, and slept in a ten cent "flop."

That was the state of his affairs when he walked in on Billings, territorial manager of the Consolidated, and for the sixteenth time asked him for a job.

"And I will be back here tomorrow at the same hour," he concluded steadily.

"If you come back here tomorrow I will have you thrown out," said Billings without any undue signs of perturbation.

Ralston came back the following day and was promptly thrown out. He made no resistance because it all was a part of the big game he had in mind. Billings had won his laurels by sticking to his word.

Ralston on the succeeding day presented himself at the office of Billings. This time Billings swung his swivel chair around and looked over the nery proposition in front of him—inspected him thoroughly, searchingly, from crown to toe.

"Ralston," he said impressively, "you're the supreme nuisance of my

THE DISSTON CRUCIBLE

usually prosaic life. If I could rid myself of you by anything short of manslaughter, or of giving you a job, I'd do so. I don't believe I can, however, so I'm going to put you to work. You may expect me to argue that I believe you will pester people into doing business with us. I am not going to do anything of the kind, so you may disabuse your mind. I am going to offer you the only job I have just now. It is a lugger's and checker's job at our South Chicago plant. You may be a \$5,000 man, as you say, but not to us. This job pays you \$11.00 a week. If you want it, go down there and report to the superintendent. If you don't, get out of here, and if you ever come back, I'll have you dealt with so that you'll resemble a can of ready mixed vermilion."

"I'm strong for the job," admitted Ralston.

"Go to it," instructed Billings, "and don't let me hear from you again."

Ralston went to South Chicago, traded his good coat for a lugger's outfit, and for six months trucked and lifted and strained. He went to work early and he quit late. He went to bed early and rose early. His muscles grew hard, his eyes clear, and his lips became accustomed to the set, firm expression of the silent man. He did little talking, for there was no one to talk to except his fellow luggers and checkers, and they were too busy for conversation. In the subsequent six months he studied lumber, grades, prices, estimates, and—for his own personal future good—what lumber would make the best box shooks.

One morning the superintendent ordered him to report to Billings. That gentleman did not as much as nod to him when he entered but he grunted in a manner which might have been interpreted as a recognition.

"Ralston," he said, "I have a place for a salesman on the West Side. The pay is \$13 a week. Report to this man and get busy."

Four months elapsed before Ralston again heard from Billings, four months passed in dogged rounds of small and large manufacturing establishments, arguing, cajoling, explaining almost to the point of entreaty why Consolidated box shooks were the best on the

market—why, when properly put together, they would give the user the greatest satisfaction because, when packed, they were sure to hold together and get the goods they contained to the dealer in perfectly good order. Consolidated box shooks never caved in at the ends, never let rain or snow seep through and damage the goods."

One of these four months he spent in learning that he knew practically nothing about selling box shooks to the consumer, the second month in acquiring the principles of good salesmanship, and two months in actual selling.

He was not altogether surprised when he received the next summons to see Billings. He knew that potentially he was more than a \$13 a week salesman.

"Ralston," began Billings when the meeting time came, "I need a man to put in charge of the sales department of a new—and a small—branch house in Pennsylvania at Jeannette. I am going to send you. You will have three salesmen under you. Our goods will have to be installed in the face of strong eastern competition. It is a chance for you either to make good or fail. If you fall down, the house will have nothing else for you. Let's see some of that five thousand dollar stuff of which you once boasted."

Ralston went to Pennsylvania with that Spartan encouragement ringing in his ears. Not until he was on the cars did he recall that Billings had said nothing about salary. But his expense money rested snugly in his pocket, and just then he didn't mind.

After the third week, when the original \$13 remained unchanged, he did care, but he was too busy just then to complain. He was fighting with the same savageness that he fought his old boss that day in the West, but this time it was against far greater odds.

The eastern competitors had seen the town, first, and they meant to see it last as well. Ralston's salesmen came in day after day with empty order books, complaining that they could not meet the prices of the easterners.

"But our product is a superior product," roared Ralston. "Our company is spending two hundred thousand dollars in planning and placing an advertising campaign for our box shooks—something never before heard of. The

THE DISSTON CRUCIBLE

Consolidated are the only people who ever saw the wisdom of advertising box shooks directly to the consumer—the purchasing agents. They're superior shooks. They're not made from cheap job lots of lumber, but they're the same high quality all the time. The Consolidated controls the output of ten lumber mills. Our shooks get the goods there and get 'em there right. Convince the purchasing agents, and they'll buy. Convince yourselves.

I'm contracting for these goods right and left."

And he was, too. His enthusiasm as a salesman was meeting a small individual reward. As a man in charge of men he was failing. Suddenly one night he had an inspiration.

"I want all of you here at six o'clock tomorrow morning," he told his salesmen.

They wondered—but they came.

(To be concluded)



MANCELONA, MICH.

HENRY DISSTON & SONS,
Philadelphia.

Dear Sirs:

Your letter of the 15th inst. received and in reply to your request regarding that pair of DISSTON SAWS that we received three years ago, will say that they have given excellent satisfaction. Have run them with a pair of another make continually for three years and wore them down from 12 inches to 9¼ inches. Have had but one crack in the braze of one saw, not any in the other saw, but I had to cut 3 inches out of it, to shorten it for the mill. A saw will stretch a lot in three years. They are still doing business, and I intend to run them as long as they will stay on the wheels.

We are cutting 40,000 feet of inch lumber per day in half frozen hardwood, with band and resaw.

You will find enclosed a photo of myself and family. I have eight children. The youngest is not on the picture. Have five boys and three girls, ranging from thirteen years to two weeks.

Yours truly,

CHAS. W. LARSON.

STRIFE

DEAR SWEET THING—"Aren't you feeling well?"

STEADY—"No, I ate German noodle soup and French fried potatoes for supper and they won't arbitrate."

—Lehigh Burr.

A VETERAN MULAY SAW

By PINEKNOT

THE photo is of an interesting saw of the Deal or Mulay type—interesting both because it was installed so long ago that nobody remembers when, and because it is turning out today smooth and uniform lumber at a very fair efficiency.

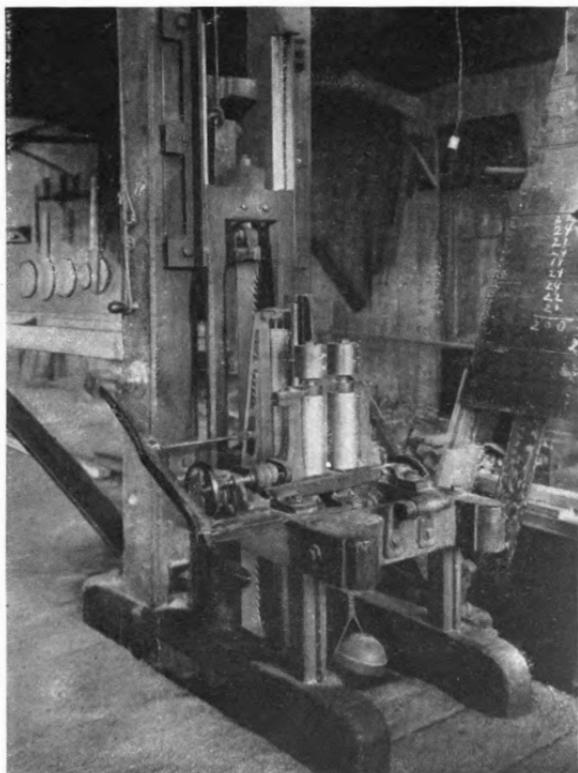
The frame is of wood and while this saw was designed and built long before the present day band re-saw was thought of, it has self centering feed rolls with practically the same adjustments as the modern saw. It is fitted with a single thin saw blade, five and one-half feet long and the frame or sash which carries the saw makes about 275 strokes per minute. The teeth of the saw have spring set and the original "jab" feed is used—a method of feeding lumber through machines, familiar to many gang sawyers.

The gentleman in charge points with pride to the nice, smooth, uniform lumber this rig turns out. He has had the care of the machine for the last twenty-seven years and says that he has no knowledge of when it was first installed.

This saw is part of the equipment of the Newburgh Planing Mill, Newburgh, N. Y., through the courtesy of whose manager, Mr. I. L. Burhans, this description is given to Crucible readers.

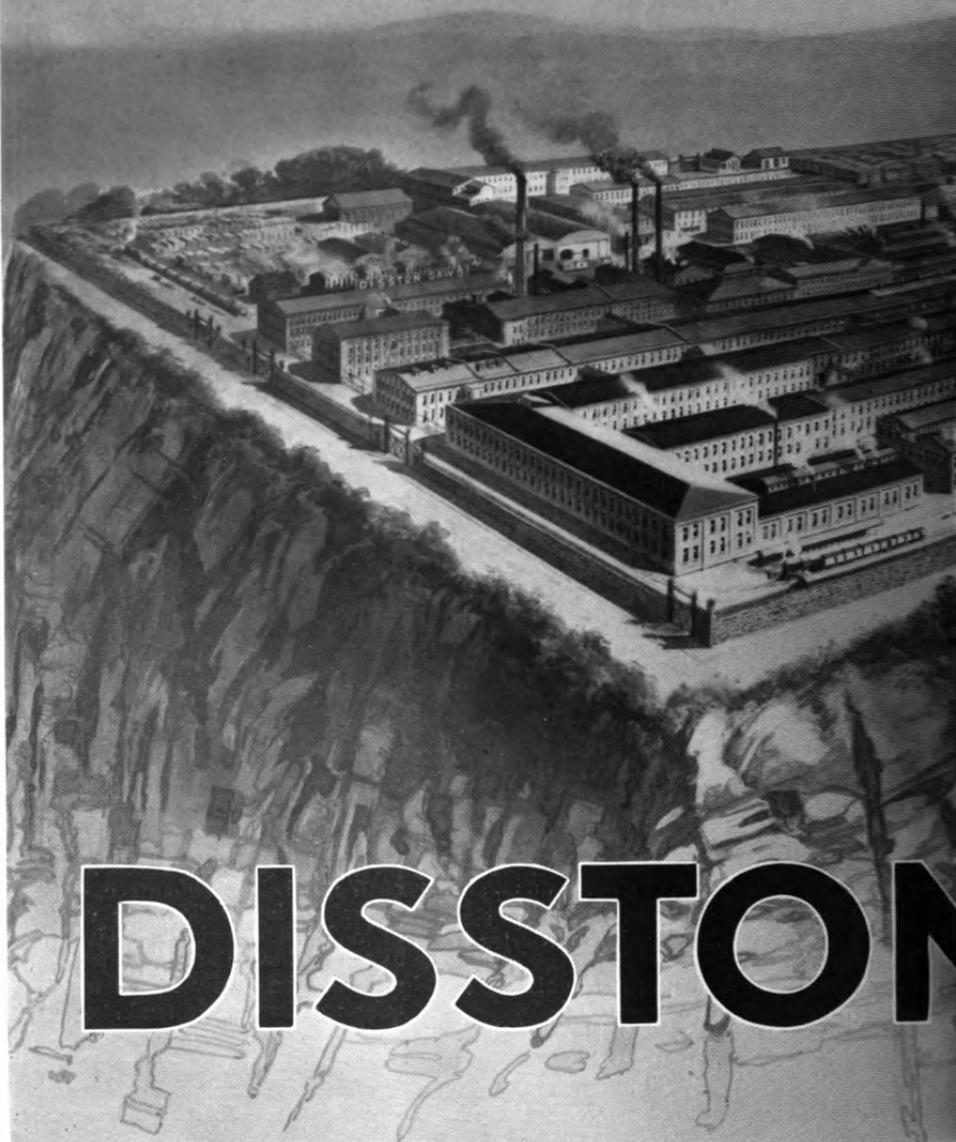
LOGS DUG UP ON PANAMA CANAL ZONE

Pieces of wood in a good state of preservation were discovered at depths

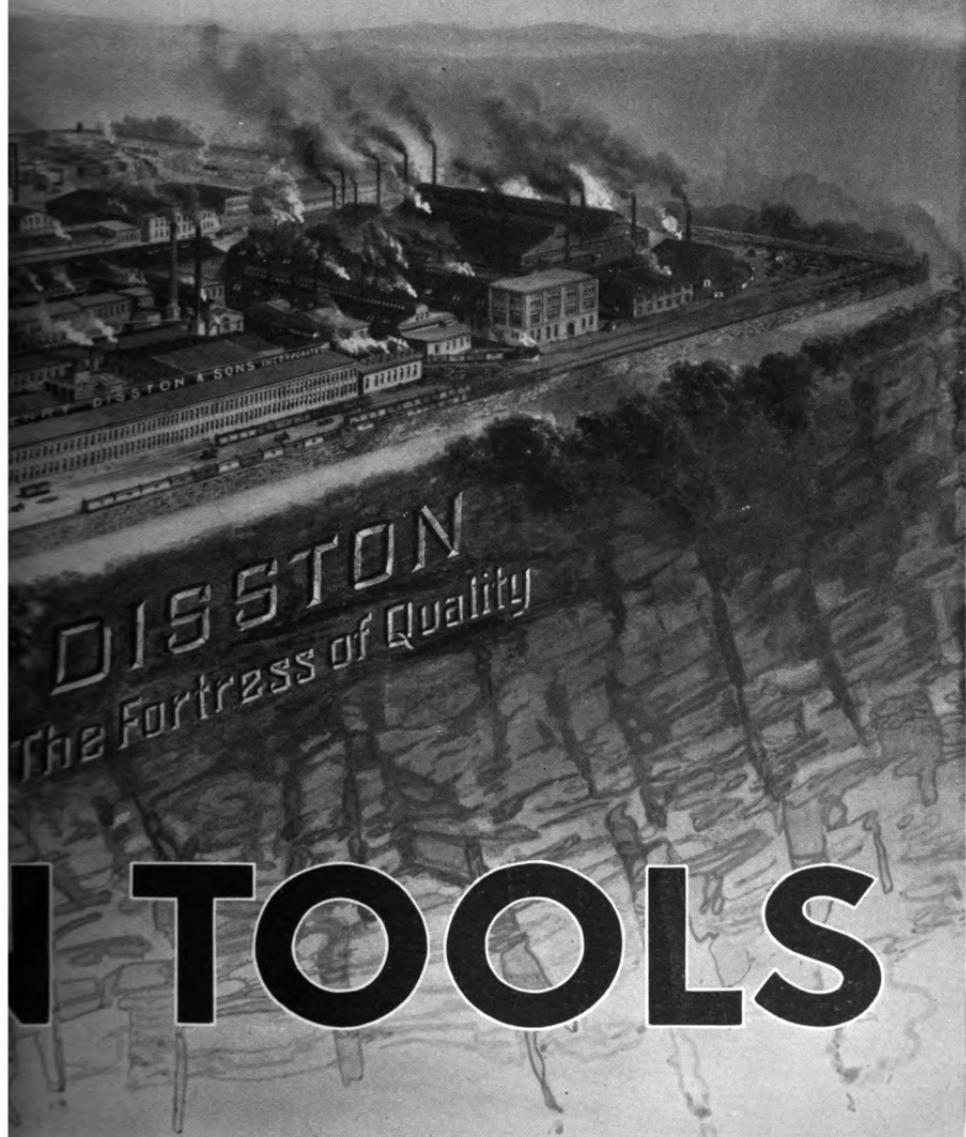


of 50 feet and more below the surface when the caissons for the new wharves and pier at Balboa, in the Panama Canal Zone, were being sunk. In one case a log so large that it could not be removed, but had to be cut to pieces with axes, was found at a depth of 67 feet below the surface, or 59 feet below sea level. This log was found in a black alluvial deposit a short distance above the bed of gravel that overlies the bedrock to which the caissons were being sunk. A section 20 inches in diameter with the bark intact has been shipped to the Bureau of Plant Industry at Washington for identification.—*Scientific American*.

The Fortress



s of Quality



DISSTON
The Fortress of Quality

TOOLS

THE DISSTON CRUCIBLE

BALSAM FIR NOW IN DEMAND FOR PAPER PULP

THAT balsam fir, a tree which a few years ago was considered of little value, is now in demand for pulp wood, is the statement made by the Department of Agriculture in a bulletin just issued on the subject. This demand has been brought about, says the department, by the enormous expansion of the pulp industry during the past two decades, with its present consumption of three and a quarter million cords of coniferous wood and the consequent rise in the price of spruce, the wood most in demand for paper making. In addition, the Department goes on to say, balsam has begun to take the place of spruce for rough lumber, laths, and the like, as the price of the latter wood has risen.

The chief objection to the use of large amounts of balsam fir in the ground-pulp process of paper making is said to be due to the so-called pitch in the wood, which injures the felts and cylinder faces upon which the pulp is rolled out. Balsam fir does not have a resinous wood, and the material which gums up the cylinder probably comes from grinding balsam under conditions adapted to spruce wood. Yet from ten to twenty-five per cent. and possibly more of balsam can be used in ground pulp without lowering the grade of the paper produced. It is known that with balsam logs left lying in water over a season this drawback practically disappears.

In chemical pulp, produced through the action of acids, these acids are known to dissolve the pitch, and any amount of balsam can be used, though some claim that too much balsam in the pulp gives a paper that lacks strength, snap, and character.

At the present time, balsam fir furnishes about six or seven per cent. of the domestic coniferous wood used by the country's pulp industry. The tree itself constitutes, numerically, about twenty per cent. of the coniferous forest in northern New York and Maine, and is abundant in many parts of New Hampshire, Vermont, and in the swamps of northern Michigan, northern Wisconsin, and Minnesota. It readily reforests cut-over areas, and

attains a size suitable for pulp wood in a short time.

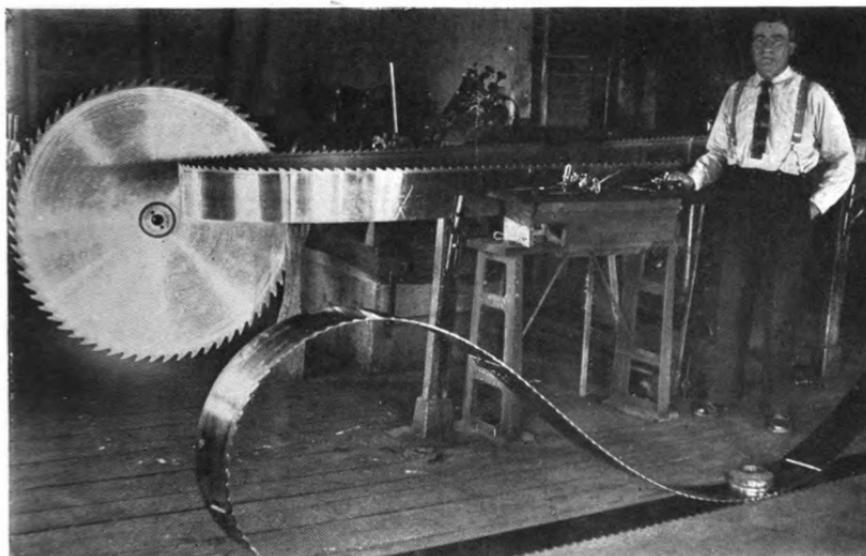
Under present methods of cutting, balsam fir is said to be increasing in our second-growth forests at the expense of red spruce, and with the gradual decline in the supply of the latter wood the fir will become more and more important commercially.

LONGEVITY OF CYPRESS

It is stated that the gates of St. Peter's at Rome, were of cypress and that when they were removed by Pope Eugene to be replaced by brass gates they were over 1,000 years old and still were in good condition. History credits Plato with having had his code of laws engraved upon cypress, preferring that wood to grass on account of its longevity. The bible mentions cypress as being the wood from which idols were carved. Herodotus records the making of mummy cases from cypress by the Egyptians and Pliny states that the statue of Jupiter in the capitol of Rome was built of cypress and had existed 600 years without showing the slightest sign of decay. The same historian asserts that the doors of the temple of Diana, at Ephesus were of cypress and although 400 years old at the time he wrote looked to be quite new. In the days of the Roman empire cypress wood was considered so valuable that tracts of it were given as marriage dowers, a circumstance which led to the wood being called *dosfilea*. The record of cypress exists from prehistoric times to the present day without a serious break. In the middle ages Leo Alberti mentions finding some cypress which had been part of a vessel bearing a record that proved it to have been submerged 1,300 years. The wood was in good condition. In the late 80's a cypress coffin was found in St. Michael's Church, Charleston, bearing the date 1678. The wood was sound throughout but the bones which it once had enclosed had long since turned to dust.—*Curiosity Shop*.

Angora goats have been used with profit to keep fire lines clear of inflammable vegetation on national forests in California.

THE DISSTON CRUCIBLE



W. D. VEAZEY & CO.

One of the smartest, some say the smartest lumber mill in New Hampshire is that of W. D. Veazey & Co., at West Thornton, whose filing room is pictured above. Like many other mills which keep their equipment up to top-notch efficiency, W. D. Veazey & Co., are firm believers in the merits of DISSTON SAWS.

In the photograph, Mr. P. H. Powers is shown standing beside the bench, and on the grinder is a DISSTON band saw which particularly commands Mr. Powers' admiration. He says it certainly is a "dandy" as it ran all last winter in frozen maple, birch, etc., and does not even show a scar.

PLAIN ENGLISH

Happy Harry Murphy, a top loader from a camp a few miles out of Duluth, Minn., was brought in to St. Mary's Hospital, that city the other day with a broken leg. After it was set one of the sisters at the institution asked him how it had happened.

"Well, you see, I was the skyman," said Harry, "and we were shy a grounder, and there was a gazaboo come down the pike and the push took him on. The first thing he sent up was a big blue butt, and I yelled out to him to

throw a Saginaw into her, but he St. Croixed her, and then he gunned her, and she came up and cracked my stem."

"I don't understand," said the sister "what you —"

"I don't either," interrupted the top loader. "I think he must have been bughouse or jiggerood."—*Am. Lumberman.*

MADE IN THE U. S. A.

WILD-EYED CUSTOMER—"I want a quarter's worth of carbolic acid."

CLERK—"This is a hardware-store. But we have—er—a fine line of ropes, revolvers and razors."—*Yale Record.*

WAIT A BIT

SILICUS—When is the proper time to congratulate a bride and groom?

CYNICUS—After they have lived together for at least a year and are still happy.—*Philadelphia Record.*

HIDDEN DANGERS

MOTORIST (to chauffeur)—Be careful about running over anybody hereabouts, James. This is a prohibition county, and most everybody has a bottle in his pocket.—*Atlanta Constitution.*

THE DISSTON CRUCIBLE



TWO MILLION FEET OF WHITE OAK

Large quantities of logs are frequently seen on the rivers on their way to the mills, but it is not often that a pile of timber reaches these proportions on land. The picture shows over 2,000,000 feet of white oak logs which accumulated at the plant of the Wood Mosaic Company at Louisville, Ky., after a fire which destroyed their mill some time ago and caused a temporary shut down.

An idea of the size of the logs may be gained from the comparative size of the horses which show, somewhat indistinctly, at the bottom of the photograph.

The Wood Mosaic Co. has since rebuilt their mill and it is quite probable that this unique pile of logs has by this time disappeared.

EASY MONEY

While traveling through the West a man lost a valuable dog and immediately proceeded to the office of the "Hustler's Review" in the town where he was stopping. Entering abruptly, he said to the editor. "I've lost a dog; I'd like to have you insert this ad for me:

"Seventy-five dollars' reward for the return of French bulldog answering to the name of Darwin. Last seen on Turner's road.' "

"We're just going to press," said the editor, "but we'll manage to hold the edition for your ad."

After returning to the hotel the owner of the dog decided to add to his advertisement, "No questions asked." He returned to the office to find the place entirely deserted save for a red-haired youth who sat gazing intently out of the window. "Where is everybody?" he asked. "Gone to hunt th' dawg," replied the lad without removing his gaze from the distant fields.

—*St. Louis Lumberman.*

DROPT A REMARK

"I had a dreadful fall last night."

"Tell me of it, Egbert."

"My wife was talking; I hung on every word, and then, and then—"

"Yes, yes, and then?"

"Her voice broke:"—*Harvard Lagoon.*

GRAVITY WINS

"Where's your little brother?"

"He hurt himself."

"How?"

"We were seeing who could lean out of the window the farthest, and he won.

—*Exchange.*

FROM OUR READERS

EXPLAINING THE LUMP

EDITOR CRUCIBLE.—Referring to the photo of the shingle with the lump protruding over the line of the saw cut, this phenomenon is quite common on lumber, especially that from cypress mills of the larger size where the steam nigger is used. It happens as follows: The log being turned on the carriage receives a hard blow from the nigger tooth, which mashes in the fibre of the wood, compressing it past the saw line, which compression remains for quite a time. As the boards or cants are sawed off, the saw passes through this compressed place, sawing an even surface, on which the grain raises after the board has started to dry. This particular shingle was off of a cant that had received a blow from a nigger tooth and the shingle saw cut through it and the lump rose after the shingle was dry, probably after it had been laid on a roof.

This phenomenon is taken advantage of in making cypress cistern or tank staves, in this way: The staves are worked out to size and jointed and then a line is made on the center of the edge of the stave, which line is hammered down with a pene hammer and the sides of the stave each side of the line are dressed off with a plane. When the staves are put together, being dry, the first touch of moisture swells the hammered grain back to its size, making an absolutely water tight joint.

H. C. HANER,
Burdette, Arkansas.

Laheys Limited, Canungra.

HENRY DISSTON & SONS,
Sydney, Australia.

Gentlemen:

Just a line to keep in touch with you. We have just pensioned off three DISSTON 8-inch band resaws. These saws first cut wood in September, 1911. They have worked continuously ever since, cutting on an average about 20,000 or more super feet of Hoop pine per day. This pine is cut into boards

ranging from $\frac{1}{4}$ inch up to 1-inch so you will see that 20,000 sup. ft. represents a good many cuts.

All the worst knotty timber is sent to the resaw and as we hold a large box trade we get some very knotty timber all the time.

These saws are worn down to almost six inches and yet they cut beautifully right up to the last.

We have just broken in a set of four 8-inch 17-gauge saws and they are like the brand on them, A-1. The beauty of DISSTON SAWS is that they hold tension so well. I sometimes have them come off after a three hour's run through knots and actually don't need to touch them with the rolls. We have a splendid operator on our machine, a Berlin 342 and I can tell you a combination of the three—Sawyer, Berlin and DISSTON does one's heart good to watch.

We have just installed, under the supervision of Mr. C. Bloomfield, a log band mill but we cannot stop just now to effect the change.

We have six 12-inch DISSTON SAWS, 14-gauge, for this machine.

The outlook of trade here is not quite so bright since the outbreak of the European war.

I had hoped to be in Sydney this month but circumstances have altered my plans a bit. When I do get down, however, I shall be only too glad to call in.

Yours faithfully,

(Signed) DAVID LAWTON,
Mill Manager.

REPAIRING BAND SAWS

It is the custom of some saw manufacturers in shipping saws for use on twin Band Mills to send them in pairs—right and left.

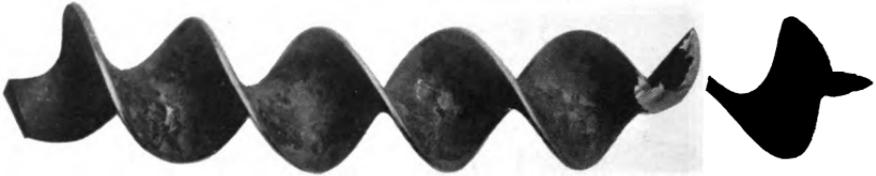
In the filing room it would be well to study saws received for use on twin resaw machines, particularly machines of the crowding wheel type.

It is not necessary and indeed it is not the wisest thing to do, to continue running band saws in pairs as they are mated in the first instance.

(Continued on page 16)

THE DISSTON CRUCIBLE

SAW VS. IRON



THE photograph at the top of the page shows an auger which was cut through in two places by a DISSTON SAW with no damage to the blade other than knocking the swage off the teeth. This happened in the mill of the Belle Point Lumber Co., Belle Point, Ky. This

width when delivered to the F. M. West Box Co., of Springfield, Mass. They had worn it down to five inches when the accident occurred which reduced it to ribbons. It is thought that a loose nut bent a tooth out which quickly tore the blade into strips. It is a remarkable fact, however,

and one which speaks well for the quality of the steel, that in no place was the saw broken clear across, and all parts of the blade were connected.

The man at the back of the machine had a fortunate escape. He was struck on both hands and on both sides of the neck by the flying coils, but was only slightly scratched.

The photograph was sent us by the courtesy of Mr. C. D. Woodman of Westboro, Mass.



LARGEST FOREST IN THE WORLD

In the Ungava (formerly known as Labrador) and Hudson Bay district, Canada, is a forest which is roughly estimated to be 1,700 miles long and 1,000 miles wide, which probably is the largest forested area in the world.—*Am. Lumberman.*

YELLOW POPLAR

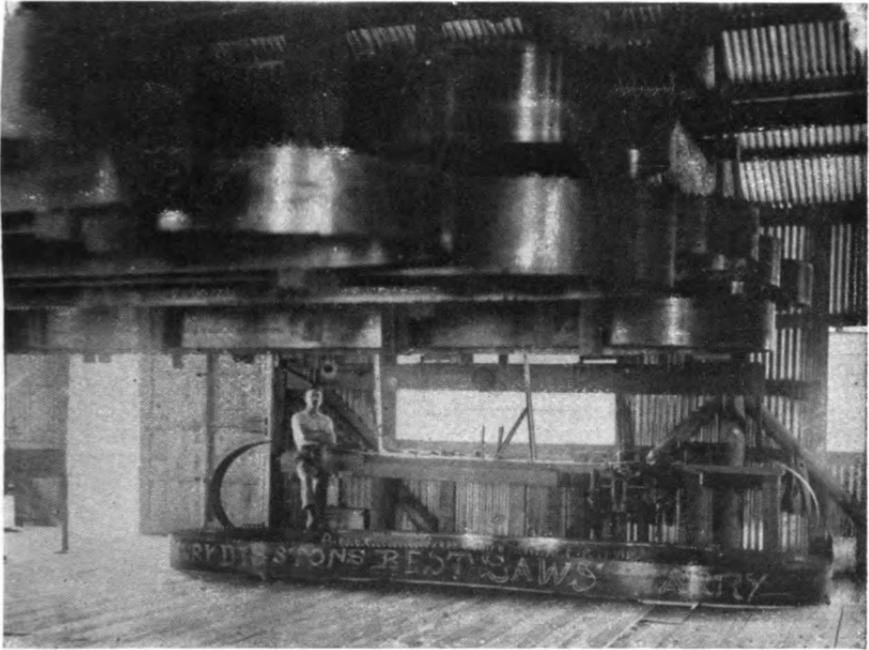
Yellow poplar, or tulip tree, the largest broad leaf tree in America, has been known to reach nearly two hundred feet in height and ten feet in diameter.

company already had a high opinion of the quality of DISSTON SAWS, but the performance of the band in this case has settled their conviction that DISSTON steel is unsurpassed.

While saws frequently come through such encounters with little damage they do not always get off so easily. The DISSTON band saw shown in the lower picture was originally seven inches in



THE CRUCIBLE HALL OF FAME

MR. HARRY BOWEN

MOST filers stick pretty closely to their own country. It is not often that one will make a jump from one continent to another, crossing thousands of miles of sea to take a new position.

But sea voyages are an old story to Harry Bowen. He has filed saws in Northern Canada and in Haiti in the West Indies—in Brazil and in the East Indies. Climates vary, from the icy chill of the north to the scorching heat of the tropics; scenes change, but, as the much traveled Harry explains, "DISSTON SAWS are always the same wherever I go."

Mr. Bowen has filed saws for the past sixteen years and has had occasion to work on many makes of saws, so his experience is worth something. To quote his own words—"I can find

none to compete with the DISSTON SAWS. The teeth never crumble, the tension remains longer and the saws will stand up longer than any other saws I have ever used or fitted up in any place on this globe."

At present Mr. Bowen is filing in one of the largest mills in the East Indies where he looks after the 12-inch bands. The timber is so hard that the saws have to be changed four or five times in a ten hour run. Each time they come off the wheels they are benched and given most careful attention.

Mr. Bowen has laid down some excellent rules for himself for the care of saws. Here are a few of them.

"Don't use a hammer on your saws just for pastime. When you use a hammer, use a light one. Then if you make a wrong blow you can easily fix

THE DISSTON CRUCIBLE

it when you come to the other side of the blade. Never let the emory wheel burn or blue the gullet. The tension in the blade should be as even as the blood in your veins and you should take as much care of the teeth in a band saw as you do with the teeth in your head. Keep your work up and you will have success and happiness."

There is a lot of good common sense in these words in which Mr. Harry Bowen's brother filers all over the world will no doubt be interested.

FROM OUR READERS REPAIRING BAND SAWS

(Continued from page 13)

Study the saws. Note their tendency to dish either way. Very often a complete rearrangement of your order of pairing the saws will save lots of hammering and be the means of giving more efficient saws.

Saw filers who got their training in saw shops, who are saw-makers as well as saw-filers, know that in working band saw blades many of them will show more resistance to the hammer on one side of the blade than the other, that there will be a tendency to take dish on one side, and that it seems to be the disposition of such a blade to return to this condition as often as it is leveled.

There is but one way to successfully meet this annoying condition—that is to keep the blade dished on the opposite, then after a time it will yield.

The tendency of band saws to return to this original dish will be noted while rolling with the stretcher.

Very often filers say "My roll is dishing my saws". While it is possible for the rolls to do so owing to poor alignment, in nine cases out of ten it is nothing more than the peculiar stubbornness of the blade noted above.

Light gauge saws in use on twin re-saw machines running over crowding wheels develop this dish quite rapidly, hence the advantage of studying them and changing them about, if necessary, to overcome the trouble thereby getting better all around results.

J. J. MURRAY

Glenolden, Pa.

Makuri, Wellington, N. Z.

MESSRS. HENRY DISSTON & SONS,
Saw and File Makers,
Phila., U.S.A.

Dear Sirs:-

We have been receiving regularly for some time your fine little magazine, "The Disston Crucible" and think it only right to let you know that we very much appreciate it, and have to thank you for your kind thoughtfulness in forwarding it so regularly.

I might mention that we have used your saws for many years and have found them to be what you claim.

Mr. Yeoman and myself together used one of your crosscut saws at a number of sports gatherings when sawing contests were held, and though heavily handicapped, were never beaten.

We have a 12-inch Disston circular as bottom saw of twins and it is a splendid tool.

We have also a 66-inch in same position in another mill and it is all that could be desired.

We have for the last two years been using your "Oriole" in the bush for log cutting and without hesitation say that it stands out on its own as a fast and easy cutting saw. Sometimes we have to cut both hard and soft timber in the day and we find it possible to do this without altering the set or filing. No other saw will do this in a satisfactory manner. Two months ago two of our bushmen used an "Oriole" in a sawing contest against about ten other saws. They made an easy win.

With best wishes for continued prosperity for your firm.

Yours faithfully,

GARDNER & YEOMAN
Per C. F. Gardner.

POSITION WANTED

As band saw and circular saw filer, knife grinder and millwright. Have had experience in filing for all kinds of timber, and can furnish the best of reference. Address R. F. Mechlin, R. 6, Box 1-A, Springfield, O.

The forests of Florida are said to contain at least 175 different kinds of wood.—*Bldg. Age.*

THE DISSTON CRUCIBLE

PRICE 10¢ PER COPY

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TABLE OF CONTENTS

	PAGE		PAGE
LOGGING IN MICHIGAN <i>(Frontispiece)</i>		J. B. SNOWBALL Co.	24-25
EDITORIAL CHAT	19	ACCIDENT PREVENTION IN THE WOODS	26
A FLURRY IN BOX SHOOKS	20	UNITED LUMBER Co.	29
AN INEXPENSIVE PORTABLE MILL	22	W. M. JAMESON	30
POSITIONS WANTED	22	FROM OUR READERS	31
DISSTON CUSTOMERS SINCE '55	23	CHARLES K. STEWART	32



This Magazine is Published for the Advancement of the Interests of Millmen by

HENRY DISSTON & SONS
INCORPORATED

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LOGGING IN NORTHERN MICHIGAN

THE DISSTON CRUCIBLE

A MAGAZINE FOR THE MILLMAN

VOL. IV.

MARCH 15, 1915

NO. 2

EDITORIAL CHAT

OPPORTUNITY

OF the various influences which shape our lives, Opportunity most deserves our gratitude. She is a kindly, generous divinity, ever ready to point out the way to success and happiness. But she is a restless spirit. If we do not listen to her call, if we neglect her, she flits impatiently away. She demands courage, quickness of decision, prompt action in those who would profit by her gifts.

Yet, in spite of her seeming displeasure at being flouted how often Opportunity returns. Often she is in different guise, testing our keenness and powers of recognition. Opportunity wishes us well and it is seldom indeed that she fails to give us many chances to profit by her generosity.

When Opportunity is so kind, why is it that more of us do not act upon her suggestions? It is generally from one of these two reasons—we are wilfully blind or we lack the courage to act. We have all seen instances of one or the other of these failings. A man is sometimes so contented with his job that he will not see that a little study, a little extra work after hours, will soon fit him for the job higher up. Perhaps a young filer is offered a position in a much larger mill where his responsibility will be heavy. Unless he has a lot of grit, the thought of taking on a job like this may take all the stiffening out of his backbone, and he will be afraid of trying it. Thus Opportunity is neglected. She will come again, but think of the lost years before she does.

It is the man who goes out to meet Opportunity, who has the courage to follow her leadership, often without seeing the end of the journey, who achieves the big success.

Seventy-five years ago a young man was thrown out of a job by the failure of his employers. They owed him money at the time. Some would have thought this ill fortune. But to this young man it was the call of Opportunity. Taking a few tools and some steel in place of the money due him, he launched out in a business of his own.

Today the immense saw and tool making plant of HENRY DISSTON & SONS stands as an inspiring monument to the zeal and untiring confidence of this young man who heeded the call of Opportunity.

A FLURRY IN BOX SHOOKS

By C. P. McDONALD

PART II.

RALSTON took them over the branch and lined them up before his stock.

"The trouble with you fellows," he said, not unkindly, "is that you don't believe our goods are the best. Now I am going to convince you."

Half a dozen Consolidated box shooks stood on the floor, assembled. These he packed to capacity with a miscellaneous lot of heavy articles. The covers were tightened on. Two "huskies" loaded the boxes on trucks, threw them unceremoniously on a wagon. Dumped them off the tailboards on to the cement sidewalk—on their sides, on their ends. Stacked them upon one another roughly, dumped them all over the street. Did they weaken? Not a bit—not a crack appeared in the selected wood. The cleats stood any strain to which they were subjected. The locked-corners of others held fast. Not a nail worked loose.

"There isn't a single thing on the market that will equal any one of those shooks," Ralston exulted. "They're regular shooks, boys, they are, and our contracts specify they'll all be of the same quality, the same strength. They're in a class by themselves. If talk won't land orders, show the P. A.'s wherein our product skins anything they ever bought.

"Tell 'em this: 'When you order shooks, it usually is because you need them—quickly. Waiting for shooks you have ordered but which the mills have failed to deliver on specified time because of a shortage of lumber, breakdown, or other disastrous factor, is destructive of business, customer-confidence, and progress. Service and efficiency must predominate in your shipping department. Your shipping facilities are primarily governed by your available supply of shooks and the ability of those shooks to hold tightly together and convey goods safely to your customers. When a carload of shooks is needed for immediate shipping purposes, half a

carload naturally is not adequate stock. Waiting for the other half is wasteful of time, labor, profits, and confidence. Our shooks are built for service which is too severe for ordinary shooks. Now, I'm going out with Williams today and give him my assistance."

The pair came back at night hot, tired, but triumphant with the knowledge that they had won the patronage of two consumers. Two out of eleven visited. Ralston considered that a fair percentage for a first trial. The state of Pennsylvania, when thoroughly worked, should yield bountifully.

"The other nine are thinking it over," was the thought with which Ralston consoled himself and Williams. The latter went over the route again the next day and Ralston went out with another salesman. The third day he accompanied the third man.

In the second month came victory. The eastern competitor was practically routed. His fortifications were battered down and the battle diminished into an occasional skirmish.

Ralston was overjoyed. He had worked himself almost to death, but his exultation gave him added strength. When he was sure he had conquered, he wired Billings laconically:

"Have won this territory. What raise do I get?"

Billings wired back: "From now, \$3,000 a year. Back pay, \$250."

Ralston took the \$250 when it came, boarded a train for New York on Saturday night, spent Sunday in a riot of high life and much liquor, and was back on the job on Monday with fifty cents in his pocket and contentment in his heart. The steam had been blown off.

A representative of the Consolidated dropped off the train at Jeannette one afternoon that summer, weary with traveling and anxious for a rest.

"I want to talk with you about a plan for buying real estate for a plant at Jonesboro," began the representative.

"At Jonesboro!" ejaculated Ralston, "why, this train goes to Jonesboro. Come on!"

THE DISSTON CRUCIBLE

He dragged the weary representative back aboard, sized up the project by acute questions, and when the train landed them there he sent the representative, properly coached, to a manufacturer who made competitive goods and who had some property to sell—for a livery stable, maybe, but not by any odds for a mill for the manufacture of box shooks.

Ralston kept in the background, being known to the manufacturer, and the representative got the property at a reasonable price. The competitor did not learn about Ralston until the deeds had changed hands, and he was not big enough to administer a good licking to him. He could only stand on the platform and rave while the train disappeared down the ribbon of the track.

The representative, for a wonder, included the true account of the transaction in his report to Billings. Also he saw the signs of conquest in Jeanette. He admired pluck and an uphill fight, that representative did. He also liked Ralston's company and Ralston's whiskey, but he was extremely modest about reporting his own likings.

Up the road of success went Ralston after that, all sun and no shadow. He got a slice of the company's best territory in the middle west; he was known to the men higher up than Billings, and was praised by them. Billings in their presence plumed himself upon the discovery of Ralston. What his thoughts were in private Billings did not record. He had been the crack territorial manager in his day, and he shouldered old Prouty out of his job. As a \$13 a week city salesman, Billings though pretty well of Ralston. As a \$5,000 proposition, he feared him. He felt his job slipping from him.

Fate—and Billings—about this time sent Ralston to the Pacific slope, where distances are great and expenses greater. Ralston, married now and more than ever ambitious, found that even a salary twice raised in as many years, was melting away before his living expenses. He wrote and asked for an increase proportionate to the new costs. Billings pigeonholed the letter.

In San Francisco Ralston waited and fumed. He wrote again.

The same deadly silence.

His cause was just, he was making good, he was being treated badly. His vanity was hurt. The old fighting instinct took possession of him.

He walked into the telegraph office and wrote on a sending slip:

"Consolidated Lumber Company, Chicago. Accept my resignation if salary raise is refused."

Billings got the message. Beaming all over, he walked with it into the office of the bigger men.

"He's on another bat and is trying to bluff us," he said as he laid the telegram on the president's table desk.

The old man pursed up his stubborn lips.

"We had planned to give him another raise at the end of the year?" he asked of Billings.

"Yes," answered the anxious Billings, but of the letters in the pigeon-hole he maintained a stolid silence. Self-preservation is the first consideration when danger threatens. He or Ralston must get the blue envelope. So he said nothing of the communications.

Again the old man read the yellow slip. He thought for a few moments. He liked the plodder. He himself had reached the top by that hard but fruitful route. He was fond of a man who possessed ability of the Ralston type. Ralston had a wonderful record behind him—a big future before him. The president turned to Billings.

"This telegram," he said slowly, "would seem to indicate that Ralston has asked for an increase before sending it."

Billings started to say something, halted, stuttered, lapsed into silence.

The president reached for a letter file marked "Personal." From it he took carbon copies of two letters. These he handed to Billings.

That worthy gentleman glanced at them, turned pale, stood mute.

"I ought to discharge you, Billings," said the president. "I really should."

"Admitted, sir," Billings managed to answer.

"I won't though," said the old man. "I think Ralston, our new territorial manager in these parts, will be able to find something for you. He's just that kind of a man."

THE END

THE DISSTON CRUCIBLE



AN INEXPENSIVE PORTABLE SAW MILL

George L. Myers & Son, of Brodbeck's, York County, Pa., have built up a profitable and ever growing business with their portable saw rig which is shown above. Success is not an easy thing to achieve in this day of keen competition in practically all lines of business. But Mr. Myers has had some very able allies to help him in his battle—the DISSTON SAWS which he has used for the last twelve years. The combination of the Myers skill and progressiveness with DISSTON SAWS is a hard one to beat.

For another thing, Mr. Myers and his son have always taken advantage of any helps or suggestions which would aid them in doing their work faster or better. They appreciate the hints which HENRY DISSTON & SONS are always ready to give to sawyers and mill men and have studied from cover to cover the DISSTON Handbook on Saws and "Saw Appreciation." These two books contain much information which they have found extremely valuable in their work.

In the photograph, No. 1 is Mr. Myers, the manager, No. 2 his son, John, and No. 3 his son-in-law.

POSITIONS WANTED

Band or Circular Saw Filer wants position. Satisfaction guaranteed.

A. M. Biery,
Alderson, Pa.

Position wanted as Band Saw Filer or mill foreman in the South. Will take any good mill for 30 days. If I do not make good I will make no charge.

W. B. Martin,
Parsons, W. Va.

LAW-ABIDING

"What are they moving the church for?"

"Well, stranger, I'm the mayor of these diggin's, an' I'm fer law enforcement. We've got an ordinance what says no saloon shall be nearer than 300 feet from a church. I give 'em three days to move the church."

—*Successful Farming*.

DISSTON CUSTOMERS SINCE '55

ON the center pages of this number is shown an interesting photograph of the plant of J. B. Snowball Company, Limited.

This Canadian lumber manufacturing firm has a remarkable history of continuous activity which dates back to the year 1840. At this time the business was founded, in Chatham, N. B., Canada. A few years later, in 1855, Mr. J. B. Snowball, the father of the present president of the company, became identified with the concern and since then the business has never been out of the control of the Snowball family.

Mr. J. B. Snowball was a far-sighted man with a wonderful ability for organization. Shortly after acquiring the original business he secured a water mill at Bay Du Vin. In 1872 he still further extended his interests by building a three gang steam mill at Chatham, at that time the largest mill in the Province. It had a capacity of 170,000 to 200,000 super feet of lumber per day. The logs then were much larger and better than can be secured now.

In 1899 the company was incorporated as J. B. Snowball Co., Ltd., with Mr. J. B. Snowball as President. All the stock was held by the Snowball family. After the death, in 1907, of the Honorable J. B. Snowball, at that time Lieutenant Governor of the Province, his son Mr. W. B. Snowball succeeded to the Presidency of the company.

The large mill of the Snowball Company at present is equipped with a Clark 8-foot band, a Clark 7-foot band resaw, three double edgers, two rotary slab resaws, lath machines and a box making plant. This latter receives its power from six 18 x 6 foot tubular boilers equipped with Dutch ovens for burning saw dust. Forced draft is supplied by powerful blowers.

The Snowball Company also operates a gang and rotary mill at Tracadie which has a capacity of ten million superficial feet per year. At Chatham, a shingle mill, equipped with five machines and a rotary is operated, separately from the main mill.

The storage and shipping facilities of this Canadian plant are excellent. Eight million superficial feet of sawn lumber can be piled on their extensive yards. Large steamers come directly to the wharf which has a frontage of 452 feet with a 50 foot depth of water.

Their timber area comprises 518 square miles of Government Crown Lands which are well forested and well watered.

The present personnel of the Company consists of W. B. Snowball, President, R. A. Snowball, Director, and W. H. Snowball, Secretary and Treasurer.

From the beginning of its milling activities, the Snowball Company has been a consistent user of DISSTON SAWS, a fact which carries a marked tribute to the uniform excellence of DISSTON materials and designs.

LONG TIME COMING

A certain haunted house down in Georgia was held in terror by all the negroes in the vicinity except Sam, who bravely declared that for \$2 he would sleep there all night. A purse was raised and Sam was told to carry out his end of the bargain and call in the morning for the money. When morning came no trace could be found of Sam—the house contained nothing but evidence of a hurried departure. A search party was organized, but without result.

Finally, four days later, Sam, covered with mud, came slowly walking down the road.

"Hi, dere, nigger!" yelled a bystander, "where's you been de las' fo' days?"

To which Sam curtly responded: "Ah's been comin' back."—*Everybody's*.

No merchant finds success in life
Nor ever will until

He sells the goods that won't come back
To customers that will.

—*Kellogg's Square Dealer.*



PLANT OF J. B. SNOWBALL COMPANY, LIMIT



D, CHATHAM, N. B., CANADA (See Page 23)

ACCIDENT PREVENTION IN THE WOODS

By A. H. POWERS, General Manager
Smith-Powers Logging Company, Marshfield, Oregon
(Courtesy of "LOGGING")

THE question of accident prevention in the woods is one to which I think every logger here has given more or less serious attention. It is, of course, a very difficult proposition to safeguard the men in the woods against preventable accidents with the same degree of assurance that you can men working in the sawmill or planing mill; but I believe it is feasible to devise a simple set of rules which will, in a measure, reduce the accidents incidental to logging operations. With this in mind, our company has prepared the following simple code of rules for accident prevention in the woods and the results obtained have justified the time, thought and labor spent in compiling them. Here are the rules:

FOREMAN AND ALL EMPLOYEES

It is the intention and desire of this company that its employees at all times be very careful and keep out of unnecessary danger in every manner and form while employed at their work.

No man is to start at any kind of work unless he is entirely familiar with it, acquainted with the dangers thereof, and fully capable of properly performing the work.

HOOK TENDERS AND RIGGING MEN

1. You are forbidden to stand or work in the bight of any line.

2. You are forbidden to stand or work close enough to any block so that in case the line breaks the end could possibly whip around and hit you.

3. You are forbidden to stand upon or ride any logs as they are being hauled in by the engine or in front of them.

4. You are forbidden to stand in front of a log or on the downhill side of a log after the engineer has been given the signal to go ahead.

5. You are forbidden to give the signal to go ahead until you are sure that every man is well out of the way and clear of all limbs.

6. You are instructed to very carefully inspect, look out for, and guard

against all falling of dry snags or the tops of trees, when logs come in contact with them as they are being hauled to the landing.

7. You are forbidden to fasten a block to anything not perfectly sound and capable of holding any strain that can possibly be brought upon it without danger of its giving way or tipping over.

8. You are forbidden under any circumstances, to hitch a heavy duty block to a standing tree. (A standing tree is liable to tip over at any time without warning.)

9. You are forbidden, in oiling the blocks, to go near the line or blocks when the engine is in motion.

10. Always see that your sniper has all limbs cut off close so that there is no danger of the limbs catching a tree or striking a man.

11. Upon noticing any defects in the block, line, or apparatus, immediately notify the foreman and cease using the same until it is repaired. We desire all blocks, line and apparatus to be kept at all times in first class condition.

ENGINEERS AND FIREMEN

12. Never turn the engine over, except upon proper signal from the right man.

13. Watch your engine carefully, and when you find anything wrong about it or any defect, or failure to work properly, immediately notify the foreman and stop using until it is in proper condition to run.

14. Always see that there is plenty of water in the glass and keep the gauge cocks open.

15. Test all injectors and pumps frequently, and keep them in first class condition.

16. Never change the safety valve after it is set by the inspectors. If safety valve fails to work properly, immediately stop using the machine.

17. Be sure that your oil pumps and oil cups are always in first class condition, and that oil is reaching the bearings.

THE DISSTON CRUCIBLE

18. Keep the oil holes free from cinders, dirt and stoppage of every kind.

19. Always keep the engine clean, so that you can notice breaks or cracks and loose or broken nuts and bolts.

20. Wash the boiler clean every two weeks, always keep the ashes clean in the ash pan and see that the boilers are well filled with water each night before leaving and that your fire is safe to leave.

LOADERS

21. You are forbidden to load any car unless the hand brake is set up tight and if the car be on any grade that the snub line with a clevis is fastened to the car.

22. When moving cars ahead, as soon as same are spotted, set up all brakes on both loaded and empty cars.

23. Take no chances whatever in working or walking under or near logs lifted in the air with hooks.

24. You are forbidden to fasten a hook to any portion of a car except the car bunk or axle (fastening elsewhere dangerously pulls and strains the car.)

25. Have the log loads well formed and balanced.

26. Never load logs upon the car at the landing until the track is thoroughly cleaned out and the rail clear of all mud, chips, sticks and other obstructions and all limbs cut off the logs, and stamped on both ends.

27. Always see that the chook blocks on the bunks stand straight up, and that there is no slack in the chain.

28. Use no blocks or rigging that are not perfectly sound in every way.

29. You are forbidden to use, or allow to be used, any No. 1 logs for wood, either for the machines or cook house.

FALLERS

30. Never stand close to trees when falling.

31. Always give plenty of warning to all employees and persons near before a tree is felled.

32. Always fall every snag that is in any wise liable to blow over or fall on you while at work.

33. Always keep a lookout for loose limbs and sailors and avoid the same.

34. Immediately turn in all tools not in proper shape for repair; notify the foreman and procure others.

35. Never fall timber up steep slopes, fall it down hill or sideways; on level ground or slopes, where trees will lie where felled, fall the timber upgrade and into the standing timber as far as practical and in a direction straight away from points where landing will be located. Fall the largest trees first and small trees on top to avoid breakage.

BUCKERS

36. Be careful to cut all logs where measured.

37. Block up logs, so that the same will not slit while bucking.

38. Always work on the upper side of a log on the side hill, so as to avoid the danger of its rolling on you.

39. Do not work near or under trees having loose limbs or sailors; but first have same cut down.

40. At all times be extremely careful to keep away from lines, and from falling timber. Limbs frequently fly a long distance when felled.

TRAIN MEN AND CONSTRUCTION MEN

41. Haul no logs until you are certain that the load is well balanced, secure and safe.

42. Never stand beside or near a train or load of logs that is in motion.

43. Do not get on or off the cars or engines while in motion and do not walk over log cars while in motion.

44. Never stand between cars while coupling (logs often extend over the ends of the cars.)

45. Be extremely careful to keep out of danger in unloading steel stringers and bridge timber, in working around or near pile drivers or trestle work of any kind.

46. Never get under a pile while it is being raised.

47. Never work or go under trestles when stringers or bridge timbers are being laid upon the same.

48. Immediately report in writing any track or trestle out of repair or in anywise unsafe.

49. Immediately report any defects in engines, apparatus, cars or tracks.

50. On branch lines, always throw the derail behind cars left at landing.

THE DISSTON CRUCIBLE

51. On main lines, always work under orders; and run only after securing right of way from train dispatcher.

52. Keep train under absolute control; run slow, and be very careful in switching and other work in foggy weather. See that your lights and lanterns are in good condition.

53. If you know, or suspect, any physical defect or inexperience in yourself or fellow-workmen, immediately report the same to your superior or to the company.

COOKS

54. Feed the men good, wholesome food in abundance and be obliging and attentive to their wants.

55. Do not throw away any good provisions, and immediately notify foreman of any laborer or employee detected in doing so.

56. Make all complaints to the foreman as to lack of provisions or equipment, or unsatisfactory help. Keep your camps clean and always in good sanitary condition.

FOREMEN

57. Always thoroughly instruct each man as to his work and the dangers thereof and secure his consent before placing him upon any job involving danger.

58. Immediately discharge any habitual drunkard or man who comes to camp in a drunken condition.

59. Immediately discharge any man who brings liquor to camp.

60. Treat the men courteously and fairly, and see that the clerks and cooks are courteous and fair and that the men are fed in the best possible manner. (The Company intends at all times to furnish the best wholesome provisions that the market affords.)

IN GENERAL

Any man having a grievance should take the same up with the foreman at his camp and if the same is not satisfactorily adjusted, should then report the whole matter in writing to some general officer of the company.

A FEW HINTS ON FIRST AID

I.

Sterile bandages, antiseptics, text books upon First Aid to Injured,

medicines for colds, bowel complaints, etc., are kept by each timekeeper.

II.

Don't give whiskey in cases of shock, fainting or severe accidents.

Give black coffee. If necessary, send bottle of black coffee along with patient to hospital.

Cover patient with plenty of blankets and apply heat to body, viz., hot bricks or stove cover wrapped in cloths, or bottles filled with hot water.

III.

All minor wounds such as jiggers, scratches and skin abrasions; first cleanse with soap and water; second dry; third apply tincture of iodine to wound and area around it; fourth, apply sterile bandages.

IV.

Larger wounds: cleanse with soap and water, apply tincture of iodine and sterile bandages. Then report to company surgeon to have wound treated.

V.

Contusions, bruises and sprains: slight ones are best treated by rest, hot applications and liniments, but have all severe cases examined by company surgeon to eliminate possibility of a fracture.

VI.

SCALDS AND BURNS

Apply olive oil, cylinder oil or vaseline; then apply bandages.

FRACTURES

Preparations for transporting fractured arms, forearms, hands, fingers: apply padded splints made of boards, bark or paste board, several layers, to anterior and posterior surface using bandages, rope, twine, etc., to hold in place.

THIGH

Leg and thigh: strap board or hewn pole to body and limb long enough to reach from arm pit to heel.

LEG

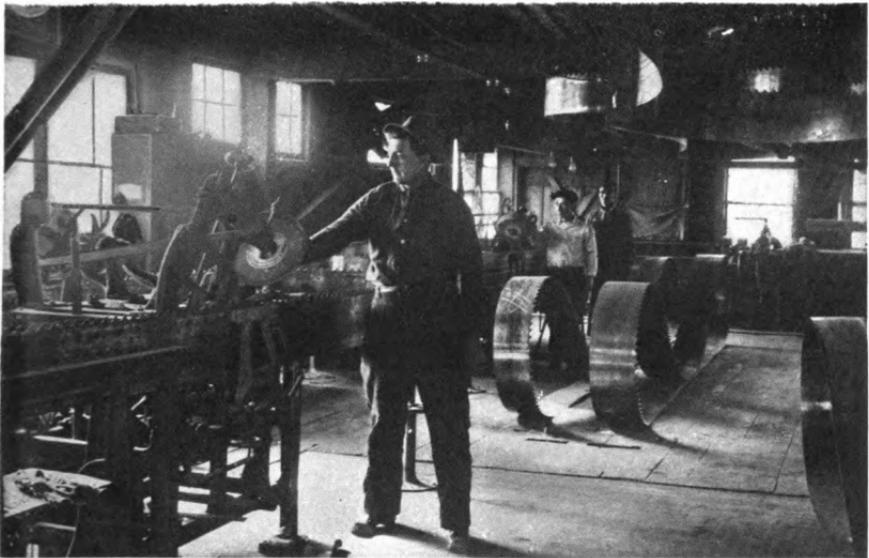
Use pillow or blanket rolled from both ends to padded boards strapped on.

PELVIS, SPINE AND SKULL

Make patient comfortable and transport quickly and gently as possible.

(Continued on Page 32)

THE DISSTON CRUCIBLE



UNITED LUMBER COMPANY

Pennsylvania has some fine saw mills, but it would be difficult to find a faster one than that of the United Lumber Company at Humbert. The photograph above shows a portion of their well-appointed filing room with Mr. H. A. Collins, filer, standing beside the grinder. Mr. Collins has here a number of DISSTON SAWS which were purchased in 1910 and have been worn down from 12 inches to $7\frac{1}{4}$ inches with out any cracks or without ever having been rebrazed. This is an excellent record and speaks well not only for the saws themselves, but also for Mr. Collin's skill in keeping them in order.

This photograph was sent us by the courtesy of Mr. C. O. Thayer, Superintendent.

UNPROMISING

A retail dealer in leather goods, doing business in Baltimore, wrote to a firm in Massachusetts, ordering a carload of the merchandise. The firm wired him:

"Cannot ship your order until the last consignment is paid for."

"Unable to wait so long," telegraphed the leather merchant. "Cancel the order."—*Lippincott's*.

AN UNNECESSARY DRAG

An Eastern college graduate applied for work in a Michigan lumber camp. He was told to get busy on one end of a cross-cut saw, the other end being in charge of an old and experienced lumberman. At first all went well, but at the end of the second day the young man's strength began to wane. Suddenly the old man stopped the saw and spat.

"Sonny," he said, not unkindly, "I don't mind yer ridin' on this saw, but if it's jest the same to you I wish you'd keep yer feet off the ground."

SERVED 'EM RIGHT

THE VICAR—"For shame, my lad! What have those poor little fish done to be imprisoned upon the day of rest?"

TOMMY—"Tha-that's what they got for— for chasing worms on a Sunday, sir."—*John Bull*.

"Oh!" exclaimed the fair city visitor, as a couple of calves scampered across the barnyard. "What pretty little cowllets!"

"You are mistaken, ma'am, said the old dairyman. "Them's bullets."—*Newsy Notes*.

W. M. JAMESON

HIS many friends throughout the lumber industries of the South will deeply regret to learn of the death of Mr. W. M. Jameson, which occurred on January 27th, at his home in Memphis, Tenn.

Mr. Jameson was born at Logansport, Indiana, fifty-two years ago. When a boy he learned the saw-filing business, and followed that profession for a number of years with a marked degree of success, filing in some of the largest mills in the country.

About twenty years ago Mr Jameson became identified with the Riechman-Crosby Co., Mill Supply Dealers and Southwestern Sales Agents for HENRY DISSTON & SONS, at Memphis, Tenn., in the capacity of traveling salesman, and at the time of his death was Secretary of that Company. The field of his labors was mostly in Arkansas, northern Louisiana and southeastern Oklahoma, in which territory no more popular or successful salesman ever carried a grip.

As a salesman Mr. Jameson had but few equals, and no superior. His success in this direction was phenomenal. For him to go after an order meant that it was secured. His kind and genial nature easily made friends for him, and his unwavering loyalty, strict honesty and keen sense of justice readily retained them. He was a man of strong convictions, but broad-minded and big hearted, and had no time for hypocrisy or subterfuge of any character, and was free to a remarkable degree from that vanity and smallness of character which often distinguishes otherwise great men.

Mr. Jameson was self-made. In his early days the opportunities for education were meager compared with those of today; yet he was a fluent talker, had a good command of language, and was thoroughly conversant with all subjects in his line of business. As a conversationalist he was unsurpassed. He seemed to be literally saturated with what he thought, so profuse was its expression in his conversation and manner. This was the great secret of his success as a salesman.

Mr. Jameson was an energetic and tireless worker; the rapid growth of his firm and the wide patronage it enjoys, are in no small measure due to his efforts.

He will long be remembered by those who were so fortunate as to have come in contact with him. In his death his family lost a kind and devoted father, his associates in business a brilliant salesman and wise counsellor, and those who knew him a sincere friend.

It is unfortunate that so valuable a man should be snatched off while yet in the prime of life.

FROM OUR READERS

Monson, Mass.

HENRY DISSTON & SONS,

Dear Sirs:

I have a chisel tooth saw you made for me several years ago. My man cut the steel teeth of a Green Mountain dog, breaking seven shoulders in three different places around the saw. Some are $\frac{3}{4}$ inch off and some $\frac{1}{4}$ inch. This has always been one of the best saws for frozen timber that I ever used. I have had several saws of other make but this saw of yours has always done what the others would not do. It is 54 inches with 44 teeth. You dressed the throats and filed new holders about two months before the accident happened, three years ago. I bought a new saw to take its place, but I think I will have the old one fixed up and put it back at work.

Yours truly,
C. P. LYON.

Willawindi, Baradine,
Australia.

HENRY DISSTON & SONS,

Dear Sirs:—

I suppose you are beginning to wonder what has become of us for not writing you before. The boys came along and started the inserted tooth saw and we gave her some pretty severe tests. We ran her in pine for two days and then set her into four big ironbark logs and never sharpened her, so that was a very good test. We are doing good work with her now. Well, if I keep on telling you about the inserted tooth saw, I will be writing all night to you, but there is one thing certain, we are more than satisfied with it.

As for the saw we said was soft when the teeth bent backwards, I naturally thought that they should have broken off when they struck the steel dog and in consequence thought the saw was soft, but Mr. Cozens soon explained my error, showing me that was the elasticity of the steel. Well, Mr. Mackin, the whirl I took at it with the hammer I did more harm than good.

Anyhow Mr. Cozens hammered it out on an ironbark block. He said it was a difficult job but he fixed it up O.K. and she is going beautifully now. I have to thank you for sending Mr. Cozens and Mr. Corkill along. Mr. Corkill gave us some valuable information about the mill and its arrangements. He designed a new bench for us. It will be the best bench out in these parts when we get it going. We will be sending you along another order for an inserted tooth saw for it. Anything we can do to further the business of HENRY DISSTON & SONS up this way, we will only be too glad to do it for you. I would have liked to have gone down to Sydney and had a good talk with you, but that will be a treat for me later on I hope. Thanking you once again, we remain,

Yours faithfully,
PINCHAM BROS., Per A. G. P.

DEAR SIRS:

I have used DISSTON SAWS for thirty-five years and find them to give the best results of all the saws in the world. I have a saw that was made by HENRY DISSTON & SONS that I got of my grandfather. It was used to saw shingles and my father sawed with it when he was the age of eighteen years. He is now seventy-six years old. When the rest of the mill was worn out and thrown away, I bought the saw and sent it back and got it recut for a cross-cut. I used it for that purpose until it got too small and in 1905 I had a fire and it was in it. I shipped it back and got a rip saw made of it and have it yet. It is $16\frac{1}{2}$ -inches in diameter now and was 30-inches at start. I have used it for sawing the hardest kind of lumber. My grandfather died in 1902 at the age of eighty-six and I do not know how long he had it before my father was sawing with it.

Grandfather's name, Joseph S. Wimer; father's, Michael Wimer.

Respectfully, J. H. WIMER.

WHO'S WHO IN THE SAW WORLD



CHARLES K. STEWART

HENRY DISSTON & SONS, Seattle Branch

Why is it comparatively easy to sketch some men and so difficult to convey anything approaching an adequate portrait of others? Is it because some lines are so much fuller than others—possess so many more phases, as it were?

We might tell you that he was once a Wisconsin farm-boy, that he had been a hotel clerk, a hardware salesman, a saw salesman in Michigan and Wisconsin for years, and finally came West, but that would not be descriptive of the man.

Here is one who could, without embarrassment, associate with a president, and still is respected and liked by the boys, one who possesses a "Taft" smile and a congenial disposition; a sincere and loyal friend; alive to his duties to his employer and constantly seeking to best serve the needs of his customers.

When he started calling on the trade in a runabout, he was none too familiar with the eccentricities of automobiles, but we have yet to learn of anyone who withheld a helping hand; and

there is many a rancher willing again to share his supply of gas with him.

The foregoing is not intended to be eulogistic, it is merely a brief attempt to give you an impression of a master in the sales-world, Charles K. Stewart.

ACCIDENT PREVENTION IN THE WOODS

(Continued from Page 28)

Hemorrhage from extremity, (arm and leg) slight oozing from wounds usually controlled by sterile bandages or dressings wrung out of hot water and placed in wound.

UNCONTROLLABLE HEMORRHAGES

Place tourniquet made of small rubber hose, handkerchiefs, suspenders, bandages or rope, between wound and body. In case this does not check all bleeding apply another tourniquet between wound and end of extremity.

HOW THE HORSES SAW IT

It happened in front of the village postoffice.

An old farmer was holding his frightened team while an automobile rushed by.

"Queer how horses are so skeered of them things," said the one of the loafers.

"Queer?" grumbled the farmer.

"What would you do if you should see my pants coming down the street with nothing in them?"—*Successful Farming.*

"A little cork fell in the path of a whale
Who lashed it down with his angry tail,
But in spite of his blows
It quickly arose
And floated serenely before his nose.

Said the cork, "You may flap and
sputter and rap
But you never can keep me down,
For I'm made of the stuff
That is buoyant enough
To float instead of to drown."

—*Progressive Farmer.*

GUEST—"Look here! How long am I going to have to wait for the half portion of duck I ordered?"

WAITER—"Till somebody orders the other half. We can't go out and kill half a duck."

THE DISSTON CRUCIBLE

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TABLE OF CONTENTS

	PAGE		PAGE
TOWER OF JEWELS <i>(Frontispiece)</i>		WILLIAM DISSTON	42
EDITORIAL CHAT	35	IMPRESSIONS OF THE DISSTON PLANT	44
DISSTON AT THE EXPOSITION	36	E. F. COOPER	48
GOOD WORK	39	POSITION WANTED	48
DISSTON EXHIBIT AT THE EXPOSITION	40-41		



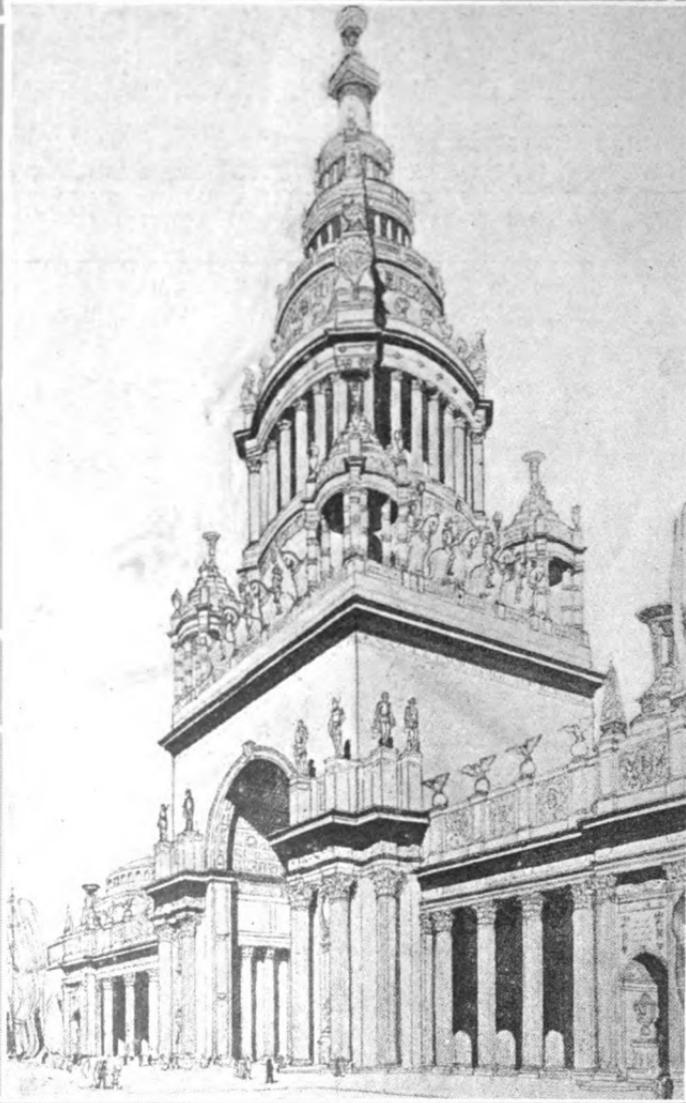
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New Orleans, La. Memphis, Tenn. San Francisco, Cal. Sydney, Aus. Vancouver, B. C.
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TOWER OF JEWELS

Panama-Pacific International Exposition.

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THE DISTON CRUCIBLE

A MAGAZINE FOR THE MILLMAN

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APRIL 15, 1915

NO. 3

EDITORIAL CHAT

THE EXPOSITION

IN striking contrast with the destructive exhibition of the progress of science now engrossing the activities of almost the entire world, the Panama-Pacific International Exposition stands out in bold relief as the most elaborate exponent of constructive development the world has yet seen. The magnificent scale on which it has been produced makes it an entirely appropriate celebration of the greatest physical achievement in history—the completion of the Panama Canal. Science, in her unceasing effort to make the unchanging number of the earth's acres yield ever increasing comforts and luxuries to an ever increasing population, is taking tremendous strides. Progress along lines of scientific endeavor has been, perhaps, greater during the decade since the St. Louis Exposition, than in any corresponding period in history. All of which has supplied material for an exposition on a scale which, a few years ago, would have been an impossibility. And this material has been utilized throughout to the greatest advantage. Utilized not only in the magnificent design and decorative effect of buildings and grounds, but also on the educative side—the exhibits themselves.

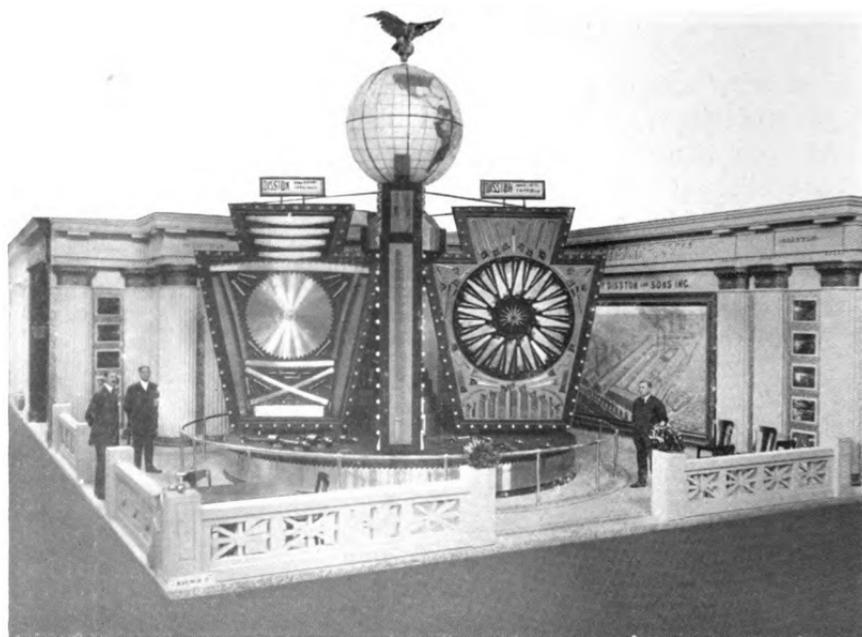
Virtually every branch of scientific and commercial activity is represented in selected displays embodying the latest achievements along that particular line of development.

On a scale entirely commensurate with the scope of the Exposition as a whole, the Diston Exhibit represents, in the saw and tool making field, the highest type of development to which seventy-five years of industrial supremacy have brought the art.

DISSTON AT THE EXPOSITION

WE hate to break through our wonted dignified reserve and tell on ourselves, but we've *some* exhibit out at the 'Frisco Exposition. We *had* to have—it was expected of us. As you read in the editorial on a previous page—or didn't you?—that Exposition is the embodiment of modern development. Every line of commercial activity had to open up and

ought to do it. We didn't want to feel that they'd spend all that car fare and then come home feeling that in spite of the elaborate preparations the Exposition somehow wasn't quite complete. Of course there was the very minor consideration that an exhibit might influence a few users of saws and kindred tools to use only *ours*, but our prime motive was purely altruistic.



show what it had done for itself since they compared notes before at the St. Louis Fair.

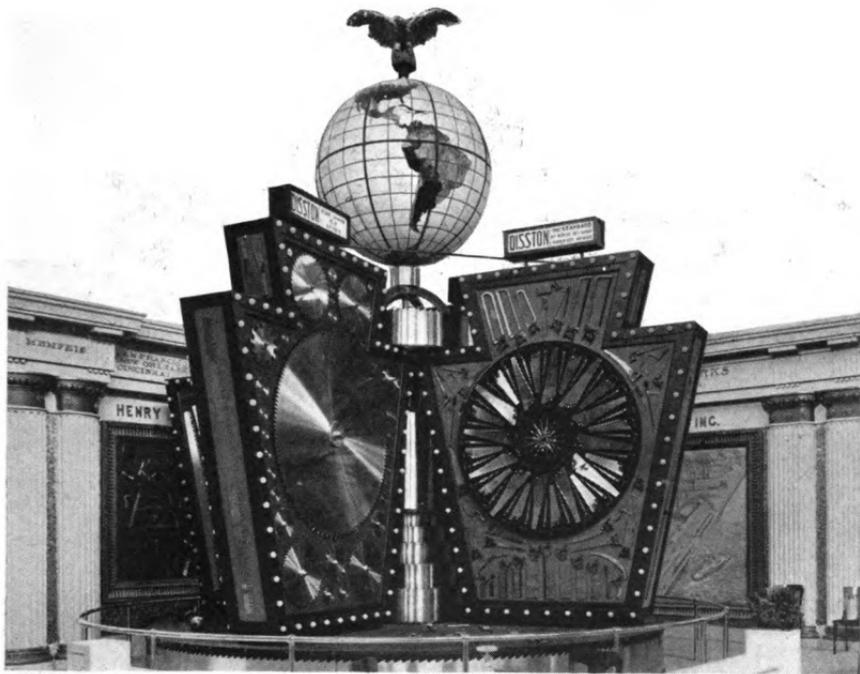
Of course it's been noised about quite a bit in the past seventy-five years that we're more or less interested in making saws, so we thought it was up to us to show what was going on in the saw game.

Then, too, we figured that out of consideration for the millions of visitors who would attend the Exposition, we

So we asked them for a nice bright corner on the center aisle of the Palace of Manufacturers when that worthy edifice was still a back lot, save in the fertile imagination of the architect.

We long since had come to the conclusion that the stereotyped, glass-case, drug-store sort of display along the walls of a booth might be all right for Egyptian relics and other antiques but it didn't give us scope enough to show what we'd been doing in a real live

THE DISSTON CRUCIBLE



industry. So we began to lay plans for a *real* exhibit.

One way to show a line as complex as ours is to set up the display and let the visitors walk around. Another is to save the visitors the trouble of walking by turning the exhibit around. This had never been done in the saw game, but neither had most of the other improvements until DISSTON pioneered them. So the revolving exhibit idea was adopted.

The Disston trade-mark has always been behind our goods and we saw no reason for an exception being made in displaying the line. The keystone was made the basis in the construction of the exhibit. A revolving turret twenty feet in diameter is surmounted by four keystones twelve and a half feet high and ten feet wide and two feet thick. These, with the turret constitute the exhibit proper, which is surrounded by a heavy nickel-plated handrail. The keystones and turret are of wood and iron with California Red Wood trimming, the main body being covered with rich colored felt. In the centers

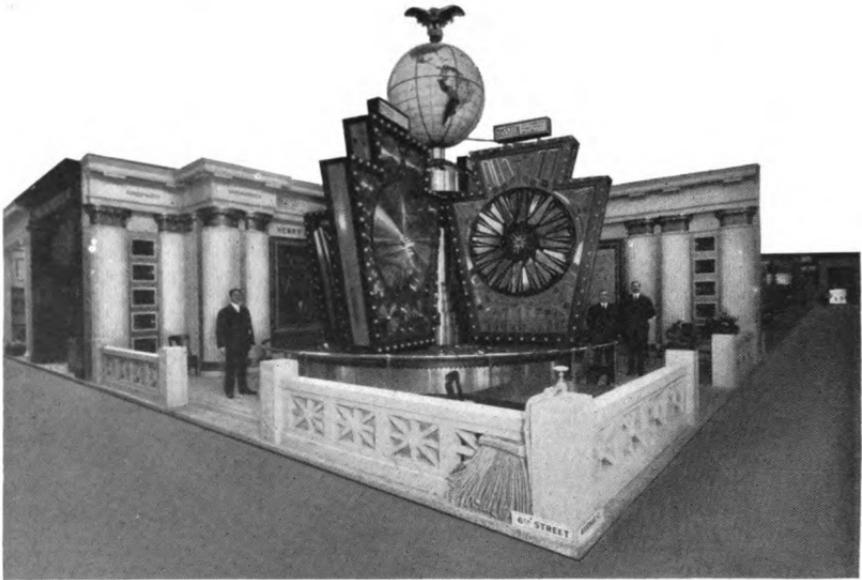
of three of the eight keystone faces revolving discs five and seven feet in diameter carry an assortment of the smaller saws and tools, symmetrically arranged.

In the centers of the other five faces, large circular saws revolve, and on two of these faces six smaller circulars revolve around the center saw. A central pyramid on the turret between the edges of the keystones is made up of band-saws ranging from 16-inch width at the base to 8-inches at the top. A 48-inch stove-saw caps the pyramid.

Above the four keystones is a seven foot, illuminated globe of leaded glass—the different countries being in various colors. Surmounting this is a large gilded American Eagle carrying a pennant with the slogan "Quality Tells." The globe revolves in the opposite direction to the rest of the exhibit.

Saws of every description and a wide variety of tools are displayed. Saws of every size and pattern, for every purpose; metal cutting saws—band, circular, and hack—all sorts and kinds of wood cutting saws—long cross-cuts

THE DISSTON CRUCIBLE



for felling the forest monarchs, band and circular saws for reducing logs to lumber and shingles—saws for cutting bone, fibre, stone and other materials. The tools shown include saw-tools and files, plumb and levels, bricklayers' and plasterers' trowels, squares, bevels, mortice gauges, machine knives, barker, clipper, molding, leather splitting, paper trimming, cane and cloth knives—all arranged in attractive designs.

Two of the keystone faces are especially interesting. One is composed entirely of metal cutting saws ranging from small hand and power hack-saws to the great "Premier" used for cutting all metals including armor-plate. On the other only files are displayed. Countless sizes, shapes and patterns are shown, and the central design, representing a large circular rip saw, is made entirely of files.

The floor and part of the walls of the booth are of inlaid Mosaic, and the walls and railing were especially designed to harmonize with the mass of dignity of the exhibit proper and the color scheme of the Exposition.

That's a general description of the DISSTON Exhibit—its proportions, scope, design, etc., but so far as conveying any adequate impression of

its effect is concerned, it doesn't do it. You'll have to draw on your own imagination for that. Even the photos don't begin to give it.

Picture, if you can, such an exhibit! Perfect in every feature of design and mechanical construction, covered with glistening steel, much of which revolves independently of the turning of the whole, the revolving globe surmounting it all—it's pretty nearly the embodiment of light and motion—a veritable jewel of the "Jewel City."

The Panama-Pacific Exposition has been a revelation in its magnificent proportions and detailed splendor. That the DISSTON Exhibit is entirely in keeping with such surroundings will not be questioned by any who see it.

The late Justice Brewer was with a party of New York friends on a fishing trip in the Adirondacks, and around the camp fire one evening the talk naturally ran on big fish. When it came his turn the jurist began, uncertain as to how he was going to come out:

"We were fishing one time on the Grand banks for—er—for—"

"Whales," somebody suggested.

"No," said the Justice, "we were baiting with whales."

THE DISSTON CRUCIBLE

EASY MONEY

An automobile dashed along the country road. Turning a curve, it came suddenly upon a man with a gun on his shoulder and a weak, sick looking old dog beside him. The dog was directly in the path of the motor car. The chauffeur sounded his horn, but the dog did not move—until he was struck. After that he did not move.

The automobile stopped and one of men got out and came forward. He had once paid a farmer \$10 for killing a calf that belonged to another farmer. This time he was wary.

"Was that your dog?"

"Yes."

"You own him?"

"Yes."

"Looks as if we'd killed him."

"Certainly looks so."

"Very valuable dog?"

"Well, not so very."

"Will \$5 satisfy you?"

"Yes."

"Well, then, here you are." He handed a \$5 bill to the man with the gun, and added pleasantly, "I'm sorry to have broken up your hunt."

"I wasn't going hunting," replied the other as he pocketed the bill.

"Not going hunting? Then what were you doing with the dog and gun?"

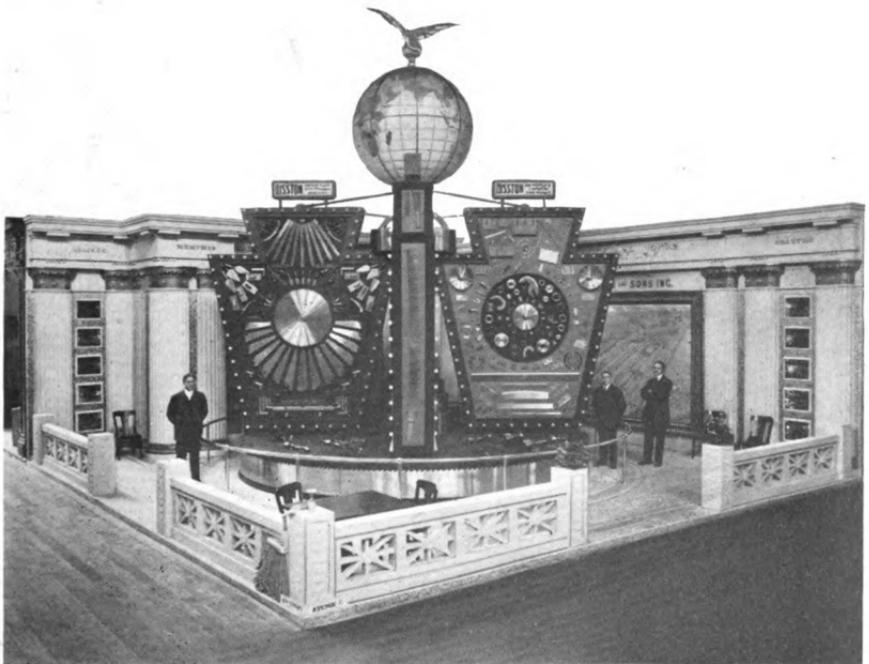
"Going down to the woods to shoot the dog."

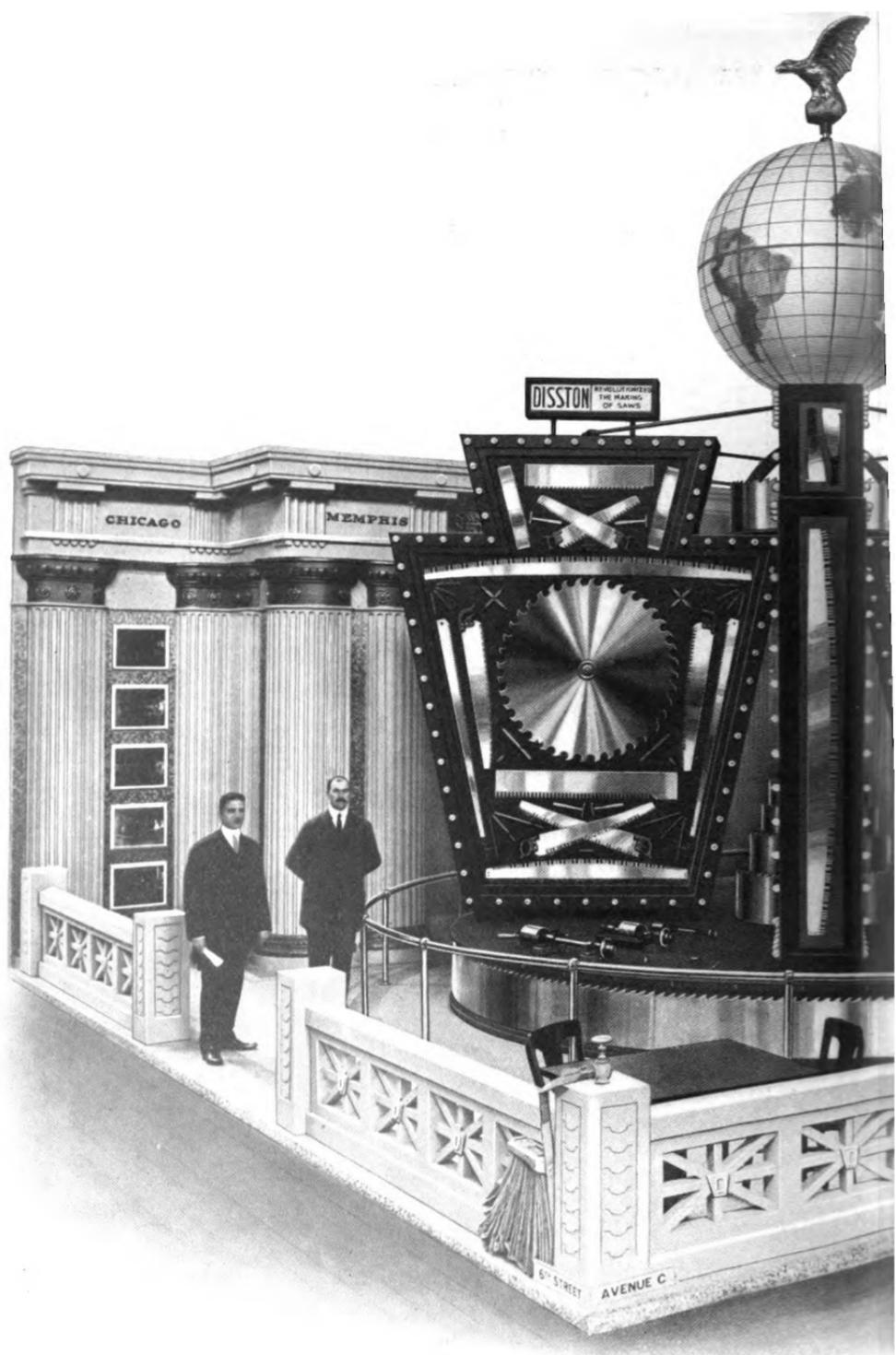
GOOD WORK

It is the ambition of all good filers to keep their band saws in service as long as possible, or until the blades have been so worn down by successive filings that they have to be discarded.

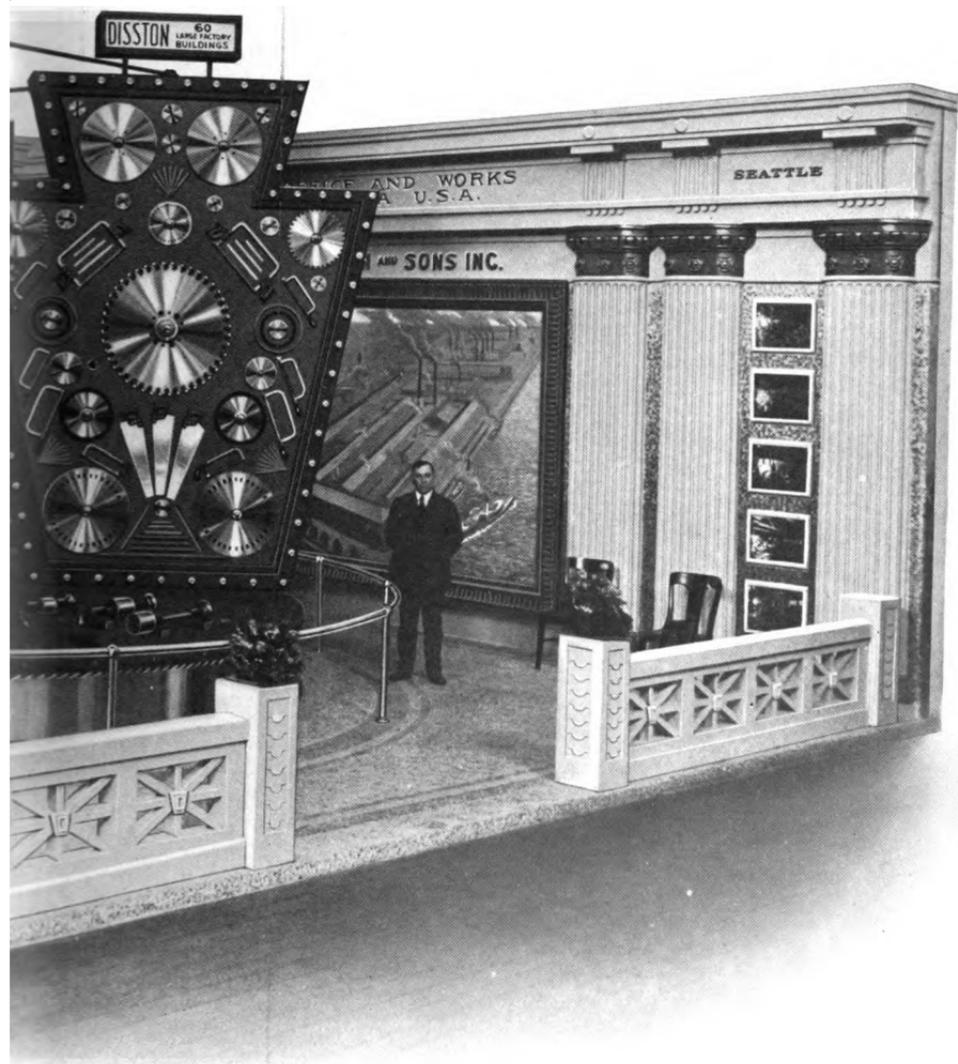
Mr. John Nichols, filer for Lee Wilson & Co., Wilson, Ark., is now using a DISSTON band which has been worn down from 14 inches to $10\frac{1}{8}$ inches. The saw was originally $51\frac{1}{2}$ feet long and was used on their large mill. Later it was cut down and is still giving excellent service as a re-saw.

This is getting maximum service out of a band and shows the lasting qualities that can be expected from a DISSTON Saw under proper treatment. It also demonstrates the fact that a good filer is as valuable and necessary to the mill as a good saw.





THE DISSTON EXHIBIT AT THE



William Bisston

1859--1915

William Bisston, President of Henry Bisston & Sons, Inc., died Monday evening, April 5th, of heart failure, superinduced by an illness of only a few months. Mr. Bisston was born in Philadelphia in 1859. After graduating from the Episcopal Academy of that city, he entered the Bisston saw plant. Here, under the direction of his father, Henry Bisston, the founder of the firm, William Bisston acquired the complete and intimate knowledge of every branch of the saw manufacturing business which so eminently fitted him for his later responsibilities. In 1896, upon the death of his brother Hamilton, William Bisston assumed the presidency of Henry Bisston & Sons, Inc., and for nearly twenty years directed the affairs of the company with rare judgment and executive ability--contributing largely to its development and success.

Mr. Bisston leaves a widow, who was Miss Elizabeth Dunlop, of Washington, a son, William B. Bisston, Vice-President of the company, and a daughter, Pauline Bisston.



WILLIAM DISSTON

IMPRESSIONS OF THE DISSTON PLANT

By an Independent Observer

(From the Philadelphia Public Ledger, Monday, Feb. 22, 1915.)

TWO factors impelled a visit to our great saw works in Tacony; first, the plant celebrates its diamond anniversary this year; second, the concern is a striking example of an American industry which has driven the foreign invader out of the country, and followed up that advantage by vigorously attacking alien competitors in their home markets.

With the diversion of European workers in all lines from industry to destruction, and the consequent crippling of foreign exports to the United States, which totaled \$750,000,000 annually before the war, the methods and accomplishments of the late Henry Disston are profoundly instructive. For Mr. Disston wrestled with foreign competition at its maximum strength; he was a business-doer of the old school, whose career is painted in fast colors on the screen of our country's rising commercial supremacy.

Let me first relate a circumstance that occurred on leaving Tacony after a full day spent in the saw works. My seat on the local train, inbound, was shared by a young man, bright-eyed and red-cheeked, whose name I do not even know. Identity, after all, is only the electric sign outside the theater of life. The drama is inside.

"You have been looking us over," began the young man. "Too bad there is so much of us that is under the surface, good stuff you can't get hold of by a walk through the shops."

Immediate interest was acknowledged with: "How's that?"

"Why, the feelings of the men; their pride in the institution; you cannot see that," he remarked. "I started as an office boy, and now I am a salesman, or they call me one. Really, it isn't difficult to be a salesman for Disston goods; they sell themselves. That's what it means to be with a concern that has a name; saves all controversy with the trade. We made a big hit with our 1915 hand-saw. Our original idea was simply to eclipse all

previous efforts, and we succeeded, but the saw is high priced, selling for \$3.00 each. You know other concerns are making hand-saws for the 5 and 10-cent stores. Well, when this saw was put on the market the American mechanic astonished us by the demand; he wants the best, and we are suffering from under-production."

Here, indeed, was a surprise, a volunteer testimonial sprinkled with genuine philosophy.

"I wonder if the big office men showed you our principal aristocrat?" he resumed. "He is just a plain artisan on piecework, but no king has got anything on him in Tacony; he quits work every weekday at 12:15 by the clock. There are others who finish at later periods, but he is the first out. He is so skilled and rapid that he works less than six hours continuously and calls it a day. Look at the time he has for the garden in summer and for books in winter! He is the only man I envy in the whole plant."

WHERE THE FLATTERY OF IMITATION HAS TO BE CLOSELY GUARDED AGAINST

Certainly this conception of royalty in labor was worth preservation. My interesting informant continued:

"We have to watch out for the Japanese. They are after our ideas. Visitors have always been welcome in our shops, which are so extensive that one man going through could hardly memorize much detailed information. Now, what do you suppose those smart Japs did?"

"I cannot imagine," I replied.

Only a few days previous the head of another concern had commented upon the difficulties of safeguarding American mechanical ingenuity from imitation by patient and adaptable Germans. He said that every time his concern brought out a new device there was bound to arrive in an early mail from Germany an order for one or

THE DISSTON CRUCIBLE

two of the improved articles. This was invariably followed months later, he said, by the discovery in some foreign market that a German firm was offering similar designs in cheaper grades. For some time past this other firm had declined to make for Germany in sample lots. Hence the writer's interest in the subtlety and finesse of the Japs. The young man from the saw works resumed:

"The Japanese used to come one at a time, different men on different days, and each visitor specified the particular department he would be very pleased to be taken through. Thus by spending hours in one department its secrets could be absorbed. Later, all the detailed information could be assembled into a fairly complete whole, our methods and designs having been carried off in the memories of our Oriental visitors. Oh, we don't mind the Japs; we like them; but we hustle them right through the entire works now."

EMPLOYEES STAY ON THE JOB

Indeed, I was sorry when this unconstrained observer left the train at North Philadelphia. He struck me as a pattern employe of the Tacony plant, with a shrewd, optimistic viewpoint that only could have been produced by special and unusual working surroundings. Thus I recalled that many of the employes at the saw works were sons and grandsons of the original saw and toolmakers. They were reared to industrial and useful lives in pleasant suburban surroundings, educated and trained to accord and harmony with their employers and the common interest—quality manufacture and expert salesmanship.

The books to-day show that 19 men have a continuous service record of 50 years and over; 90 from 40 to 50 years; 238 from 30 to 40 years; 320 from 20 to 30 years; 763 from 10 to 20 years. Working beside these 1,430 veterans are 2,170 younger employes who cannot but imbibe a spirit of loyalty and personal interest in the welfare of the business.

SMALL BEGINNINGS OF A GREAT BUSINESS

Henry Disston, the founder of the saw works, who ranks in the industrial

life of our city with Matthias Baldwin, John George Brill, John B. Stetson and William Cramp, came to Philadelphia from England with his father, Thomas, and a sister, in 1833. He was 14 years old. Three days after their arrival, the elder Disston, who had been a builder of lace manufacturing machines, died. Young Disston apprenticed himself to the saw-making firm of William and Charles Johnson. In 1840 young Disston found himself a journeyman saw and toolmaker out of employment, for his bosses had failed, owing him back wages. He squared accounts by accepting some tools, steel and other material in payment for the amount due, and, having become of age, started in business for himself on Second street below Arch. Here he hung out a sign.

At this time two wheelbarrow loads of coal, or about 400 pounds, were sufficient to run him for a week. It takes 2,464,000 pounds of coal, or 1,100 tons, together with 30,000 gallons of oil, every week to fire the furnaces at Tacony; this illustrates the growth of the business.

That grand institution, the American family, popularly expected to either evaporate or pass from "shirt sleeves to shirt sleeves" in three generations, has a lesson of thrift and department from the Disstons. At the end of the third quarter of a century twelve Disstons have been personally identified with the works, amicably dividing the titles and responsibilities. Five are dead, including the founder, who died in 1878. The remaining seven are active in the business, four being grandsons of the founder.

Henry Disston had five sons, Hamilton, Horace C., Albert H., William and Jacob S. Upon the death of Hamilton, in 1896, William Disston took up the management, assisted by his two brothers, Horace C. (deceased) and Jacob S.; Henry Disston, son of Hamilton, and Samuel Disston, and later on William D., son of William; Hamilton, son of Jacob S., Frank, son of Albert, and S. Horace Disston, son of Samuel. All of the grandsons are practical business men, as well as mechanics, and identified with the management is Edmond B. Roberts, vice-president, a young man, who by

THE DISSTON CRUCIBLE

ability and diligence rose to this position after 25 years.

PEERED FAR INTO THE FUTURE

"Our diamond jubilee finds us at the maximum of our output," said William Disston, the president and son of the founder, who is recovering from a recent illness. "My father peered far into the future, for when he began there existed strong prejudices against anything but foreign-made saws. He was frequently compelled to sell his saws at an advance of only 1 per cent. above their production cost."

Mr. Disston told how on one occasion his father entered a hardware store and, asking for one of the proprietors, bought a carpenter's handsaw.

"He looked at the saw for a moment, then remarked it was good for nothing, and, bringing it down upon the counter, smashed it into many pieces.

"Who are you, sir?" said the hardware merchant. "Why, any saw will break up under such treatment."

"I am called Henry Disston," said my father, "and here is a saw I defy you or any other man to break in a similar way." He then produced one of our saws, and it stood the test. I tell you this romance of our business to show you the obstacles encountered at the outset."

From 1846 until 1871 the elder Disston occupied a factory at Front and Laurel streets, where he started with steam power. He kept adding structures and stories, until there was no more room available, and he was forced to seek space for expansion in the suburbs. In the summer of 1871 he hit upon Tacony, eight miles northeast from the City Hall, and later made his first purchase, this being six acres, including a saw-mill. This was immediately refitted and placed in operation for the purpose of experimenting in the running of saws. These experiments led to improvements of great value in the manufacture of saws, whereby their efficiency was highly increased.

INAUGURATION OF THE TACONY PLANT

"The last Thursday in September, 1872, my father, Samuel Bevan, his master mechanic, and William Smith,

our present master mechanic, were ready to start erecting the first building of the new plant. Smith says that Mr. Bevan remarked, 'We'll be at it with a crew in the morning.'

"Not much, you won't," says my father. "To-morrow is Friday. I am not a bit superstitious, but our friends who advised us not to move here would certainly give me the laugh if we did not make a go of it."

"So it came about that Smith ran over to a sawmill that was on the property where my father had bought the land and obtained a pick and two shovels. I have it on the authority of Smith, 44 years in our employ that my father wielded the pick and Smith and Bevan the shovels, then and there starting the erection of our present plant of sixty buildings, covering 50 acres of land."

Tacony, when Mr. Disston shifted his plant thither, boasted a dozen dwellings. The present population is 12,000, housed in modern two and three-story buildings back of Disston Park, the spacious, rectangular strip of green one sees from the car windows of a Pennsylvania Railroad train. This park was dedicated to the city by Mary Disston, the wife of Henry, as a memorial of the founder. On the river side of the tracks is the saw works, and a four-acre ball grounds with grand stand and bleachers. This latter is maintained by Disston for the use of the athletic association connected with the works.

Nearly 300 acres of land have been developed by the Disstons at Tacony, that portion on the high ground northwest of the railroad station being laid out in building lots, with streets intersecting at right angles, provided with sewers and water mains. To supply the residents with water the Disstons put in a plant.

As showing the intimate relation between Henry Disston and his men, William Disston said:

"Going through the shops one day father came across a man who was frequently remiss—an habitual absentee.

"Say, Jack, this thing has been going on too long," he said. "You will have to clear out; you are discharged." The man left.

THE DISSTON CRUCIBLE

"Next morning, to father's surprise, the man was back at work.

"Jack, didn't I discharge you yesterday?" he said.

"Oh, yes," said the workman. "But if you don't know when you have got a good man working for you, I know when I have a good boss." The man stayed."

A LESSON FROM THE ANCIENTS

The birth of the skewback handsaw, which revolutionized the trade, according to Mr. Disston, was a lesson learned from study of the tools of the ancients. He said:

"One morning in 1873 my father remarked to one of his right-hand men, Albert Butterworth: 'I have been going over the history of Egypt and Rome, and from the illustrations I find that the shape of the saw blade is about the same now as then. Get a piece of chalk.' Al did so, and father had him draw the outline of a saw blade on the office floor.

"Don't you see there is more blade than is required?" he said to Butterworth. "It is too wide. That width is not necessary. It only adds to a man's labor to push and pull a wide saw. Just cut a section off the back, curve it. That's the idea." Our drafting room made up the new handsaw, and it subsequently gained world-wide fame.

THE SECRET OF SUCCESS

In a single year Disstons manufactured 4,250,000 hand-saws; 150,000 circular saws; 500,000 cross-cuts, mill and mulay saws; 2,225,000 butcher saws and blades, and hack-saw blades; 720,000 compass, keyhole and web saws; 1,600,000 feet of band saws; 125,000 cane and corn knives; 500,000 brick and plastering trowels, and over 12,000,000 files.

"Our export trade is about 50 years old," said William Disston. "It dates from a letter to Harry Disston, a nephew in England, who conducted a hardware store there and had tried some of our saws. Henry Disston wrote: 'Why don't you wake up?' How well he responded to this friendly dig is shown by the present sale of our product in practically every foreign country on the entire globe."

Continuing, William Disston said: "The professional pride of this institution reached its pinnacle two years ago, when we had a visit from a representative of the most prominent saw manufacturer in Europe; a grandson of the founder. We had hit so effectively in the cutlery center that curiosity drove him to pay us a visit; a high class English gentleman, who frankly told us, after going the rounds of our shops, that there was no sorcery in our success, but that we had made our place through scientific methods, and he was not surprised that we could pay our workmen more than is paid in other countries and still sell in competition abroad."

The writer found that the first great economy of the Disstons was the manufacture of their own steel, which dates back to 1854. Before the Civil War it was customary for American saw makers, not only to depend upon English sources of supply in steel, but to return the scrap to England for remanufacture. Mr. Disston decided first to manufacture his scrap into ingots and roll therefrom saw plates, and later he extended his business to include the production of steel. I saw huge piles of the best Swedish iron around the yards, and witnessed its transformation by many processes to the finest steel.

(To be continued.)

SENSE AND SENSIBILITY

A young lady was visiting her New York cousin, and was being entertained gayly at dinner at one of the restaurants. She had taken a cocktail with the rest of the party, and a little later her relative noticed that she was sitting rather limply back in her chair.

"Why, Marion!" she exclaimed. "Do you feel that cocktail?"

"Yes, Cousin Emma," she replied, languidly, "I feel it, but it doesn't annoy me."—*Exchange.*

CAUGHT A TARTAR

"Chee, Alf, where'd y' git th' black eye?"

"I was chasin' that new kid next door an' I caught 'im."—*Judge.*

THE DISSTON CRUCIBLE

WHO'S WHO IN THE SAW WORLD



E. F. COOPER

YES, "Coop" has been in here before but while we're congratulating ourselves to the extent of an "Exposition Number" on the wonderful success of our Exhibit, it's no more than fitting to say a few words about the man to whom the success is, in large measure, due. At that, we're sneaking them in sort of surreptitiously—if we didn't they wouldn't get in. "Disston's" praises can't be sung too loudly for Mr. Cooper, but he would "kill" any effort to pin a little credit on *him*—if he knew of it.

Mr. Cooper has worked with untiring energy and boundless enthusiasm to make the Disston Exhibit what it is. He has spared no effort and has disregarded personal inconvenience. Two trips from coast to coast and vice versa were incidental to Mr. Cooper's activities in carrying the double burden of his regular responsibilities and the vast detail in connection with the preparation of the Exhibit.

From the development of the design to the actual installation, Mr. Cooper

has superintended the work on the Exhibit with characteristic thoroughness and enthusiasm.

For the pleasure and information which countless visitors will derive from a study of the Disston Exhibit, they are indebted very largely to one man, E. F. Cooper.

Since Oct. 1st, 1871, Mr. Cooper's name has been continuously on the Disston pay roll. His father and grandfather were mill men and he inherited an enthusiasm for saws and machinery.

After joining the Disston forces, he spent two years in the factory, then entered the Disston saw mill. This mill was fully equipped with the best machinery procurable and was designed to afford a practical means of studying and testing out new developments in saw manufacture. Here Mr. Cooper had six years of practical mill experience besides gleaning many valuable ideas from discussion with millmen from all parts of the country who visited the Disston Plant.

At the instigation of HENRY DISSTON, who wanted at all times to be closely in touch with the saw mill business. Mr. Cooper engaged in saw milling and mill wright work in various states, at the same time selling DISSTON saws on commission. Six years later he dropped the milling end and devoted his time for the next five years exclusively to selling Disston saws and tools—visiting every lumber district in the country.

Then for two years he engaged in the mill business for himself—still carrying the Disston mill goods line on commission. Since 1892 Mr. Cooper has given his time exclusively to Disston. His advance to his present position was the direct result of his loyal work, broad experience and an unusual capacity for absorbing information.

With his long service in the field and his winning personality, Mr. Cooper has a constantly growing host of friends, and his steadfast belief in Disston is daily adding to the already long list of Disston enthusiasts.

POSITION WANTED

Competent filer with 14 years' experience, desires position. Thoroughly equipped to handle any single cut saw. Address K. M. Brown, Combs, Tenn.

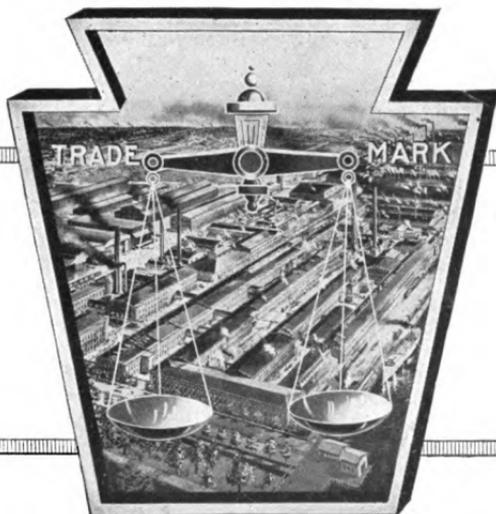
THE DISSTON CRUCIBLE

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TABLE OF CONTENTS

	PAGE		PAGE
FELLING OF WORLD'S FAIR TREE (<i>Frontispiece</i>)		ASTORIA VENEER MILLS AND DOCK Co.	55-59
EDITORIAL CHAT	51	NOTES ON TROPICAL AMERICAN WOODS	60-61
MR. FRANK DISSTON	52	WILL PROCTOR	62
IMPRESSIONS OF THE DISSTON PLANT	53	WHO'S WHO	63
		SAWDUST	64



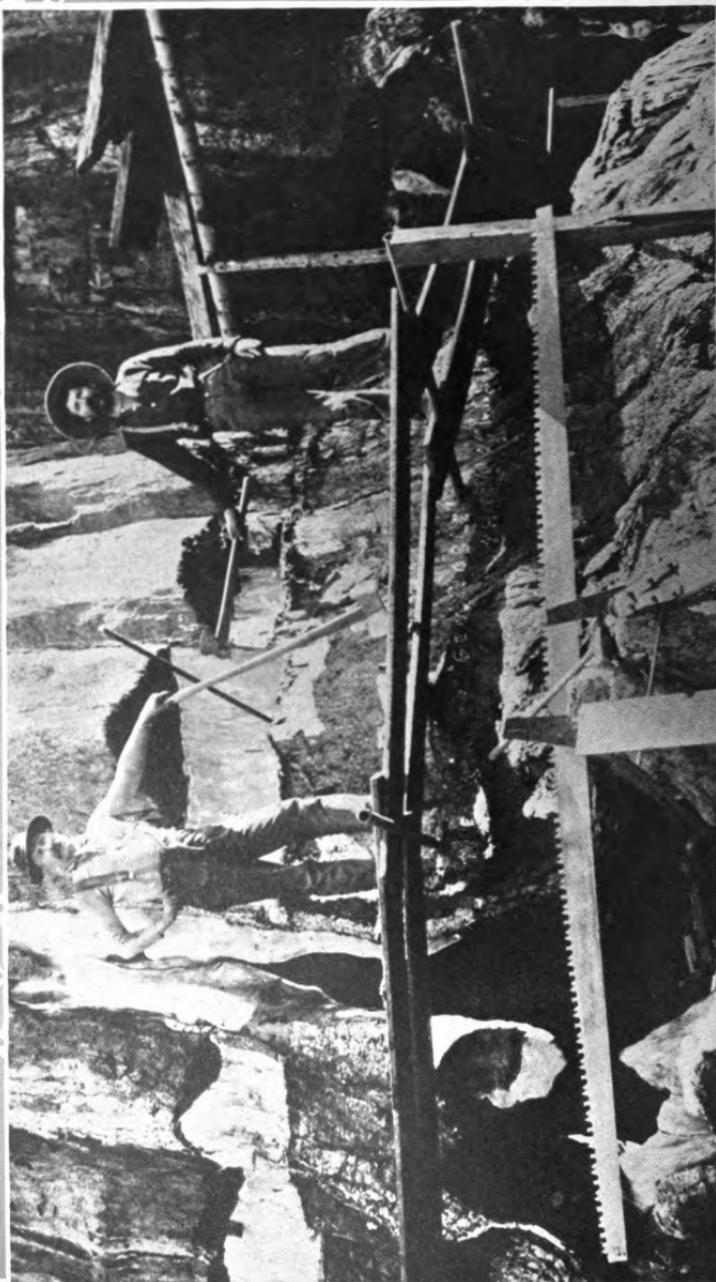
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THE FELLING OF THE TWIN OF "GEN. NOBLE," THE WORLD'S FAIR TREE

THE DISSTON CRUCIBLE

A MAGAZINE FOR THE MILLMAN

VOL. IV.

MAY 15, 1915

NO. 4

EDITORIAL CHAT

SPECIALIZATION

SPECIALIZATION, the foundation of progress in all branches of the arts and sciences, seems from the records, to be only a few days younger than the human race itself. Old Mother Eve appears to have started the game—her speciality being fruit-tasting. Soon, however, she branched into salesmanship and convinced old Doc Adam, against his better judgment, that he, too, wanted a bite.

Probably, however, prehistoric man's division with his mate of the domestic chores, was the first evidence of practical specialization. Not only did he find it less burdensome to confine his energies to hunting the family's daily sustenance and leaving its preparation to his mate, but he learned that concentration of effort made his work more productive. In other words, increased his skill or efficiency.

With the development of civilization, the community evolved, and the lines of specialization increased and broadened. Different members of a colony would assume responsibility for the various branches of the colony's activities and welfare, and by concentrating their efforts along the chosen lines, secure results far beyond the reach of the unorganized endeavors of individuals.

So keenly is the value of specialization recognized by modern civilization that there is not a branch of activity in the arts and sciences that is not the subject of specialized research and study. Moreover, today we have in the various branches, subdivisions any one of which receives more analytical study than a century ago could have been devoted to the entire group.

HENRY DISSTON & SONS have specialized for three-quarters of a century in a single branch of the tool making industry—the manufacture of saws and kindred tools. That there is much to be learned cannot be questioned in view of the tremendous strides which science is taking. That specialization has given them unquestioned supremacy is seen in the universal demand for their product in all parts of the civilized globe.

*Quality
Sells*



MR. FRANK DISSTON

FRANK DISSTON has been elected to the presidency of HENRY DISSTON & SONS, Inc., to fill the vacancy created by the recent death of WILLIAM DISSTON.

He is a nephew of the former President, and though still a comparatively young man, is, with one exception, the oldest of the third generation of descendants of HENRY DISSTON, the founder of the business.

With keen business judgment and executive ability, backed by a thorough practical knowledge of the business, Mr. DISSTON is admirably equipped to direct the Company's affairs. That the unrivalled prosperity which HENRY DISSTON & SONS have enjoyed for so many years will continue and increase under his able administration cannot be questioned.

IMPRESSIONS OF THE DISSTON PLANT

By an Independent Observer

(From the Philadelphia Public Ledger, Monday, Feb. 22, 1915.)

(Continued from April)

DIFFERENT TYPES OF SAWS

ONE can only grasp a few details of such a business. I noticed that the teeth on certain handsaws extended in a different direction from the others. This was because the Japanese and Chinese—they were for the Oriental trade—pull their saws toward them when they work them. Now the Caucasian works his saw away from him, and the teeth are shaped and sharpened accordingly. The handles of the ordinary saws are made of apple wood.

Then there was a large circular saw with each tooth tipped with a black diamond. I counted 150 diamonds on the saw. It was explained that this saw was made to cut marble. A crosscut saw, 16 feet long, was for work among the big trees of California. I saw a chain saw made to cut wires, and supplied to the United States army; a penknife with a tiny two-inch blade for surgeons, and various sorts of folding saws. There was every variety of saw, from the diminutive keyhole saw to the huge circular and bandsaw.

In many departments of the plant I found the electric drive in operation. In one shop a score of men were seated before huge grindstones, grinding blades smooth and true. This they called "riding the stone," 2,500 tons of grindstones being consumed annually. A wall enclosing the entire property, 7 feet high, 1½ feet thick and 2,000 feet long, has been made of discarded grindstones, the accumulation of a few years. These worn down grindstones were cut to size and dressed up for use in building the wall.

In another shop I saw men making and polishing the little tiny screws that go into the handle of a handsaw. One workman polishes 30,000 of these screws in a day. Testing of materials and finished steel was going on in a special laboratory building, a most important work, I was told. Long

white snakes of red-hot steel were wriggling over the iron-plate floors of the steel works—I cannot begin to remember all I saw.

"DON'T LAG BEHIND," A GOOD MOTTO

"We divide our goods into two general lines, shelf goods and mill goods," said William Disston. "We don't try to undersell foreign saws. At the start our export trade was done through New York commission houses. Then we branched out, finding that to meet the German and English competition there had to be personal representation. Now and again we send a man around the entire world. The trip takes 18 months, and our representative goes with three trunks. In Canada we have a branch manufacturing plant, at Toronto, with S. Y. Dingee, once a Philadelphia boy, in charge."

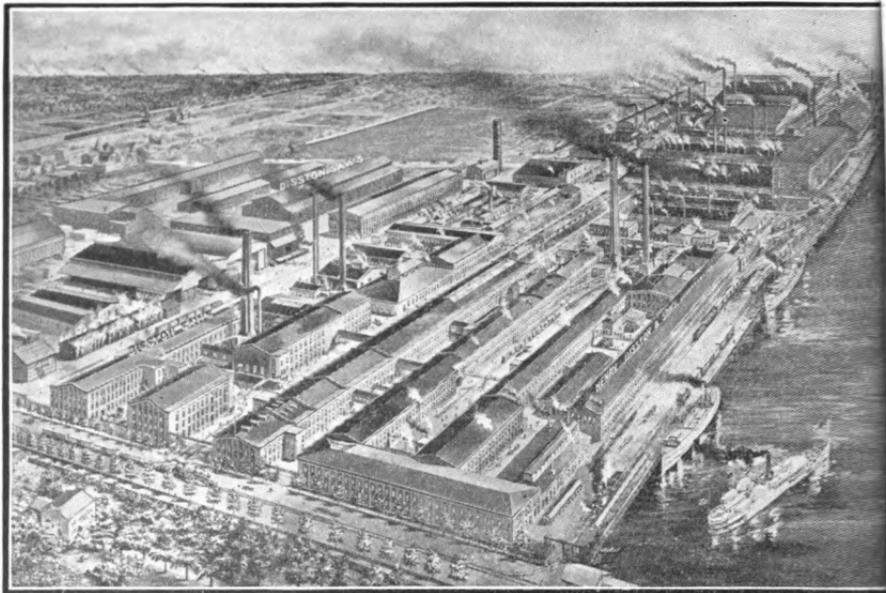
"How about your trade with the Orient?" I asked.

"We have men out there now engaged in educating the people," he said. "As far as possible we meet the customs and ideas of a foreign country. Often we can impose our own ideas exclusively and still get large orders. Take the bandsaw. Our founder brought two over from Paris, France, in the 60s, and in the 70s we were exhibiting and introducing improved bandsaws of our own design and manufacture. 'Don't lag behind' is a good motto for any manufacturer."

Mr. Disston said that a general manufacturer's agent as a medium for salesmanship was a poor substitute for a concern that could afford the expense of direct representation. In conclusion, he remarked:

"By reason of the European war there is no doubt that wonderful opportunities have opened up for the American manufacturer, notwithstanding the fact that the more progressive of these have already realized the vast business

THE DISSTON CRUCIBLE



developing in foreign countries. Increases in efficiency and production by the manufacturers of the United States have necessitated new fields. Our manufacturers have naturally, to a considerable extent, had to meet the competition of those nations which are at present at war, and, with the conditions now existing, should take advantage of the opportunities made by the war.

"Particularly is this true regarding the South American Republics. These countries require our keenest investigation, but the development will not come quickly; it will be a gradual

growth. A close study of their requirement is necessary. Goods suitable for their needs should be supplied. Personal solicitation by those who are acquainted with the customs and language and the establishment of banking and credit facilities under our control are necessary. We must thoroughly understand at the present time these countries are in the midst of depression, the same as that prevailing in the United States. Until a reconstruction of the method in doing business is accomplished appreciative returns on any efforts made at the present time cannot be expected."



PART OF A MOWING MACHINE THIS TIME

The occurrence of bits of metal, stone, etc. deeply embedded in the logs is, of course, quite common. It is, however, interesting to learn the effect on the saws.

Mr. Reese's letter indicates his attitude toward Disston Saws. He says:

Wellsboro, 2/12/15.

HENRY DISSTON SONS.

GENTLEMEN:

I send you today by parcel post a guard off safe mowing-machine which I found in a pine log I was sawing. You will see for yourselves what one of the Disston Saws will do even to a mowing machine. It was in the log about 5-inches. It was a chisel tooth saw and it only sprung a back, but it hurt the bits pretty bad. I would not use any other make of saw.

Respectfully yours,

W. D. REESE.

Wellsboro, Pa.
R. D. 11.

THE DISSTON CRUCIBLE

ASTORIA VENEER MILLS & DCK CO.

ONE would hardly expect, perhaps, to find so close to the busy streets of New York, such a large saw-milling concern as in evidence when you visit the plants of the Astoria Veneer Mills & Dock Co. at Long Island City just across the river. The magnitude of this plant can well be accounted for however should you have the pleasure of meeting their Mr. Alex. S. Williams, President, or Mr. R. T. Williams, who have built up this business and are men of activity which is reflected through the whole organization by whom they are surrounded. It is

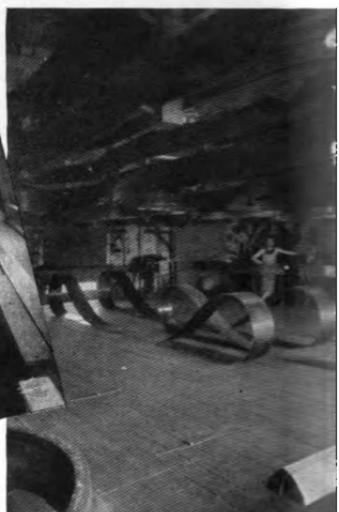
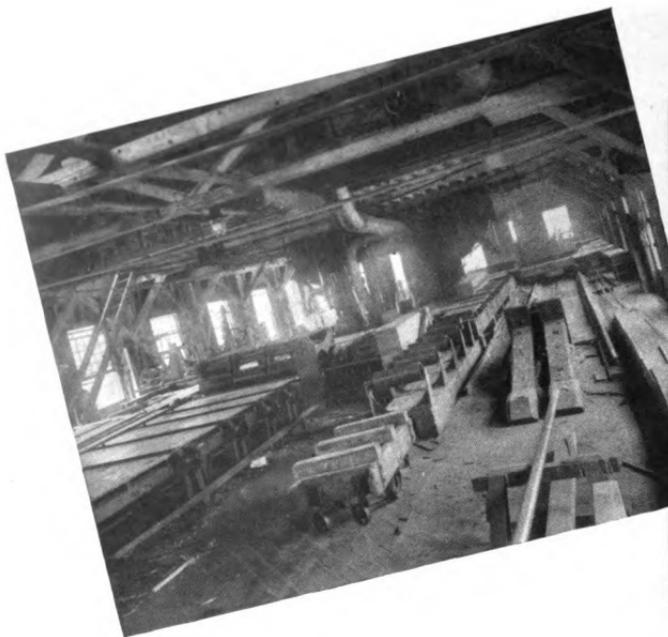
ing to make things run along smoothly which seems to be a habit at this plant. Not overlooking Mr. Jesse Augustine who is mill foreman and a man who understands a mill from "A to Z." In addition to the saw-mill there is the equipment consisting of slicing machines, segment saws, etc., used for turning out veneers of which this concern are very large manufacturers and to see some of these slicing machines cutting veneers as thin as 1/140 of an inch is extremely interesting, even if not connected with this branch of trade. The rush of business they have been receiving has made it necessary in



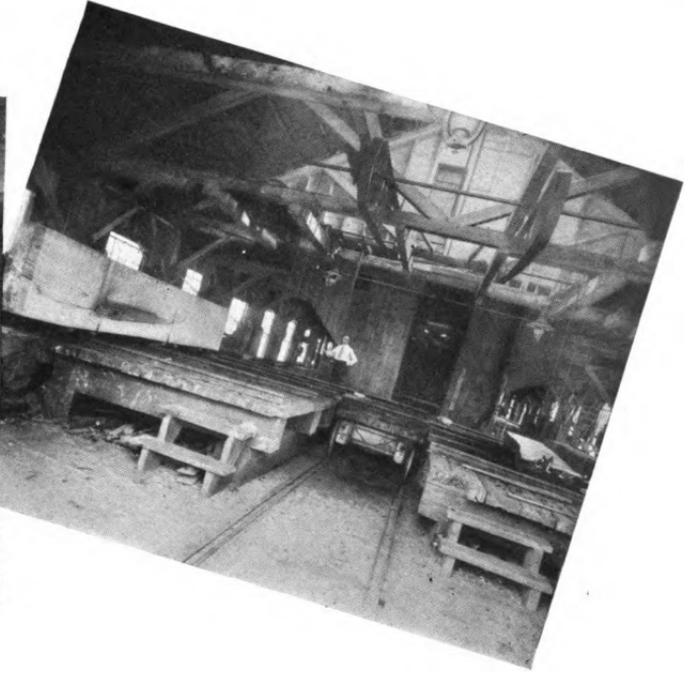
common to hear the men speak of "our" plant from a spirit of loyalty and pride in being connected with this progressive concern which is forging ahead with such rapid strides.

We show a picture of the main plant consisting of a 7-foot and 9-foot band Mill, complete with edger, trimmer and the other usual equipment. Mr. William Thatcher, Sr., Superintendent, with his assistant Mr. Chris. Straub can both be found "on the job" help-

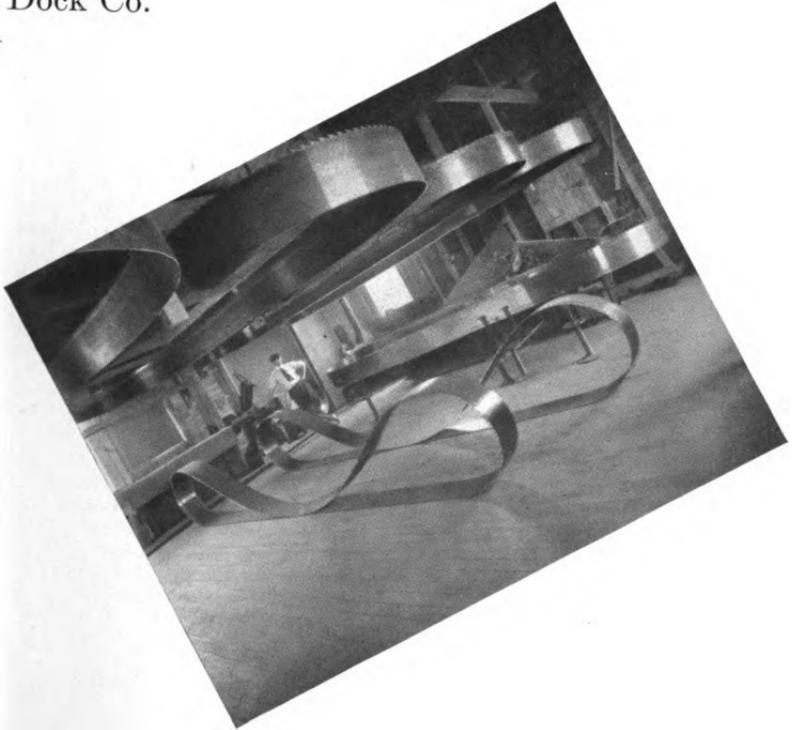
order to keep up with their orders, to increase their already large outfit by erecting another saw-mill nearby, equipped with 12-inch band saw-mill, complete with other machines. Although the output of this concern is not as large as some of the big Western Mills, considering the fact that they are cutting the hardest and most valuable kinds of wood, where it is necessary for the cutting to be as near perfect as possible, the results they are secur-



Astoria Veneer L
Long Is
New



Mills and Dock Co.
and City
York



THE DISSTON CRUCIBLE

ing entitles the Astoria Plant to a high place among American saw-milling concerns.

In the foreign field we often come in touch with concerns cutting up large quantities of hardwood who do not believe it is possible to use successfully a band mill for the purpose. To them a plant of this kind would certainly be a revelation and even many American saw-millers would be surprised at the quantity and perfection of the lumber manufactured.

With the number of dogs, stones and nails that are encountered, under

by Mr. J. E. King, took charge of the saws during the day shift and his assistant, Mr. James Martin, helped by Mr. Carl Kronmuller, had charge at night. It is well to mention here that as a sign of the firm's appreciation, Mr. Martin has been given charge of the new mill which they have just erected. This record certainly shows the careful and thorough manner in which the details in the filing room are looked after and also discloses such a friendly rivalry between the day and night shifts as is seldom seen.

The figures for one year's run on the



ordinary running conditions the strain on the filing room can well be imagined. At these mills, however, not only have they been running steady, but they have recently finished a run of over a year working steadily week in and week out, cutting for twenty-one and a half hours a day. (Ten hour day and eleven and a half hour night shifts). We are giving the very remarkable record of figures that were kept in regard to the saws used and which they claim, constitutes a record. Mr. John O'Rourke, head saw-filer, assisted

two mills starting November 13, 1912 and ending November 12, 1913, detailing particulars of the saws used in the cutting of hardwood with two seven-foot band mills, using blades 10-inch wide, 16-gauge, operating without a shut-down except that one mill was stopped for six weeks to be replaced by a 9-foot mill using 12-inch band saws 15-gauge, which was used for the balance of the run, are as follows:

RECORD FOR NIGHT SHIFT

Saws used 2471

THE DISSTON CRUCIBLE



WHO'S WHO

MR. J. D. McCLURE, shown above in the filing room of the Gates Lumber Company of Wilmer, Ark. is one of the South's best filers. Moreover, he combines with a most winning personality, rare ability as a conversationalist. One listens with thorough enjoyment and no little profit to his reminiscences ranging over a long, ripe experience, and genuinely regrets the approach of the hour for taking leave.

Mr. McClure takes great pride in the appearance of his filing room and the condition of its machinery and appurtenances, and the visitor instantly recognizes that great cleanliness and order are a part of our friend's creed.

Keeping always abreast of the times, always up-to-date (sometimes a little ahead) in the care and manipulation of saws, it is not strange that his fame has grown and that he is recognized as an authority on the subject.

The Gates Lumber Company are operating a Short Leaf Yellow Pine mill consisting of a 14-inch Band and a 10-inch Horizontal Re-saw—the daily capacity being upwards of 80,000 feet of well manufactured lumber.

Mr. McClure began filing in 1870 at Clinton, Iowa, his first billet being

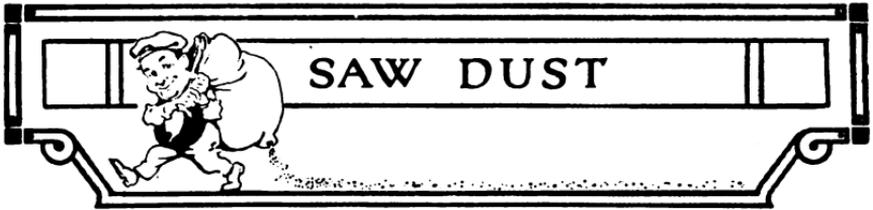
with Messrs. C. Lamb & Son. He remained in this position until 1883. He was there when the first Band Mill was installed, which, by the way was operated with DISSTON SAWS. The equipment of this mill was two bands and two gangs.

The next move was to the Lyons Lumber Company, where four years were spent, the equipment being two bands and a gang.

Then Mr. McClure went South, and filed for the Woodworth Lumber Co., Bivens, Tex. also filling the position of Foreman, the mill being a large fast Circular Mill, and later went with the same company to Monroe, La.

For the past 17 years, Mr. McClure has been connected with the Gates Lumber Company, Wilmar, Ark., and during his long, interesting experience, has always used DISSTON SAWS, except when he bought other makes just for purposes of comparison, but he assures us he was never able to obtain the same perfect and uniform results as he did from DISSTON blades, and thus, after this wonderful experience, we are proud to own Mr. McClure as one of the best friends of the DISSTON products.

We wish Mr. McClure a long and happy life and he will always carry with him our warmest regard.



SUBSTITUTION

Seth had been trying to cure himself of the alcohol habit by eating, instead of drinking, when the craving came on. One day he met a friend, who asked him how the plan had worked.

Seth said: "Fine. Whenever I've felt like drinking I've made for a quick-lunch counter. Sometimes it's been hard. For instance, the other night in the room next to mine at the hotel a fellow shot himself. It was awful. There was a shot and then the body thudded to the floor. I jumped out of bed and dashed down four flights and made for the office just with enough breath left to pant to the clerk:

"'My God! the—man—in—the—next—room—has—just—killed—himself—it—was—awful—for—God's—sake—give—me—some—ham—and—eggs—and—a—piece—of—lemon-pie.'"—*Exchange*.

ROUGH ON TRAINS

A well-dressed lady rushed up to a clerk in the household goods department of a New York store, and, without giving the clerk a chance to ask what she wanted, exclaimed: "Give me a mousetrap, quickly, please, because I want to catch a train."—*Collier's*.

"And, Lizzie, do you have to be called in the morning?" asked the new mistress.

"I don't have to be, mum," replied the new assistant, hopefully, "unless you just happens to need me."

Teacher—"A train leaves Squeedunk, traveling thirty miles an hour. It is followed, thirty minutes later, by a train traveling sixty miles an hour. At what point will the second train run into the first."

Boy—"At the hind end of the rear car, ma'am!"—*Woodworker's Record*.

SHE SPOKE THE TRUTH

Two ladies, whose husbands are members of the faculty of Oberlin College, went to call on the new professor's wife. They were shown into a room where the small daughter of the house was playing. While awaiting the appearance of their hostess one of the ladies remarked to her friend, at the same time nodding toward the little girl, "Not very p-r-e-t-t-y, is she?" spelling the word so that the child should not understand.

Instantly, before there was time for the friend to reply, came the answer from the little girl, "No, not very p-r-e-t-t-y, but awfully s-m-a-r-t."—*Exchange*.

PASS IT ON

If you have an old lead dime,
Pass it on.

Do not fuss and waste good time,
Pass it on.

You may feel real mean, it's true,
But in just a week or two
It will come right back to you.

Pass it on.

—*Sunset*.

The Bright and interesting Directory Journal, the organ of the Association of American Directory Publishers, says this of two members:

"G. A. Wood and R. N. Stone were walking down the street. They passed a pretty girl and Wood turned to Stone and Stone turned to Wood—and then both of them turned to rubber!"

INCREDULOUS

"I was outspoken in my sentiments at the club to-day," said Mrs. Garrulous to her husband the other evening.

With a look of astonishment he replied:

"I can't believe it, my dear. Who outspokened you?"—*National Monthly*.

THE DISSTON CRUCIBLE

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TABLE OF CONTENTS

	PAGE		PAGE
THE DISSTON MIXED PRESSURE TURBINE GENERATOR PLANT <i>(Frontispiece)</i>		"A B C" OF INSERTED TOOTH SAWS	74
EDITORIAL CHAT	67	NOTES ON TROPICAL AMERICAN WOODS	75
ELECTRICITY FROM EXHAUST STEAM	68	THE FIRST STEAM LOG TRAIN	77
THE TREMONT LUMBER CO.	71	WHO'S WHO	78
FILING ROOM TREMONT LUMBER COMPANY'S MILL	72-73	IT CAN'T BE DONE	79
		SAW DUST	80



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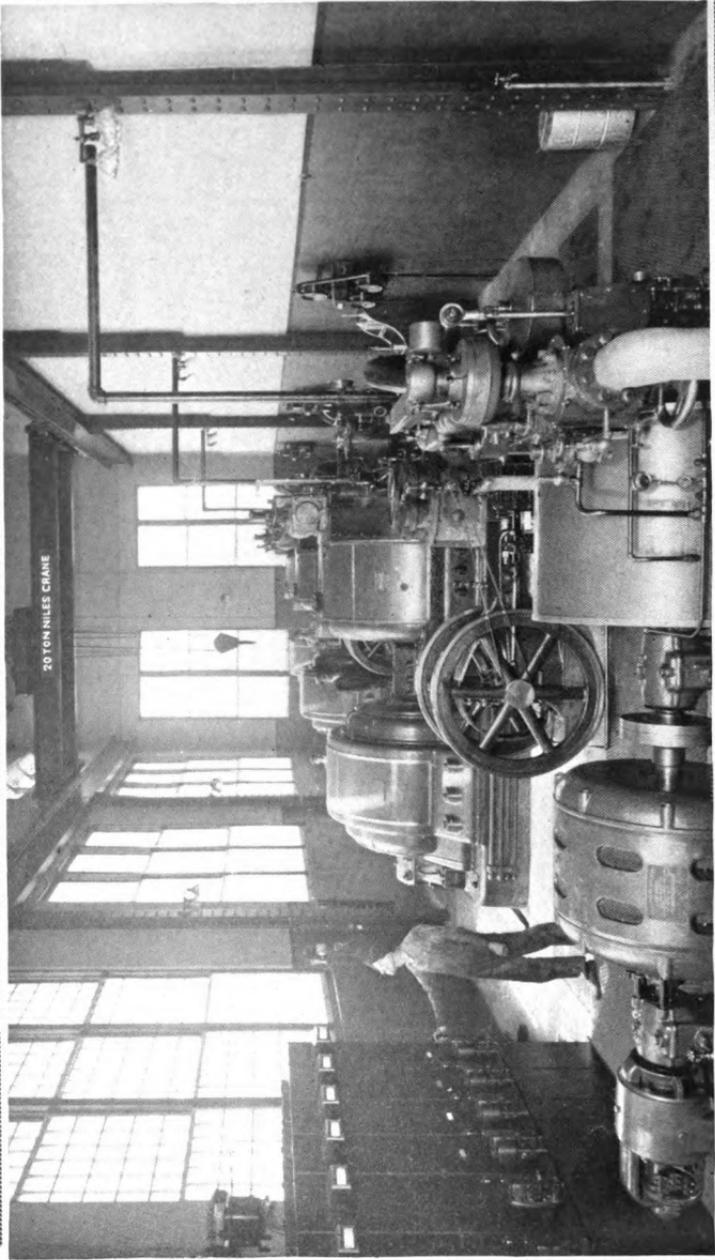
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20 TON NILES CRANE

THE DISSTON MIXED-PRESSURE TURBINE GENERATOR PLANT

THE DISSTON CRUCIBLE

A MAGAZINE FOR THE MILLMAN

VOL. IV.

JUNE 15, 1915

NO. 5

EDITORIAL CHAT

PRESTIGE

WHEN we can't find, in the English language, a word with just the right shade of meaning to convey our thought, we appropriate one from another tongue. If it fills the bill, it becomes popular, and soon is considered as our very own—much as your neighbor considers the lawn-mower he borrowed last Spring and used all Summer.

Such a word is "Prestige." After someone had gone ahead and achieved a reputation for superior ability, acumen initiative, influence, etc., we found ourselves lacking a word which adequately embraced all these attributes. So we borrowed "Prestige" from the French.

Prestige is more easily described than defined. Probably it is best considered as a reward for excellence. And like most rewards it carries its responsibilities. Whether in the prize-ring or the commercial world, prestige is constantly challenged. Hence, unceasing improvement or the yielding of supremacy.

As the commercial game is more in our line than the pugilistic, we will consider prestige only as applied to business. Prestige implies all the factors of commercial supremacy. Where do you look for quality and service in any given field of endeavor?—for new developments—improved processes and product? To the concern, of course, which specializes; which is backed by long, practical experience; to the concern with abundant resources and every modern refinement of machinery and equipment; to the concern with representatives in every part of the globe in constant, intimate touch with practical conditions. *That's* the firm with *Prestige*—and in the saw field, that firm is DISSTON.

ELECTRICITY FROM EXHAUST STEAM

MODERN efficiency is converting former burdens into sources of profit on a scale which makes a contemplation of the prodigal waste of a few years ago appalling. By-products formerly discarded, now yield returns comparing favorably with, and in numerous cases exceeding, those from the product in the preparation of which they are derived. Increased efficiency is the watchword of the day, and the result is constant improvement in processes and product.

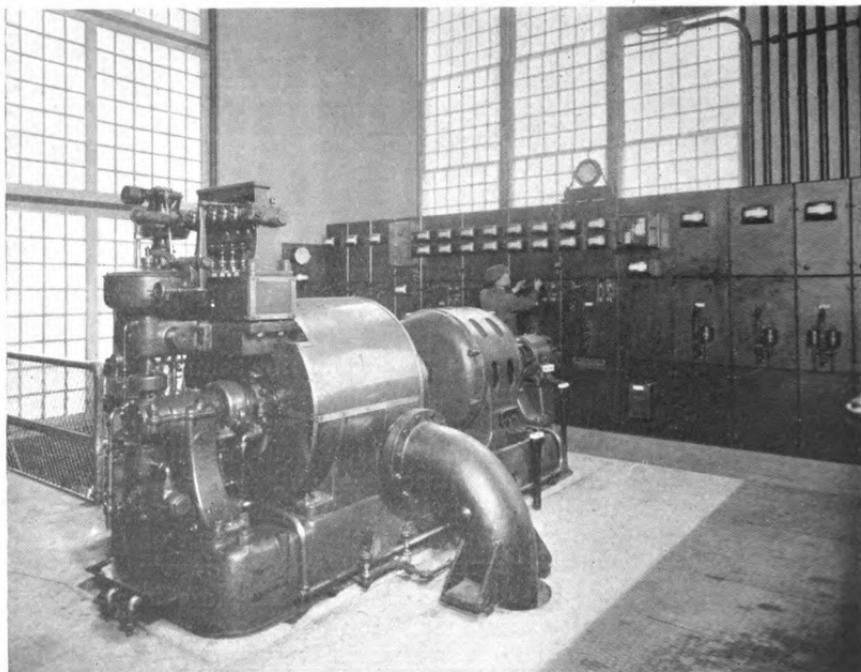
Up to a comparatively recent date, steam was considered to have performed its mission when it had turned the engine over. That it still retained a large percentage of its initial energy was, of course, recognized; that it manifested itself directly in the coal bill was regrettable. But exhaust steam was treated then (and still is to a great extent) in about the same

way as was the by-product of the old days.

The mill steam equipment of the Dissron plant includes five steam-hammers, varying in size, capable of striking blows ranging from 50 to 4,500 lbs., and 13 rolling mill steam engines, with a total capacity of 4,000 horse-power. The exhaust steam from these units approximates 60,000 lbs. per hour.

From this exhaust, at one time dissipated into the air, electrical energy for the entire plant is derived. Avoiding technical details which have no place in this article, this is accomplished as follows:

All exhaust steam is piped to a receiver, from which it is delivered to three horizontal steam-turbine generators. Electrical energy in this manner is developed, amply sufficient to operate a minimum of 114 motors,



THE DISSTON CRUCIBLE

a total of 2,800 horse-power—the entire electrical power of the plant literally wrested from the air. A saving of thousands of pounds of coal; expensive boiler-room equipment; pay-roll, etc.

The installation two years ago of the Disston mixed-flow steam-turbine plant, second in size only to that of the General Electric Company as a strictly exhaust steam plant, is typical of the efficiency of Disston methods. And this efficiency reverts directly to the benefit of the users of Disston products.

When this enterprise was started

seventy-five years ago, it was not the first in the game, and no business could have begun any more modestly or under heavier handicaps. Why, then, has it attained to its pre-eminent position—completely outdistancing the rest of the field? Because the unswerving policy for three-quarters of a century has been to produce the best tools possible to make with the available equipment.

That is why the efficiency of Disston methods has such a vital and direct bearing on the interests of every millman. It means superlative equipment and increased profits to him.

MACHINE-ROOM REMINDERS AND PRECAUTIONS

CERTAIN PRACTICAL RULES FOR FOREMEN ADOPTED IN THE HOPE OF REDUCING THE NUMBER AND SEVERITY OF ACCIDENTS.

AT ONE plant a series of rules for safety were drawn up as a guide to the foreman in making the necessary reports on existing conditions and as a guide to alterations for the better. In brief they were about as follows:

All new transmission devices should be arranged for being easily guarded. Shield old ones as well as the new.

Where their is danger of being caught by belt, have a pipe or angle railing 18 inches from pulley or belt.

Provide wire-mesh or perforated-plate casing wherever belt is such that any one may be caught between belt and pulley.

Incose that place where the flying ends of a broken belt may strike passersby.

Allow the width of a belt between any two pulleys or between pulley and a hanger on shafting where the belt might wedge and perhaps pull down shafting.

Make belt splices without any ragged edges or other projections to catch employees' clothes. Endless belts preferred.

Inspect belts frequently. Keep them safe. Don't have them tight.

Use a mechanical device in shifting all belts.

Have belt held away from shafting by hook or perch whenever belt is unshipped.

Cover shafting not over 12 inches above floor, and incase or rail off

shafting over 12 inches and not over 7 feet above floor.

Incose or otherwise guard exposed ends of shafting.

On overhead shafting requiring oiling try to provide permanent footing for oiler.

Install a safety switch for electrically driven shafting to be used when any one is working on it. Put switch at top of ladder or anywhere not easily tempting the meddler or the misinformed.

Guard shaft couplings where safety style is not used.

Have shaft ends project at least the diameter of shaft beyond hub of gear or pulley so that key can be locked and gears or pulleys prevented from working off.

Note that shaft hangers must be strong and well secured.

Cut off or guard all projecting keys so exposed on shafting that any one might be caught by them.

Adopt cotter pins or spring washers or check nuts to keep bolts where they belong.

Bonnet the projecting setscrew, or bury it by countersinking, or put it into a collar having flanges high enough to shield the nuisance.

Beware of hoisting by use of the shafting. Employ hand tackle and block, or other hoisting facilities.

—Wood Craft.



ABOUT THE TOUGHEST YET

Proud owners of Disston Saws frequently write in, describing how their saws stood up under the severe strain of running into metal, etc. but about the stiffest job we've yet heard of a Disston tackling was that of cutting a flint rock. This occurred at the mill of Mr. Chauncey B. Marsh of New Milford, Conn. Mr. Marsh describes the accident as follows:

"Under separate cover I am sending you a photograph of Blue Flint Stone which I struck with one of your 48-inch Inserted Tooth saws. The chestnut tree in which the stone was embedded was one of the landmarks of Conetia Farm; nearly six feet diameter at the base. While sawing the second cut

(20 feet up) nearly in the heart I struck this stone at top speed. A stream of fire ran out the bottom of the cut as if I had struck a Zeppelin bomb. Of course it shattered the bits and I thought my saw was ruined; but a new set was put in and judge my surprise when the saw started its work again 'slick as new.' I have used your saws for twenty years and when other manufacturers have urged me to buy, I say 'No, Disston Saws are good enough for me, and now that I can saw flint rocks I am more than satisfied.' The lengthwise mark on the face of the stone is where the saw struck it and cut a gash."

Yours truly,
C. B. MARSH.

A RECORD FOR MR. JOHN C. VAUGHAN

Mr. Vaughan, who files for the Weidman Co., Trout Creek, Michigan, claims for himself and Disston Saws a record for his section of the country. He says:

"We broke the record for this section of the country cutting with a single band on May 8th, 68,229 feet of hemlock and the part that will interest you people is that I used Disston Saws in making the cut."

DANGER AHEAD

Skipper of Tramp (having lost his bearings on a dark, stormy night, trying to get his position on an old chart): "If that's Cardiff Bill, we're orl right; but if it's a fly-spot, 'eaven 'elp us!"

BAND FILER WANTS POSITION

First-class, experienced band filer desires connection in this capacity. Address:

J. L. Ervin, Jenningson, W. Va.



THE TREMONT LUMBER COMPANY

THIS company, located at Winnfield, La., of which Mr. W. W. Dantzer, is Superintendent, and illustrations of which are shown on this and the next two pages, is another of the many lumber companies to swear by the quality and service of DISSTON SAWS.

Mr. George W. Emory, head filer expresses his satisfaction and enthusiasm in the following interesting letter.

Eros, La. April 24, 1915.

HENRY DISSTON & SONS, INC.,
Philadelphia, Pa.

Gentlemen:—For some time I have intended writing you in regard to the DISSTON SAWS we have here.

I wish to say in the beginning that they are as nearly perfect as skill can make them.

This is a two 12-inch band and a 10-inch band re-saw outfit. We have quite a number of DISSTON SAWS, and they are all giving the best of satisfaction. All the saws that we bought last year, are still here in the filing room, worn down from 12-inches to widths ranging from 9¼-inches to 10½-inches. All have the factory braze, and not a crack or extra braze in a one of the lot.

I have here, one saw that I ran continuously through 1912-13 and ran it as an "extra" through 1914. The saw is still doing extra work, and stands as much feed as a new saw. It also has only the factory braze with not a crack in it.

I have two regular saws and a "regular extra" that have been pulled off the mill while at full speed. One of them has been pulled off twice. I re-worked them, and they are standing up as well as new saws, running every day.

The short side here has run twenty-two months without a crack.

Mr. V. L. Anderson is the sawyer. His home town is Duluth, Minn.

Now, I have some re-saws that I have worn out. Two of them were started in Jan. 1914, and are still running quarter on and quarter off.

We have some of the hardest timber in the country here—pine that has been tapped for turpentine. Practically all of the big logs are solid pitch on the butt cut.

The band mills "cant" from thirty-inches wide on down, for the re-saw. The saws stand up and cut right through without moving on the wheels. There is no friction feed on the re-saw, so it has to take these wide cants the same as a narrow one.

The record cut for the mill is 162,480 feet in ten hours.

In conclusion please allow me to state that it is always DISSTON for mine. Have used many makes, but find DISSTON always proves superior to all others. Have been using DISSTON SAWS since 1902, and am highly pleased to date with the results.

Very truly yours,
GEO. W. EMORY, Head Filer.



FILING ROOM IN ONE OF THE TREMONT



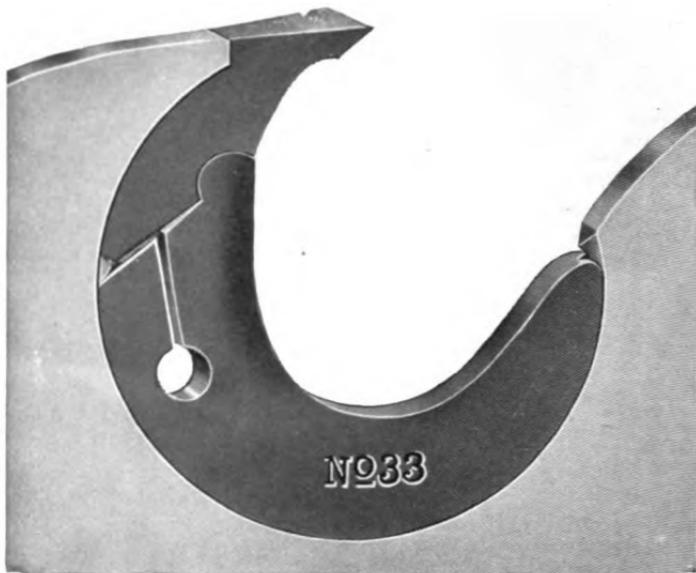
NT LUMBER COMPANY'S MILLS

"A B C" OF INSERTED TOOTH SAWS

TO start at the "ABC" of Inserted Tooth Saws, it is obvious that the reason this type of saw superseded the old Solid Tooth type, is, not only that it maintained its diameter, and was a more simple proposition for a mill man to look after without employing an experienced Filer, but the character of the construction of this particular type of saw

made it possible for the mill man to do more work with a given power.

It is just in this particular that one design of Inserted Tooth saws differs from another, and just so far as the maker is alive to the vital principles governing the scientific construction

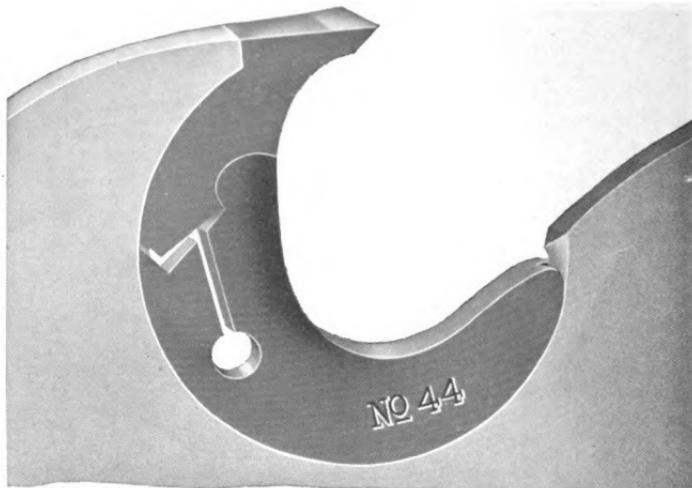


of a tool of this character, so far is this knowledge brought out in the design of the tooth employed.

In the beginning all makers strove to make an Inserted Tooth saw which could be made to run safely and satisfactorily. As competition became

keener, and it was demonstrated that a saw carrying an insertible tooth was feasible, improvement over the original crude idea was in order.

In this particular, as in all other details of the manufacture of saws, DISSTON has kept abreast of the times, and, as a general rule, years ahead of competitors.



THE FIRST STEAM LOG TRAIN

Interesting Personal Reminiscences of Alfred Truman—Description of the First Engine Used on a Log Train—One Man Constituted the Train's Entire Crew.

THE first hauling of logs by steam power over a tramroad was in the Spring of 1864, by the firm of Wright & Pier, then operating at the mouth of Callan Run on the Clarion River, seventeen miles north of Brookville, Penn'a. The idea was conceived by Mr. Wright, the firm hitherto having used horses, just as all lumbermen were doing, to haul logs in the summer time to the mills. An eight horse power portable boiler and engine was procured at Pittsburgh, shipped to Kittanning—the nearest point of railway delivery at that time, and from there wagoned to its destination, a distance of 65 miles.

At this early day, outside of machine shops, there were but two engineers in all of that region of Pennsylvania—Silas Miller, of Brookville, and myself, then a lad of 18. I was employed along with Brush Baxter, a millwright, to construct a car upon which to erect the engine, and thus convert the thing into a locomotive. It is safe to say, that when completed, it was the queerest looking locomotive the world has ever seen. The power from the engine was transmitted to the axles of the car by means of an eight inch rubber belt running from a pulley on the engine shaft to a pulley on one of the car axles, made tight by the use of a tightener pulley. The two car axles were connected by cranks and connecting rods.

The engine having been made to run in but one direction, we had to add an additional eccentric and eccentric rod, both rods being constructed so as to work on the same pin of the rock arm; so that whilst one of the rods was at work, the other hung in a leather strap and moved idly to and fro. To reverse the engine, one had to change the relative positions of the eccentric rods, and this could only be done by bringing the engine to a standstill.

The day having been set for the trial of the "Little Wonder," invitations were sent out to the ladies and

gentlemen of the surrounding farms, among whom was the Raught family, then in the midst of a world of forest wealth common to that noble region in those early days.

The day came, and with it the merry gathering of invited guests. The ladies, arrayed on the grass-plot bank above the tramroad, waving their handkerchiefs and wildly cheering as the little engine puffed and rolled away presented a scene the fairest and most animated ever witnessed on the banks of that once magnificent stream—The Clarion.

The tramroad was four miles in length, built of cribbing and stringers, having wooden rails, which were bored and pinned to the stringers with wooden pins.

For a time I was given an assistant to run the train, but later was asked by my employer if I could not manage the work alone, my answer being that I could, and I cheerfully did so. The laborious work of loading the cars alone was not the only difficulty to contend with, added to that was the work of scrambling from the engine to the log cars, over the logs and to the brakes on coming to the various steep pitches, and then back to the engine again.

Picture all this and night overtaking one, having to make the fearful descents without lantern or light of any description; knowing every foot of road in the pitchy darkness from a knowledge which came as by intuition and worked in a manner like instinct.

Since then the world has changed, and when we compare the primitive methods thus described with the great operations where modern locomotives and cars are used in connection with the steam loader, one cannot help but admire the progress, although we may deeply deplore the ruin and destruction which these more scientific methods have made on the forests of the country.

WHO'S WHO IN THE SAW WORLD



WILLIAM LINDSEY

William Lindsey, Manager of the Vancouver branch of HENRY DISSTON & SONS, entered the company's employ in 1898 as a stenographer. His rise during the seventeen years of his service has been the result of a combination of an acquisitive mind, fearlessness of hard work and an engaging personality. He made for himself his first opportunity to take up the selling end of his business. During the first years of his service, while still a stenographer, he became interested in processes connected with the manufacture of files. Whenever he had a little spare time he would quietly and unobtrusively slip over to the file shop and ask the whys and wherefores. Eventually a vacancy occurred in the sales-force and Billy's bid for a chance was met with "What do you know about files?" "Ask me something about them you think I can't answer," was the retort. It developed that Lindsey knew as much about files as anybody in the plant. This little incident is typical of his method of getting results. His work has been connected with the selling department until about two years ago, when he was placed in charge of the Vancouver Branch. Lindsey is a

young man with his prime several years ahead of him. That the future has much in store for him is a foregone conclusion.

"ABC" OF INSERTED TOOTH SAWS

(Continued from page 74)

One of the first items which had our attention for improvement was the position of the bit in relation to the cutting. In other words, it was found, that as this style of tooth was given more or less "hook" it consumed more or less power. After much costly experimentation in this direction, the design of our tooth was changed to provide the maximum amount of "hook" without knuckling, or rubbing on the back of the tooth under a heavy feed. This not only involved the position of the tooth in the blade, but an actual change in the shape of the tooth or bit itself.

Our No. 33 and No. 44 Chisel Tooth saws have the cutting angles of the teeth as near the periphery line as it is possible to operate, and this provides a saw which will run with the smallest expenditure of power, and which will cut the maximum amount of feed.

The next important item having our attention was throat room, because, after making a tooth which would carry the heaviest feed, it was necessary to provide a large open throat to take care of the saw dust, and these new designs have the greatest amount of throat room possible:—at least 25 per cent. more than any other Inserted Tooth now on the market.

Thus constructed, these blades will not choke down, for when a sawyer opens up his feed lever he can carry it thru to the end of the cut without having to coax the saw along in order to permit it to clear itself from dust.

We invite careful inspection of the scientific lines of our No. 33 and No. 44 Chisel Tooth saws as shown in the illustrations, to substantiate the statements made in the foregoing, and these points alone without any of the other advantages which we shall call your attention to in a subsequent paper, are sufficient to enable the prospective buyer to decide that we can and are making "Saws of Quality."

IT CAN'T BE DONE

(With apologies to Grantland Rice)

It's a cinch when a man has perfected his art
 For another to follow his lead.
He doesn't have to commence at the start
 In order that *he* may succeed.
 All he needs to do is to follow the game
 Of the fellow who's wearing the laurels of fame.
 If he does, why, *his* product will be just the same.
But the hell of it is he can't do it!

There isn't a reason for one man to think
 That a lifetime of specialization
 Has given him anything over the gink
 Whose progress is by imitation.
 If this fellow copies the other man's ways
 And duplicates all that the other essays,
 He'll dodge all the work and get just as much praise
But the hell of it is he can't do it!

Why should one firm get a name for its wares,
 When others along the same line
 Can reproduce all the best features in *theirs*,
 Material, work and design?
 If they make the same goods and in the same way
 And follow developments day by day.
 Their goods are as good as the best,
 But say!
The hell of it is they can't do it!



NOT NOTICEABLE

A rather tall, thin man addicted to physical culture, perhaps more theoretically than practically was telling his Sunday School class that to care for the body was to nourish the soul. He was getting enthusiastic when he exclaimed:

"Ten years ago I was a gaunt shadow of a man. I saw that unless I did something for my health I could not live very long. So I took to exercise. And what do you suppose has wrought this great change in me, children?"

Just then the most impish member of the class leaned forward and inquired, "W'at change?"—*M. J. P. in Ass. Sun. Mag.*

THE MINISTER AND FREDDIE

"You must have been naughty, my little friend. As I came in I heard your mother say not to let her hear another word out of you."

Freddie—"It was dad she said that to, sir."

NO DUPLICATES

Customer—"Waiter, this is the first tender steak I've ever had in your shop."

Waiter—"My goodness! You must have got the gov'nor's."

THEY HAD TO BE

Maud—"Don't you think there are just as good fish in the sea as ever were caught?"

Marie—"I don't know. But they are smarter, anyway."

RECIPROCITY

Owens—"My landlord has ordered me out because I can't pay my rent."

Bowens—"Glad I met you. So has mine. Let's change quarters."—*Boston Transcript.*

COMPARATIVE SPEEDS

The peevish one at the corner table summoned his waiter and to him addressed this novel inquiry:

"Waiter, have you ever been to the Zoo?"

"Why, sir, do you ask?" returned the astonished servitor.

"I repeat," demanded the peevish one. "Have you ever visited the Zoo?"

"Well, no, sir."

"You ought to go," growled the peevish one. "You'd enjoy seeing the tortoises wizz past!"

The owner of one of those small "rattling" automobiles went into a store one day, leaving the car standing at the curb. When he came out, two men were perched on the seat, reading newspapers.

"Do you gentlemen mind telling me what you are doing up there?" he asked.

One of them looked over the top of his paper. "Waiting for a shine," he said.

TOO SLOW

Cook—"The cheese has run out, mum."

Mistress—"Why didn't you chase it?"—*Boston Transcript.*

TESTING THE SAW

Mr. A—, who was planning to build an outdoor sleeping porch at the back of his house, had an expensive new saw sent home from a hardware store. He left his office early the next afternoon with the intention of doing the work himself; he donned a pair of overalls and went at it in good spirits. An hour or so later he came tramping angrily into the house, his face dark with exasperation, and flung himself down in disgust.

"That new saw I bought isn't worth five cents," he stormed. "Why, the thing wouldn't cut butter!"

His small son Tommy looked up in wide-eyed surprise.

"Oh, yes, it would, daddy," he said, earnestly; "why, Ted and I sawed a whole brick in two with it just this morning!"—*Harper's Magazine.*

THE DISSTON CRUCIBLE

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TABLE OF CONTENTS

	PAGE		PAGE
POLISHING STONES USED BY ANCIENT PUEBLO INDIANS <i>(Frontispiece)</i>		FROM THE ANTIPODES . . .	91
EDITORIAL CHAT	83	MR. CARROLL IS SATISFIED . . .	92
THE HISTORY OF THE FILE	84	CAST-STEEL DOG CUT BY A "DISSTON"	93
THE MAKING OF DISSTON SAWS	88	HALL OF FAME	94
A LOOSE LOG DID THIS	90	SAW DUST	96



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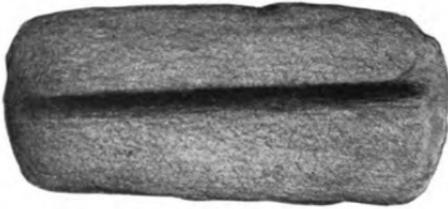
HENRY DISSTON & SONS
INCORPORATED

Keystone Saw, Tool, Steel, and File Works

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STONES USED BY ANCIENT PUEBLO INDIANS FOR
POLISHING AND STRAIGHTENING ARROW SHAFTS

THE DISSTON CRUCIBLE

A MAGAZINE FOR THE MILLMAN

VOL. IV.

JULY 15, 1915

NO. 6

EDITORIAL CHAT

A MODERN APPLICATION OF AN ANCIENT THOUGHT

IF you want a job done right, do it yourself"—old, but still to the point. The chances are the adage originated with some disgruntled individual who had tried vainly to get something done by someone who either could not grasp his idea or hadn't the skill to execute it. But the development of manufacturing efficiency has made stringent demands on equipment.

Probably there is a little exaggeration in the rumor that a certain prolific automobile plant was thrown 200 cars behind schedule before an employe could pick up a wrench he had dropped. Nevertheless, modern manufacturing methods demand that every factor entering the production of goods be *right*. And only the manufacturer himself knows exactly the requirements in equipment essential to meet operating conditions.

In the production of saws in the DISSTON Plant thousands of dozens of files are used annually. On such a scale of consumption, only the highest standard of excellence will suffice. Beside long, economical service, the files must, in use, give maximum results with minimum effort.

After repeated, unsuccessful attempts to secure a quality of file to meet the rigid requirements of his business, HENRY DISSTON, in 1866, started manufacturing his own files. With every facility for controlling to a nicety the character of the steel entering their manufacture, and with a continuous test, in actual service, of the quality, DISSTON FILES were brought to the highest degree of perfection.

This determination of HENRY DISSTON to "do it himself" and have it done "right" was the foundation of one of the world's largest file works—producing a greater variety of files than any other plant. And with unsurpassed facilities for production and test, DISSTON FILES will attain to the universal pre-eminence that DISSTON SAWS already enjoy.

*Quality
Sells*

THE HISTORY OF THE FILE

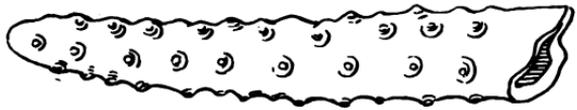
ALTHOUGH of more recent origin than the saw, the history of the file has been traced back to remote antiquity. The original abrasive materials were natural substances such as stone, sand, grit, coral, bone, fish-skin, gritty wood, etc. The process was grinding rather than cutting as with the files and rasps of today. A direct modern application is found in sandpaper and emery-cloth.

The principal use by primitive man was in smoothing weapon handles after they had been rough-shaped as well as his limited facilities permitted.

While rasping tools are second only to cutting tools in the classification of prehistoric implements, both history and relics of files are comparatively meagre. Strangely enough North America has yielded the majority of

Eskimos use stones to sharpen spear-heads and the South Sea Islanders use coral for rasping.

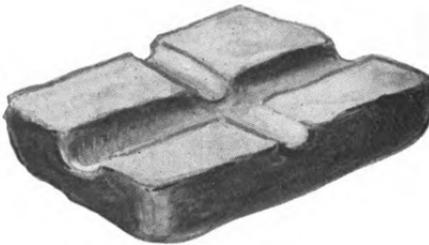
Throughout the Stone Age up to the close of the Bronze Age, natural abrasives were the only ones available. Of the latter period, numerous specimens



Copper Rasp Found in the Rammesseum, Egypt.

of bronze files have been recovered; principally from the "hoards" of that period. These "hoards," consisting of deposits or collections of bronze objects, supposedly the property of bronze founders, have been found in numerous places throughout Europe. Several bronze files and one of iron have been found in a prehistoric cemetery at Hallstadt, Austria. They range from five to ten inches, flat for most of the length but drawn down into a round taper for about two inches at the end. Half round and circular files have also been found. The early forms of files were broad with coarse teeth running at right angles to the length.

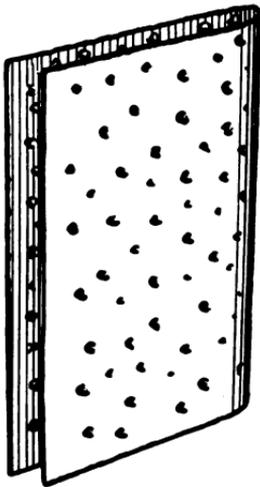
From Crete, where metal-working was an art before metal was known in North America, comes the earliest file to which a date may be fixed. It was made around 1500 B.C. and resembles the modern half-round file. Egyptians of the Lisht Dynasty, 1200 to 1000 B.C., made small rasps of bronze by punching holes in a sheet and coiling it into a cone with the rough edges of the holes out. However, as the Bronze Age is supposed to have passed its zenith



Filing Stone from the Mound Builders' Ruins in Tennessee.

specimens. The Mound Builders and Cliff Dwellers, both familiar with metals, appear not to have been acquainted with artificial files. Fig. 1 shows a Mound Builder's filing stone used apparently for smoothing arrow shafts. The Pueblo Indians left similar relics (see frontispiece). Today the

THE DISSTON CRUCIBLE



Indian Rasp for Smoothing Arrow Shafts.

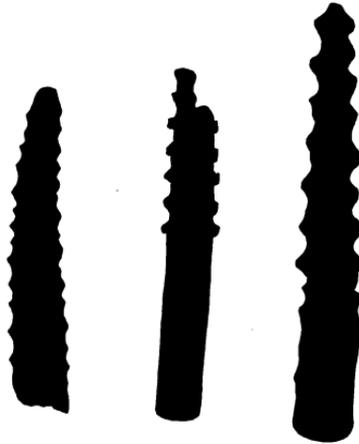
around 4000 B.C., bronze files doubtless were known long before those mentioned.

Of iron files Solomon says "Iron sharpeneth iron; so a man sharpeneth the countenance of his friend." In I Samuel XIII: 21 (about 1093 B.C.) we read "They had a file for the mattocks, and for the colters, and for the forks, and for the axes, and to sharpen the goads." Files are also mentioned in the Odyssey.

The date of the discovery of iron is problematical. Fuh-he, a Chinese, records in his extraordinarily ancient "Book of Historical Documents" having accidentally smelted iron in 3200 B.C. Egyptians are believed to

have known of it as early as 1565 B.C. and the Greeks before the founding of Troy in 1537 B.C. Homer mentions iron weapons in his account of the siege of that city. India worked iron skillfully long before the Christian Era.

The crucible method of melting steel, considered today to be the best, is very ancient, being mentioned in all early writings. The Assyrians, who were about the first to profit by the discovery

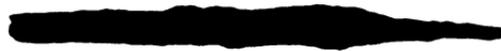


Bronze Rasps Used by the Egyptians
1200-1000 B. C.

of iron, made a straight rasp identical in form with the present day rasp. This tool dates definitely back to the seventh Century B.C.

While slight mention of files is made in medieval times, much of the steel-work of this period could not have been produced without their aid.

Not until the building of the Notre Dame Cathedral in the Thirteenth century do we pick up the thread of history which carries us to the present time. In the Fourteenth century "file and saw, vice and drill were called to his (the smith's) aid." The



Roman Knife Files Found at Tilchester Roman Site
A. D. 43 to 300.

THE DISSTON CRUCIBLE

hammer had previously comprised his regular tool equipment.

Sheffield, England, became the file manufacturing center when the Thirty Years War paralyzed the industry in Nuremberg, the previous center. The Swiss made files at an early, but undetermined date. The American Colonists imported most of the files required, but a few artisans probably made a small number for local use. Philadelphia had in 1698 "Artificers of many kinds, among them cutters, gunsmiths, locksmiths, nailers and *file cutters*." Broadmeadow and Company were making files in Pittsburgh in 1829. With these exceptions file manufacturing was practically unknown in the United States. During the succeeding twenty years the industry secured quite a foothold in this country but until 1864 Europe continued to supply most of our files.

NOTE—The cover design, from our exhibit at San Francisco, shows the wide variety of files manufactured today.

DISSTON SAWS IN THE BARREL FACTORY

After twenty-five years of practical experience, a man ought to know pretty well what he is talking about. Mr. Keorkle sums up the result of his quarter of a century's barrel making experience convincingly in the following letter:

HENRY DISSTON & SONS,
PHILADELPHIA, PA.

Gentlemen:

I want to congratulate you on the grade and variety of heading saws that your company is turning out at this time. In my twenty-five years of experience around barrel factories, I have probably used every make of saw on the market and have not found any that will compare with the

The early stages of preparation of file blanks have not varied greatly since olden times—forging to shape out of previously rolled bars, annealing, cleaning, leveling. The blank was then oiled, and cut with a chisel and hammer, hardened and tempered.

The introduction of file cutting machinery (about 1860) was hastened by the repeated strikes of the file-cutters, themselves, for higher wages.

As we have mentioned, many forms of the modern file were substantially originated in the earliest part of its history. Of the file manufacturer of today, the plant of HENRY DISSTON & SONS is unsurpassed in machinery and equipment, and produces a greater variety of files than any other plant in the world. Their facilities for steel making, forging and annealing, cutting, hardening and inspection—the prime essentials of high grade files—can not be excelled.

variety that you are turning out up to the present day.

I am firmly convinced, not by any theory but by practical experience, that if more concerns would give their engineers an opportunity to once use your saws, it would be a lead toward the right side of success. A week will show less resistance on the motors. results more accurate and production greater.

Trusting that you keep up the quality of your saws, I beg to remain,

Very truly yours,

(Signed) FRED KEORKLE,
29 West 35th St.,
Bayonne, N. J.

THE DISSTON CRUCIBLE

160,000 LATH WITHOUT CHANGING SAWS

HENRY DISSTON SAW WORKS,
PHILADELPHIA, PA.

GENTLEMEN:—

We have been using your saws in our lath-mill since 1900 and have found them highly satisfactory. Some time ago John C. Kolb who runs our lath-mill on contract cut 160,000 lath in 22 hours without changing saws.

Very truly yours,

PENNSYLVANIA WOOD CO.

P. S.—This cut was made with three span saws and one twenty-six inch bolter saw.

[EDITOR'S NOTE—In order that no question might arise regarding the accuracy of these figures, Mr. Kolb has taken the precaution to furnish us with an affidavit covering the facts as stated.]

A REMARKABLE PERFORMANCE

In some recent experiments in fine sawing made in the shops of W. B. Mershon & Co., a 24-gauge by 3-inch wide DISSTON Band Re-Saw was used in re-sawing 5¼-inch red cedar into cigar box stock, making a 5¼-inch by 5¼-inch piece of stock yield twenty-one pieces, each measuring 5-32-inch in thickness after being dressed on two sides.

This work was beautifully done, and when the extreme thinness of the saws is taken into consideration and the fact that the kerf was only 1-32-inch, it is truly a remarkable performance, but only goes to show what can be accomplished with the proper tools and mechanical skill in their operation.

There were used last year in New York State alone over 800,000 board feet of wood for dowels. Over 962,000 board feet of hardwoods were used for shuttles, spools and bobbins. Brushes and brooms consumed over 1,500,000 board feet, while toys used nearly

3,000,000 board feet of wood. These can be made from mill waste, short lengths, defective butts and tops formerly considered of no value and left in woods.—*Woodcraft.*

The Douglas fir of the Rocky Mountains and that of the Pacific Coast are the same species but have different characteristics, and, if planted together, during earlier part of its life at least, the Pacific Coast form will usually make a large and stronger growth than the Rocky Mountain tree.—*Woodcraft.*

Some idea of the value of mahogany may be gathered from the statement that a New York firm is said to have recently paid \$8,000 for a mahogany log 4 ft. square and 24 ft. long.—*Building Age.*

POSITION WANTED

First-class, experienced band saw filer desires connection in this capacity. M. K. Brown, Combs, Tennessee.

The Making of DISSTON



POURING STEEL



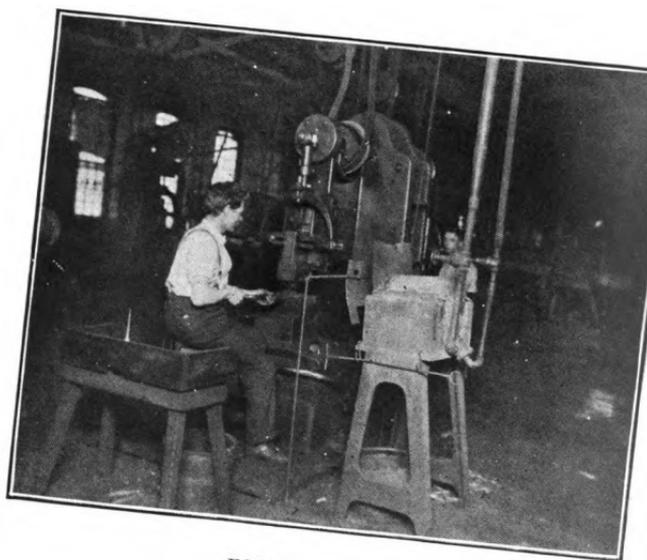
CUTTING

Showing a few of

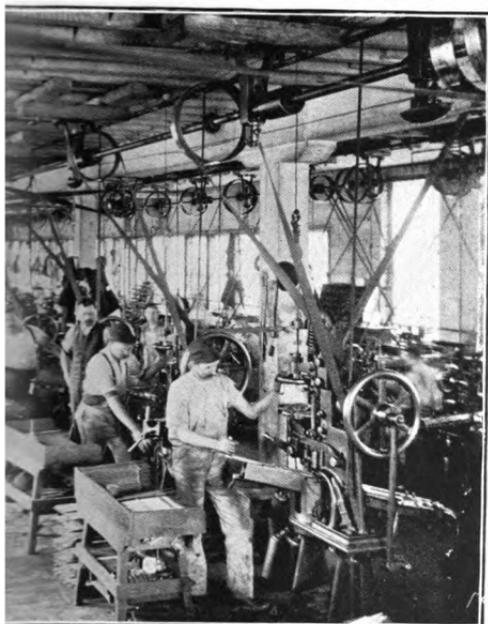


CUTTING IN MULTIPLES

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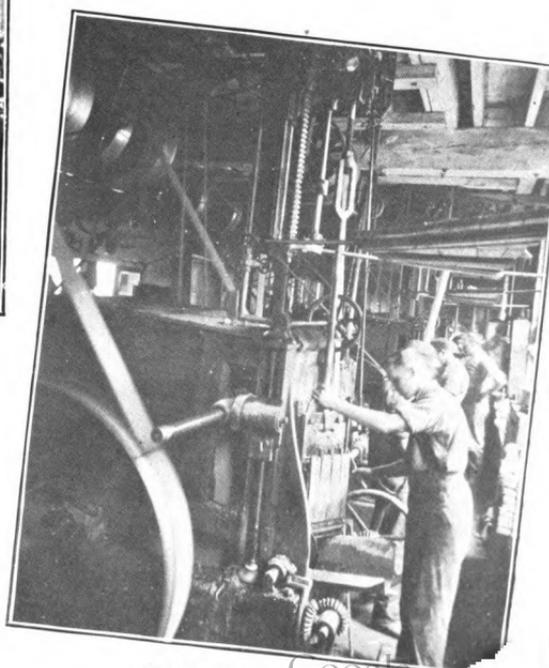


FORGING BLANKS



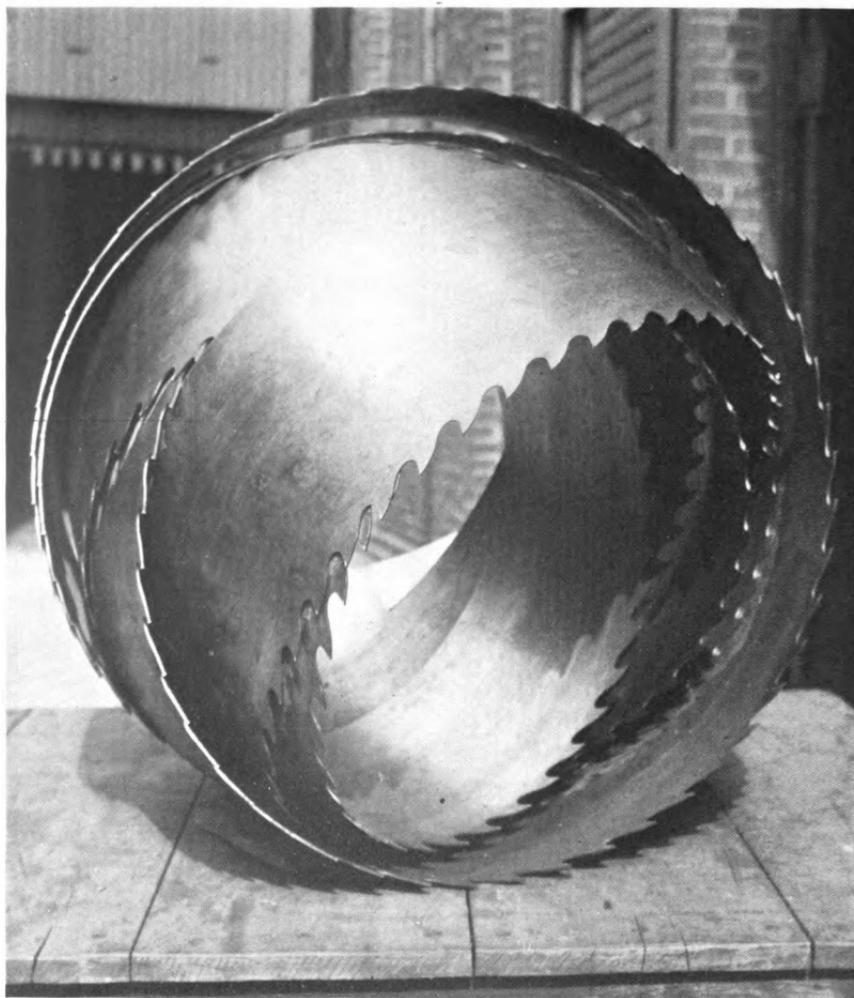
LARGE FILES

e many operations



GRINDING BLANKS

A LOOSE LOG ON THE CARRIAGE DID THIS



WHEN a band saw jumps the wheels and is distorted into a hopelessly tangled mass, the shocks and strains are, of course, many times greater than the saw undergoes under normal operating conditions. Hence accidents of this kind offer an excellent opportunity for studying the quality of steel in the saws.

One of the most badly twisted bands we have seen is here shown. This saw did not "jump" but curled as the result of a log rolling into it at the mill of L. Jenson Co. Inc., Ewen, Michigan.

Mr. C. C. Westcott, Treasurer and General Manager of the company says: "This saw was purchased in the fall

(Continued on page 92)

FROM THE ANTIPODES

Copy of Letter received from Pidcock Bros., May 6th, 1915.

Railway Sawmills,
Casino, N. S. W.
May 4th, 1915.

MESSRS. HENRY DISSTON & SONS, LTD.,

Dear Sirs:

We received yours, stating you have forwarded us 300 Saw Bits from stock for which we thank you. We were not in a particular hurry for these bits but thought you may have to indent same which would take some time. However, we were pleased to know that you keep these points in Sydney.

We had not an opportunity to test the Inserted Tooth Saw we purchased from you some time ago until just lately. About the time the saw arrived our engine smashed up and it was some time before we could get going again. We must tell you that we have tested the saw in all kinds of hard and soft woods and the result is that the saw has given every satisfaction, never makes a faulty cut and takes far less power to drive than any other saw we ever used. We are about to erect another large sawmill on the North Coast and will require two or three more of these saws and I don't think we will have any else than the "DISSTON."

We cannot purchase the proper files to sharpen the Inserted Tooth Saw up here, kindly post us one dozen at your very earliest convenience.

Yours faithfully,

PIDCOCK BROTHERS, Ltd.,

Per (Signed) T. G. Pidcock.

THE DISSTON CRUCIBLE

MR. CARROLL IS PRETTY WELL
SATISFIED. TOO



Mr. C. E. Carroll, filer for the Shreve Chair Co., Union City, Pa., writes the following unqualified endorsement of the quality of DISSTON SAWS:

HENRY DISSTON & SONS, INC.,
PHILADELPHIA, PA.

GENTLEMEN:

I am enclosing a camera picture which I took of an iron wedge which had been cut to the depth of nearly an inch by a DISSTON SAW. The wedge is about one by one and a quarter by six inches, and was embedded in a log. After cutting this wedge, the saw was taken from the wheel, and I ground the teeth off perhaps about three-eighths of an inch and as the saw was needed it was again placed on the wheel and made a two hours' run without being strained. This is surely a

proof of the strength and durability of the DISSTON SAWS.

In the picture the wedge is in the hand of J. E. Reed, the sawyer, and the light streak at upper end of wedge shows where the incision was made. Your Mr. Cooper saw this wedge when he was here a short time ago.

Very truly yours,
(Signed) C. E. Carroll,
Filer, Shreve Chair Co.,
Union City, Pa.

A LOOSE LOG ON THE CARRIAGE DID THIS

(Continued from page 90)

of 1912 as a 12-inch band saw, has been used continuously in our mill, and about two months ago a log got loose from the carriage and rolled into the saw. On removing saw from wheels and taking it up into the filing room it began to curl up and took the position in which you find it in the crate. Do not believe if you manage to unravel it that you will find a single crack in the entire saw, due to your having manufactured a good saw, and our filer having given it proper care."

The quality that doesn't fail under the stress of accident is the quality for long, efficient service under normal operating conditions.

AS WE THOUGHT

Two students walking together on the campus.

First spoke to a co-ed.

Second—Who was that?

First—Ida.

Second—Ida who?

First—Ida know.—*San Francisco Examiner.*

CAST-STEEL DOG CUT BY A "DISSTON" AT THE BABCOCK LUMBER AND BOOM CO.'S MILL



A CHANGE of diet is sometimes a wonderful thing—but not for saws.

If you've been feeding a saw wood and switch at full speed to metal—cast steel for instance, as in the case we have in mind—things are likely to happen.

When the 8-inch 17-gauge saw on the Babcock Lumber and Boom Co.'s pony mill at Davis, W. Va., hit the cast-steel dog shown above, the principal thing that happened was that the dog was cut in two. Disston toughness and temper were in that saw and Disston Quality took it through an ordeal it was never meant to undergo. Now, we make metal-cutting saws, lots of them, as well as saws for cutting wood, but we don't try to combine the two. The requirements are too radically distinct. That's why the Bab-

cock people figured there must be *some* quality behind a saw that would do both.

What happened to the saw? Oh, Mr. Ted Simmons, one of the filers, says he just re-swaged and ground it and put it back on the wheels the next run.

The mill at Davis is a triple mill having one double-cut band on which they use 14-inch saws, one single-cut 12-inch band and the six foot pony mill mentioned previously.

Fred Harrington is filer for the double-cut mill, C. V. Blackhart for the single-cut and Ted Simmons looks after the 8-inch 17-gauge saws and the round saws. DISSTON SAWS are used throughout with perfect satisfaction. They're almost as proud of Disston Quality as we are.

A SENSE OF HUMOR

"Now, Silas," said the speaker, "I want you to be present when I deliver this speech."

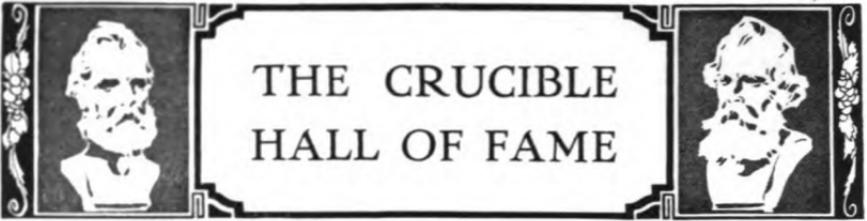
"Yassuh."

"I want you to start the laughter and applause. Every time I take a

drink of water, you applaud; and every time I wipe my forehead with my handkerchief, you laugh."

"You better switch dem signals, boss. It's a heap mo' liable to make me laugh to see you standin' up dar deliberately takin' a drink o' water."

—*St. Louis Lumberman.*



THE CRUCIBLE
HALL OF FAME



SPEAK to George L. Rogers about FILES and you have him interested at once, but just mention "men and organization," and you have him boiling over with enthusiasm. "Why," said he, "right here in the Dissron File Works we have the finest set of file-makers in the world. Machines are alright in their places, but give me intelligent men of the right spirit and mood, such as we have here, and I'll give you the highest possible product in the file line day in and day out. My men," and he said this with pride, "have the ability, know their business and work together. That's real organization and the reason why we can and do make the best and greatest variety of files. All we want to know from the customer is the intended

use of the file and we will make one that will do the work and earn repeat orders. Not only are the men here able file-makers, but to show they are broadminded and of the right spirit, they effected an organization among themselves through which a fund is created for the purpose of affording relief to anyone who should be so unfortunate through illness or other unavoidable circumstance as to require aid, and you would be surprised to know how helpful the association has been. Assistance is rendered quietly and unostentatiously, without application being made by those in need, so close is their affiliation and knowledge of each other.

"Sentiment in business? Yes, there's sentiment here and any estab-

THE DISSTON CRUCIBLE

ishment without it surely must be dead or going backward."

When asked the reason for his success in the file business, he replied: "You mean our success, for it is chiefly due to the organization and the spirit of the men, whom I treat as men; they are the real factors. When I hire a man I teach him to do the work my way and then I know how it will come out. He learns our standard, it is high, and every man works up to it. We make a close study of our work—the shape of the file required, the pitch and proper cut of the teeth and all other essentials and thereby achieve the highest results."

For forty-three years George Rogers has been making files and rasps and his experience is such that he can successfully operate every type of file-cutting machine as well as perform each operation in file-making. All of this time was not spent here, for only in 1895—just twenty years ago—was he selected to superintend the Disston File Works, which position he has held ever since. In this time the output of Disston Files has been increased almost four-fold. "And best of all," remarked Mr. Rogers, "we still have all our old customers and have acquired many new ones. Can you beat that for a supreme test of quality?"

Many improvements in file and rasp cutting and other machines were inaugurated by G. R. as he is called, whose zeal is untiring. Strong and vigorous in speech and action, yet withal human, his individuality pervades and quickens the entire File Shop. Of the hundreds of elaborate displays of Disston Files and Rasps which he designed and made up, the most notable and complete, comprising almost every conceivable style, is the one now at the Panama-Pacific International Exposition, which

won for Disston Files and Rasps the highest award.

"Was I pleased with the Award?" he repeated, when asked the question. "I certainly was, but a much greater source of satisfaction is the fact that 'my men' are just as proud of it as I am."

That "absence makes the heart grow fonder" is a true saying is amply borne out by the high compliment paid Mr. Rogers upon his return from a two months tour of the States, including a visit to the Exposition at San Francisco, when his foremen presented him with a beautiful solid silver Loving Cup in token of their regard and esteem. Deeply appreciating the feeling thus expressed, he later assembled them all at a banquet. After doing justice to a bounteous feast, the evening was greatly enlivened by the recital of numerous personal experiences and anecdotes of "times past" in the File Shop, where the majority of those present had spent many years.

The following glowing tribute to the men, quoted from the souvenir menu, is characteristic and fully describes the atmosphere pervading the Disston File Works.

"Success to all, in any field of endeavor, ever follows where loyalty, harmony and good-fellowship prevail. The full measure of this spirit existing so long in the Disston File Works reflects high credit not only upon you, your methods and your work, but upon the firm itself which you represent.

"Fully appreciating this, I want to say to you that it is to me personally a source of satisfaction and pride."

Thus is briefly sketched the personality of George L. Rogers and the close relationship with his men, from which it will easily be seen that there is no cause for wonderment in the excellence of the goods they make.



A youthful physician had been summoned as a witness in a case which depended on technical evidence. and opposing counsel in cross-examination asked several sarcastic questions about the knowledge and skill of so young a doctor.

"Are you," he asked, "entirely familiar with the symptoms of concussion of the brain?"

"Yes."

"Then I should like to ask your opinion of a hypothetical case. Were my learned friend, Mr. Banks, and myself to bang our heads together, should we get concussion of the brain?"

"Mr. Banks might."—*Pittsburgh Chronicle Telegraph*.

GETTING A RAISE

A year ago a manufacturer hired a boy. For months there was nothing noticeable about the boy except that he never took his eyes off the machine he was running. A few weeks ago the manufacturer looked up from his work to see the boy standing beside his desk.

"What do you want?" he asked.

"Want me pay raised."

"What are you getting?"

"T'ree dollars a week."

"Well, how much do you think you are worth?"

"Four dollars."

"You think so, do you?"

"Yes, sir, an' I've been t'inkin' so for t'ree weeks, but I've been so blamed busy I ain't had time to speak to you about it."

The boy got the raise.

Charles Ogle was leaving the Imp studio the other day when a pretty young girl approached him.

"I beg pardon," she said, timid like, "but would you care to help the News-boys' home!"

Charley looked at her kindly. "Sure," he answered, "where are they?"—*Woodworker's Record*.

LIMITED DISSIPATION

A small, hen-pecked, worried-looking man was about to take an examination for life insurance.

"You don't dissipate, do you?" asked the physician, as he made ready for tests. "Not a fast liver, or anything of that sort?"

The little man hesitated a moment, looked a bit frightened, then replied, in a small, piping voice: "I sometimes chew a little gum."—*Collier's Weekly*.

LONG AND SHORT OF IT

Gazing at a group of nine children an old lady called one of the little girls. "Are all of these children your sisters and brothers?" she asked.

"Yes, mum," replied the youngster.

"What is the largest one named?"

"Maxi, mum."

"And what do you call the smallest one?"

"Minnie, mum."

AN ACCOMPLISHED WOMAN

MISTRESS—"Look here, Susan, I can write my name in the dust upon this table."

SUSAN—"Ah, mum, there's nothing like eddication, is there, mum?"—*Exchange*.

MYSTERY

"What did Rastus git married for?"

"Lawd only knows, chile. He keeps right on workin'."—*Boston Transcript*.

CANDOR

FOR SALE—Cheap, on account of discontinuing the fresh-meat business two nice horses.—*Elgin (Ill.) News*.

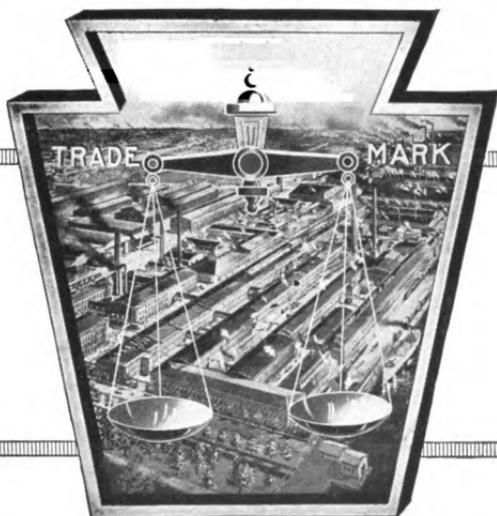
THE DISSTON CRUCIBLE

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TABLE OF CONTENTS

	PAGE		PAGE
ENGINE WRECK (<i>Frontispiece</i>)		MODESTY SHOULD HAVE KEPT THESE OUT	107
EDITORIAL CHAT	99	CHARLES T. PATTERSON	108
"DISSTON—THAT'S ALL"	100	OAK, TEAK AND SUBSTITUTES	109
TO PREVENT SET-SCREWS CLOGGING	101	HALL OF FAME	110
THIS TIME IT'S A STEEL ARM	102	WHO'S WHO IN THE SAW WORLD	111
UNIQUE BUILDING STONES	106	SAW DUST	112



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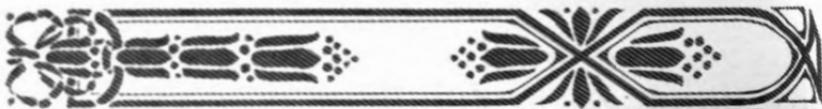
HENRY DISSTON & SONS
INCORPORATED

Keystone Saw, Tool, Steel, and File Works

PHILADELPHIA

BRANCH HOUSES :

Chicago, Ills. Boston, Mass. Cincinnati, Ohio. Seattle, Wash. Portland, Oregon.
New Orleans, La. Memphis, Tenn. San Francisco, Cal. Sydney, Aus. Vancouver, B. C.
Canadian Works, Toronto, Canada.



WRECK ON STEARN'S SALT AND LUMBER CO.'S LOGGING ROAD.



THE DISSTON CRUCIBLE

A MAGAZINE FOR THE MILLMAN

VOL. IV.

AUGUST 15, 1915

NO. 7

EDITORIAL CHAT

OPPORTUNITY

OPPORTUNITY really is a combination of circumstances favorable to an advantageous demonstration of merit. Over the circumstances we have no control (even the Greeks depicted "Fortune" as a blind goddess)—but the merit end of it is largely up to us. It is truly deplorable that much worthy ability remains unrecognized for lack of opportunity. But a great deal oftener (and even more deplorable, because avoidable) opportunity is unrecognized for lack of ability to grasp it.

Whether in man or machine, qualifications to meet given requirements are developed mainly through experience or past performance. The broader the experience the better the equipment and the larger the number of conditions it covers. In other words opportunities are proportionate to preparedness to meet them.

Each step in the growth of the DISSTON business to its present great proportions has been an illustration of this preparedness to meet opportunities when they arose—to create opportunities where none could exist for those less fully equipped by experience to discern the requirements of altered conditions. Well might the phrase have been:

"Eternal vigilance is the price of opportunity."

*Quality
Sells*

"DISSTON—THAT'S ALL"

CAMBRIDGE, MAINE.

Ever since the DISSTON CRUCIBLE has been coming to me, I have thought I would try and write some of my experience with different makes of saws. I commenced filing in a lumber mill forty-three years ago, in the old Basin Mill at Orono, Maine, for James Walker & Co. The mill at that time was the longest lumber mill (under one roof) in the world. I think it was 564 feet long. It contained four gangs, five single saws, and a circular saw, besides two shingle machines, clapboard machine and six lath machines. In those days in this state, lumber mills ran as long as daylight lasted.

At that time there were in use different makes of saws. We did not swage the teeth the same as we do now but used the spring set. When a circular saw needed more tension it was sent to the shop, but at the present time the hammering is done in the mill. I commenced carrying full swage about thirty years ago. Commenced hammering about twenty-three years since. After I commenced using full swage it did not take me long to decide who made the best saws. When we have a DISSTON SAW, with an experienced man at the lever and plenty of power, we are not afraid of the sawyer saying that the saw won't stand up. One sawyer told me after I had fixed a saw for him that he could saw railroad iron with that saw, a DISSTON.

Within the last ten years there has been a great change in putting saws in order. In this spruce country we hammer circular saws what we call wide open. We put so much tension into a 54-inch saw that it will not stand straight. It will take ten or fifteen pounds to pull it through. In doing this we use a tension gauge. When in motion, up to speed there is not a waver, and with a steam feed machine and a good man at the lever, it is amusing to see outsiders come into the mill and watch the machine, and nudge each other. At one mill where I worked filing, the owner came to me and said he was going to order some new saws. "What kind shall I buy?" said he. I replied, "DISSTON every time." After we had been using them about two weeks, a filer from another mill came into the filing room where I was swaging a saw and watched me a while, then he said, "Odlin, if I could hammer such corners onto my saw teeth I would not ask for a swaging machine." The reply I made was, "Tell your folks to get DISSTON SAWS and you can put just as good corners onto them as I can." In all the years I have been filing DISSTON SAWS I have never seen a poor saw. I generally take the rounding side of a DISSTON upset and go round the saw giving every tooth one or two quite good blows with my hammer, then I take the six square draw bar and finish; but of late years I have used a swaging machine—much less work. I gave up the saw and lumber mill two years ago and am now on my farm. Since good filers and good sawyers command such high wages many operators will hire the best filer they can hear of then put some man that has worked as a tailstock man rolling on at the lever, some one who is anxious to get a name. They smash up saws enough to hire a good sawyer besides keeping the filer guessing. They think they are saving money. My filing has been mostly on circular saws. Since the first year filing I have filed in a number of mills and generally they buy their saws of Abner Taylor of Bangor—one of the best men I ever became acquainted with. When he sends a saw to a mill where I am filing he knows the saw will stand up and do its business. When you want a circular saw—get one made by HENRY DISSTON & SONS—and don't be talked into taking something "just as good." I have filed in Michigan, New Hampshire and most all over the State of Maine—using all kinds and makes of saws. Sometimes a sawyer will say how do you like such and such saws—but with me it is DISSTON, "that's all."

Yours truly,

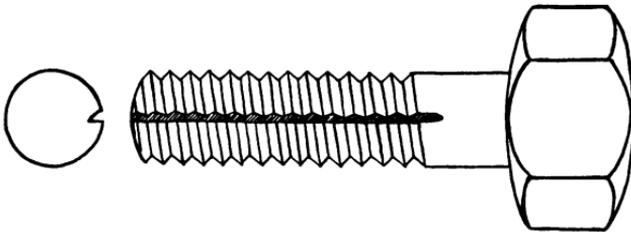
W. W. ODLIN.

TO PREVENT SET-SCREWS CLOGGING

Mr. Wm. L. Lloyd offers to other CRUCIBLE readers the following hint. He claims it has been entirely successful in preventing set-screws and bolts

treatment has saved the heads of many set-screws in making adjustments.

Why not send in *your* labor-savers? CRUCIBLE readers will appreciate it



from sticking on account of dust on the threads. Simply take a half round file and run a straight groove the length of the thread, as indicated in the sketch. Mr. Lloyd claims this

and an interchange of ideas will be profitable all around. Don't be fussy about the English—we'll sand down the rough spots, but jot down your stunts and send them to the CRUCIBLE Editor.

AN OLD SYCAMORE

MESSRS. HENRY DISSTON & SONS, INC.
Philadelphia, Pa.

GENTLEMEN:

In one of my letters from Florida, I promised at some future time to write you of a large tree that grew near my birth place on the "Banks of the Allan Water" in Scotland. And I now try to fulfill my promise. This tree which was known even before the year 1700 as the Big Tree of Kippenross was a Sycamore. It got its first hurt in 1827 when it was struck by lightning and had one of its branches broken off and the heart of the bole taken out. I remember my father having the bole cleaned out and built up in solid masonry using therein four tons of stone and two tons of lime in the operation. Cementing where the branches separate and putting in lead

gutters to carry off the water, Mr. Davey, the self named tree Doctor of Ohio, is but a kid in tree doctoring, as all this happened in 1842. The dimensions were engraved on a brass plate fastened to the tree that year as follows:

- Girth of smallest part of Trunk 19 ft., 6 in.
- Girth where branches separate 27 ft., 4 in.
- Girth close to the ground 42 ft., 7 in.
- Height 100 ft.
- Extreme width of branches 114 ft.
- Aged 440 years.

Kippenross 10th June, 1842

With best wishes for your continued prosperity, I remain,

Yours faithfully,

(Signed) W. M. SOMERVILLE.

THE DISSTON CRUCIBLE



THIS TIME IT'S A STEEL ARM

The variety of metal which gets in front of DISSTON SAWS seems unlimited but results appear to be uniformly disastrous to the intruding metal.

The Streever Lumber Co., of Ballston Spa, N. Y., write as follows of a steel arm of a saw mill carriage which one of their "DISSTONS" ran into.

HENRY DISSTON & SONS,
PHILADELPHIA, PA.

Gentlemen:

Am enclosing a little sketch showing measurement of a cross section of the steel arm to saw mill carriage. The arm dropped down and was completely sawed off with one of your inserted tooth saws about fifty inches in diameter without any injury to the saw beyond the bits, no throats being injured in any way. I thought that it might be of interest to you to know this, and if you care for the parts which were sawn in two we would express them to you.

Yours truly,

STREEVER LUMBER COMPANY.

THE DISSTON CRUCIBLE

MANGARAKAN,
COLLINGWOOD,
NELSON, NEW ZEALAND.

July 5, 1915.

HENRY DISSTON & SONS,

DEAR SIRs:

In April number of DISSTON CRUCIBLE, I notice that on request you will send a copy of your "Saw Appreciation." I would be obliged if you would kindly send one to me.

DISSTON CRUCIBLE comes to me regularly every month and I must say it is a very interesting magazine, especially to a mill man like myself and from it I glean a good lot of information.

Wishing the firm of "DISSTON" every success, I remain,

Yours faithfully,

H. S. PROUSE.

COMPARATIVE STRENGTH OF WOODS

AVERAGE STRESSES IN POUNDS PER SQUARE INCH ON WOODS
AND THEIR COMPARATIVE STRENGTH

Woods	Average Stress	Comparative Strength	Woods	Average Stress	Comparative Strength
Mahogany.....	7430	1.50	Birch.....	5800	1.17
Teak.....	7420	1.50	Beech.....	5470	1.10
Yellow deal.....	6960	1.4	Elm.....	5300	1.07
Ash.....	6330	1.28	American oak.....	5050	1.02
American whitewood.....	5880	1.18	Pitch pine.....	4960	1.00

The table shows the average stresses in pounds per square inch of the various woods under test and their comparative strength, the weakest wood being taken as unity.

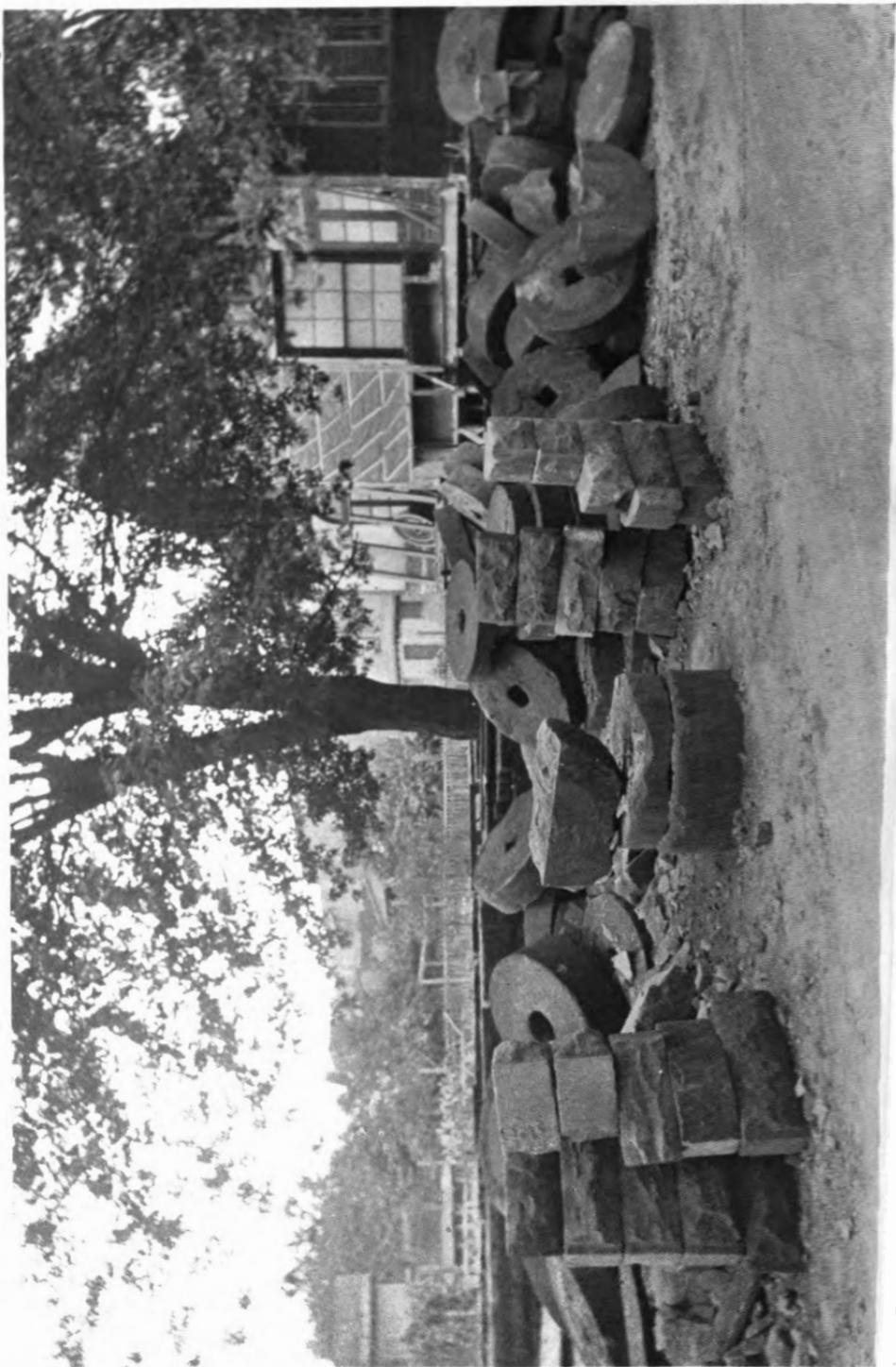
EBONY AND CERTAIN IMITATIONS

Ebony, probably the most costly of timbers, has been known for thousands of years. Supply in the main comes from Ceylon, Madagascar and West African districts, Wood is heavy, deep black, hard and solid with an eternally black color. It takes polish readily, and can be given the most beautiful finishes.

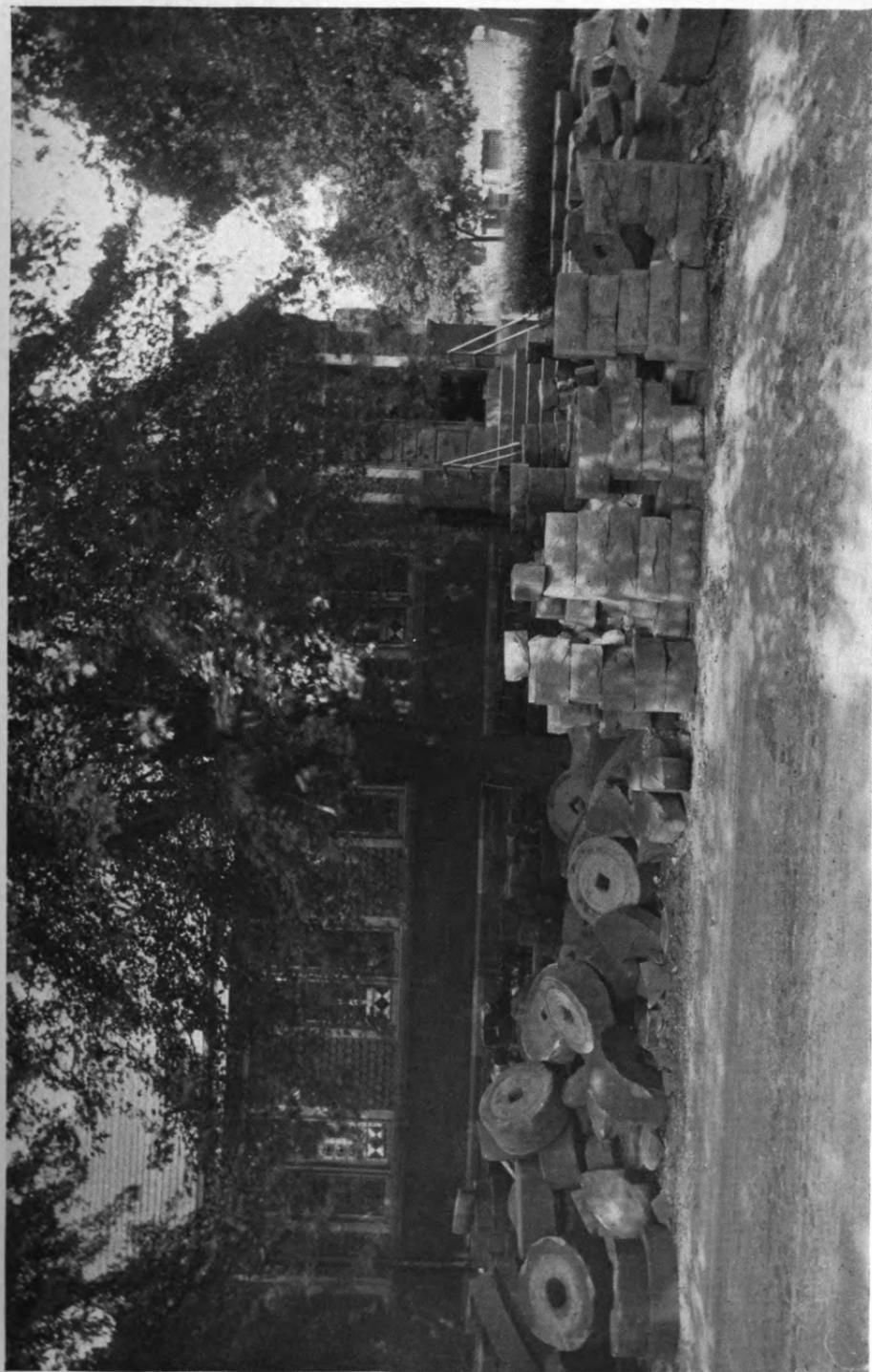
Ebony is imitated to a great extent by using the wood of fruit trees, especially of the pear-tree.

Lately Africa has furnished the Wat-wood, which seems to furnish a good ebony imitation.

An artificial ebony is also reported as made by taking a material of sawdust, water and blood, and compressing it under an enormous pressure.



AS BUILDING STONES FOR A CHURCH



UNIQUE BUILDING STONES

THE illustrations in the center spread of this issue show the start of the foundation for an addition to the Tacony Baptist Church, Tacony, Philadelphia.

The stones used in the construction are discarded grindstones from the DISSTON Plant. After the grindstones have outlived their usefulness for grinding saws on account of the small diameter to which they are worn, they still have possibilities. The stones are broken and dressed, making excellent building blocks. In both photographs are seen the stones unbroken as they leave the DISSTON Plant, and dressed as they will be used in the building.

The foundation, as may be seen, has just been started. We will show the finished structure in a later issue.

YOU NEVER CAN TELL

Wealth doesn't seem to have much weight in boyhood's scale of things.

For instance take the case of Johnnie Strong and Rufus Bings.

Now Rufus was the scion of extremely wealthy stock,

While Johnnie's father seemed to be eternally in hock.

But boys are boys and just so long as they are having fun,

They pick the playmates whom they like, without regard for Dun

Or Bradstreet either. Consequently Rufe and Johnnie's joys

Were shared like those of any other healthy pair of boys.

But Rufus went to college while young Johnnie went to work,

To grind out his subsistence as a railroad-office clerk.

Now the road that John was clerking for belonged to old man Bings,

A V. P.'s chair was Rufe's in the natural course of things.

Do you think that Rufe's position netted Johnnie anything?

A seven thousand dollar job and the comforts money'll bring?

Do you think Rufe recollected Johnnie's friendship as a kid?

If you think he did, you've guessed it, that's the very thing he did.

MODESTY SHOULD HAVE KEPT THESE OUT

I am a circular sawyer of nearly 20 years experience, having run several different makes of circular saws, but the best saw I ever pulled the lever on is the Inserted 54 toothed 54" 7 and 8 gauge saw No. 44 pattern we bought of you a short time ago. I have sawed all kinds of timber with it and it has the first time to leave its line for me I will say I cannot say enough for the DISSTON SAWS. My advice to mill men is this: If you want a good saw, buy a DISSTON SAW.

Very truly yours,
N. F. WATTS, Sawyer,
Partner of Watts Bros.

Oct. 24th, 1913.

Your magazine to hand. I think it is fine. We have used your saws, both circular and cross-cuts, and find them all you claim and more.

JAMES T. KELLER.

I have had a good deal of experience with circular saws, and am using now six DISSTON SAWS in my mill cutting lumber and crate stock. The big mills in this place are things of the past and the work is done now with portable mills from 10 to 25 H. P. The greatest trouble with most sawyers is speed. They want to run a saw as fast with a 10 Horse engine as it should be with a 50 or 60 H.P.

I have always done the best sawing with a pulley on the mandrel about one-half as large as the pulley on the engine. A large pulley on the mandrel gives less motion and more power but gives a steadier motion to the saw. I have sawed 6,000 feet of one-inch boards in nine hours in frozen timber with a 12 H. P. engine using a forty inch pulley on the engine and a two inch pulley on the arbor. I have never seen a saw cut good lumber that was lagging way below the motion hammer to run.

JOHN K. JACKSON.

I find the HENRY DISSTON in Saws and Files and other stock are the best I ever put my hands on. I have used many kinds from other firms in 31 years experience. No one could say anything but good of the material in the HENRY DISSTON & SONS stock.

JOHN W. HILL.

I have been filing saws 24 years continuously. Have handled or kept most all makes and kind of saws. Have been filing here for Peart Nields & McCormack Co. 14 years. We have one band re-saw, two 40" circular re-saws and 32 small rip and cut off saws and 6 plainers, and use DISSTON saws and knives exclusively. They give entire satisfaction. Have very little trouble. Your saws are hard to beat. Have several band saws hanging in rack worn out. Not a crack in them and have not made a braze in them.

Yours respectfully,

C. M. BAYNARD, Filer,
for Peart Nields & McCormack Co.
N. Emporia, Va.

I have had a strong desire to say a few words in honor of the DISSTON SAWS, but never felt that I had the ability to say anything like what ought to be said about such a firm as the DISSTON firm. I think that they make the best saws of any firm in the world today. I have used their saws for 40 years on a small scale. They always give me satisfaction. I have the hand book on saws, and would not take \$10.00 for it, if I could not get another; also we take the Crucible which is worth its weight in gold to a man that is interested in the saw business.

Yours truly,
G. P. SHERRILL.



CHARLES T. PATTERSON

CHARLES T. PATTERSON, president of the C. T. Patterson Company, New Orleans, La. died at nine p. m. August 10, 1915. This news comes as a distinct shock to his friends and well wishers, of which there are many hundreds among the lumbermen of the Gulf States. He was apparently in full enjoyment of robust health, and a few days before his death, was apparently stronger and more vigorous than usual. On the night of his death, he returned to his home about six o'clock, had dinner, and at nine o'clock, while talking to his wife, suddenly dropped dead.

This announcement came to us with peculiar force, for we knew him long and well, and held his sterling qualities in the highest esteem, and it is hard to realize that he will no longer be with us. He was a man with an enthusiastic spirit, of a strong determination to succeed, and the magnificent business which he has built up in New Orleans, where he has surrounded himself with such efficient co-workers that his business will move along as usual is, in itself, the highest testimony of his ability.

Entering the employ of HENRY DISSTON & SONS in 1892, he became manager of the New Orleans branch about a year later; in 1898 he organized the C. T. Patterson Company, of which he was the active head up to the time of his death. He was for many years director of the Interstate Bank and Trust Co., of New Orleans; a member of the Boston and Pickwick Club; the Young Men's Gymnastic Club; the Southern Yacht Club; the Audubon Golf Club and Lake Placid Club; a Knight Templar and a Shriner. He was 53 years old and is survived by his wife, who was Miss Katie F. Patton of Summitt, Miss., five brothers and two sisters. He left no children.

OAK, TEAK AND SUBSTITUTES

OAK is a favorite lumber for woodworkers. America has about two hundred kinds of oak. The red and white oaks are chief in interest. Wasteful methods have forced Europe to look for its supply in other directions, and Japan is trying to export its oak into Germany. Japanese oak is rather knotted and gnarled, but gives a very pleasant color. Oak supply from Southern Russia seems to be more fortunate in this respect.

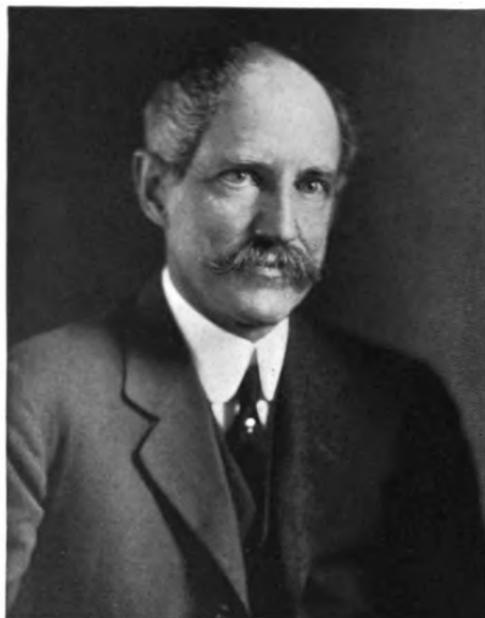
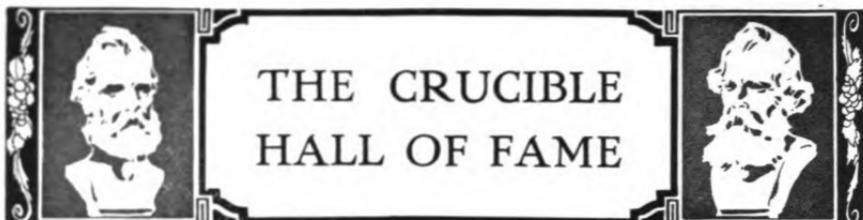
Best substitute for oak is the teak-tree, from India and Java, as also Burma and Siam. It is used extensively in shipbuilding, as wood is very oily and free of tannic acids, so that it can be used with iron construction, which latter does not rust in teak. Teak is little attacked by insects and does not warp. Teak-tree is tall, requires much air and is only at full growth when about 100 years old. Wood is specifically lighter than oak, but equal to it in strength and durability.

Annual exploitation of teak in Siam is 115,000 trees. Enormous demand has already made a dearth in this wood imminent, so that the elephants that haul the logs down to the coast have to penetrate deeper into the forests. Siamese and Burmese authorities have therefore enacted laws to protect the growths and prevent the wasteful policy that has ruined the supply elsewhere.

Increase in shipbuilding has made this wood scarce, and Australia has undertaken to provide a substitute in its eucalyptus-trees. These timbers are very hard and heavy, have a grayish and reddish tone and are suitable for parquet floors and wood pavements.

Another substitute has been suggested in the so-called "Oukome," of which Hamburg imported about 70,000 tons in 1911. It comes from west coast of Africa, and is called either Gabun-cedar or African mahogany. The color varies from yellow to violet, the wood is not as hard as mahogany, and inferior to the latter in properties. It has been in the trade only twelve years, offers enormous supplies, and is reported excellent for veneered work.

—*Woodcraft.*



JACOB S. DISSTON

FORMER PRESIDENT OF HENRY DISSTON & SONS

JACOB STEELMAN DISSTON, is the youngest and only surviving son of Henry Disston. He was born August 4, 1862, and was educated at the Episcopal Academy, Philadelphia, and the University of Pennsylvania. MR. DISSTON entered the firm's employ in 1884 in the Treasury Department. Upon the Incorporation of the Company in 1886 he was made Treasurer. This office he held until 1911 when he was elected Vice-President in which capacity he served for two years. In 1913 he was elected President. After one year he resigned the Presidency on account of poor health and the press of personal interests.

Since that time, although not active in an executive capacity, Mr. Disston

still has a strong interest in the direction of the company's policies through his position on the Board of Directors. MR. DISSTON spends a considerable amount of time at the plant each week aside from that demanded by Directors' Meetings.

MR. DISSTON'S outside interests are extensive. Among the offices which he holds at present are:

- President—Tacony Trust Co.
- President—Pelham Trust Co.
- Director—German-American Title & Trust Co.
- Director—Third National Bank.
- Director—Union Traction Co.
- Director—Manufacturers Mutual Fire Insurance Co.

WHO'S WHO IN THE SAW WORLD



GILBERT SOUTHERLAND

GILBERT SOUTHERLAND, filer for the Pacific Lumber Co., Scotia, Cal., started eighteen years ago as a machinest. After following that trade for three years he took a job as helper in the filing room of the Northern Redwood Lumber Co's mill at Riverside, Cal. After two years at Riverside, he was made filer at the company's mill at Korbel, Cal. He remained at Korbel five years during which time he became head filer. For the next two years he filed the big band saws of the Metropolitan Lumber Co. at Metropolitan, Cal. Another five years were spent with the Little River Redwood

Co. at Bulwinkle. Cal. For the past year he has been head filer at Mill B of the Pacific Lumber Co.

The equipment of this mill is as follows:

Two Head Rigs	16" Band Saws
One Re-Saw	14" Band Saws
Four Edgers	24" Saws
Two Trimmers	30" Saws
One Slasher	42" Saws
One Shingle	40" Saws

Mr. Southerland advises that nine out of ten saws he has filed and used have been **DISSTON**. Further, he wants to be quoted as saying that to him "**DISSTON**" means the best made.



ON HIS NERVES

A seedy-looking man with a consuming thirst found himself in that embarrassing financial condition which precluded the possibility of the purchase of a drink. He cudgelled his brain and finally hit on a scheme. Rushing into a drug store, he called out excitedly: "A lady just fainted outside. Have you got any whiskey?" "Why, yes, here's some," said the sympathetic clerk, pouring out a liberal quantity. "Ah, thanks," as he gulped it down: "it always upsets me to see a lady faint."

TO KEEP IN TOUCH

The hotel patron had waited fully an hour for a very slow waiter to serve two courses.

"Now, brother," he said to the waiter, "can you bring me some tomato salad?"

"Yes, sir," said the waiter.

"And," continued the customer, "while you're away you might send me a postal card every now and then."

SARTORIAL NOTE

She: Women are more resourceful than men.

He: I guess that's right. A man has to get his clothes made to fit his shape, but a woman can get her shape made to fit her clothes.—*Philadelphia Record*.

100%

"How's everything in your house?" asked Smith.

"Oh," replied Brown, "she's all right."

SIMPLE

"My wife," said Mr. Clark, "sent two dollars in answer to an advertisement of a simple method of getting rid of superfluous fat."

"And what did she get for the money? Was the information what she wanted?" asked Mr. Simmons.

"Well, she got a reply telling her to sell it to the soap man."—*Zenith*.

SOME CONTRACT!

Over the 'phone: "Hello, DISSTON. How's business?"

"Fine!"

"Seen any of this war stuff?"

"Got a big order last week from the Russian Government."

"Zasso? What was it for?"

"A new Warsaw!"

ACUMEN

Johnny's mother was tired of having her tablecloths stained. So she instituted a fine of a penny for every spot.

During tea a few days later Johnny was observed rubbing his rather grimy finger very hard on the cloth beside his cup and saucer.

"Johnny, what on earth are you doing?" asked his mother in surprise. "You'll soil the tablecloth."

"Oh, no, I won't!" replied the youngster. "I'm just trying to rub two spots into one."

RELIEF

"When I sing I get tears in my eyes. What can I do for this?"

"Stuff cotton in your ears."—*Chicago Tribune*.

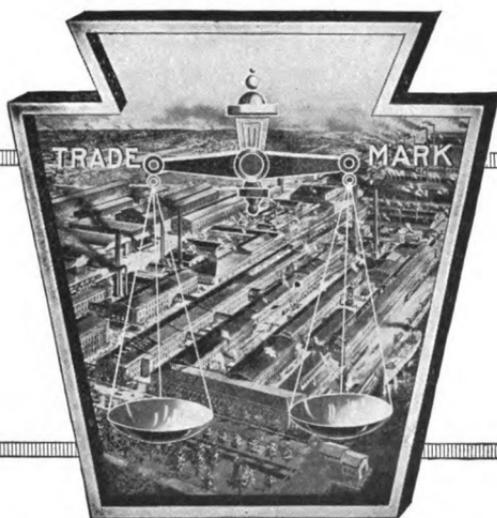
THE DISSTON CRUCIBLE

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TABLE OF CONTENTS

	PAGE		PAGE
	<i>(Frontispiece)</i>	SOME INTERESTING HARD- WOODS AND THEIR USES	125
EDITORIAL CHAT	115	HALL OF FAME	126
CROSS-CUT SAW SHAVINGS	116-117	SAFETY REGULATIONS FOR STORED LUMBER	127
ANOTHER FORD STORY	118	SAW DUST	128
GRINDSTONES	119		
THE NORTHWEST'S GREAT- EST MILL	122-124		



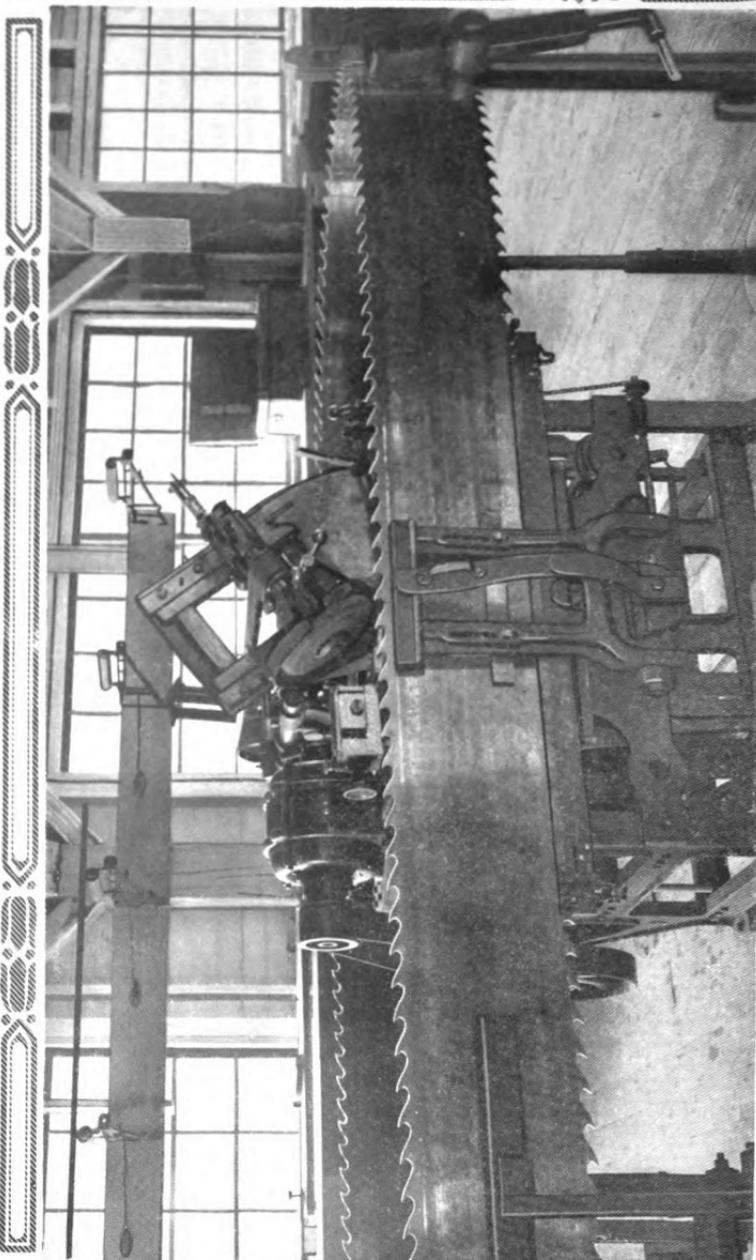
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PHILADELPHIA

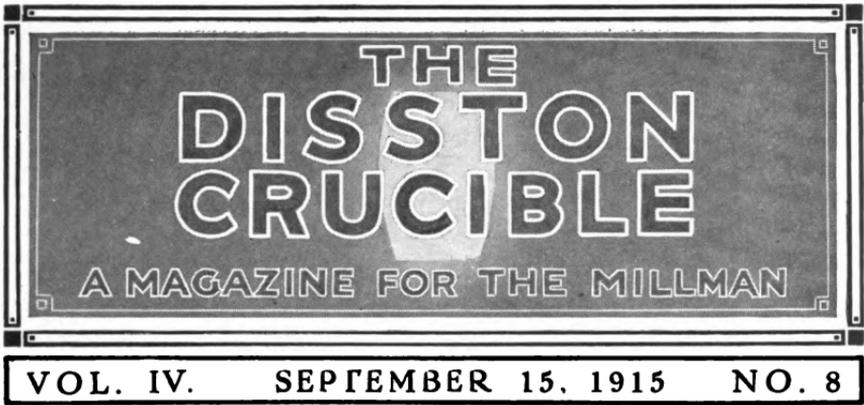
BRANCH HOUSES :

Chicago, Ills. Boston, Mass. Cincinnati, Ohio. Seattle, Wash. Portland, Oregon.
New Orleans, La. Memphis, Tenn. San Francisco, Cal. Sydney, Aus. Vancouver, B. C.
Canadian Works, Toronto, Canada.



GRINDING A DISSTON DOUBLE EDGE BAND SAW AT THE WEYERHAUSER PLANT





EDITORIAL CHAT

SERVICE

A COLUMN of Webster is devoted to defining "service"—and not one of the definitions conveys in adequate measure the sense of "service" in its commercial application. Some of the other dictionaries may give it; we didn't investigate.

Service involves numerous factors but is in itself simple. Commercially speaking "Service" means giving a customer what he wants, when he wants it. That this entails the closest regulation of manufacturing processes, distributing methods and an intimate familiarity with the requirements in the field of application (that the customer may be assisted in determining his needs), is incidental.

"Service" in business is a purely business proposition. It is prompted by a strong desire for continued and increased prosperity and not by purely altruistic motives. But just because "service" is the result of keen business insight, it is obviously so much more advantageous to the customer.

Much is heard and read of late of "service," but "service" is no new discovery. It has been the keynote of business success for generations. Perhaps not under that name, perhaps not under any name—service is a *principle*, not a thing. And the great businesses of today owe their development largely to a rigid adherence to that principle.

*Quality
Sells*



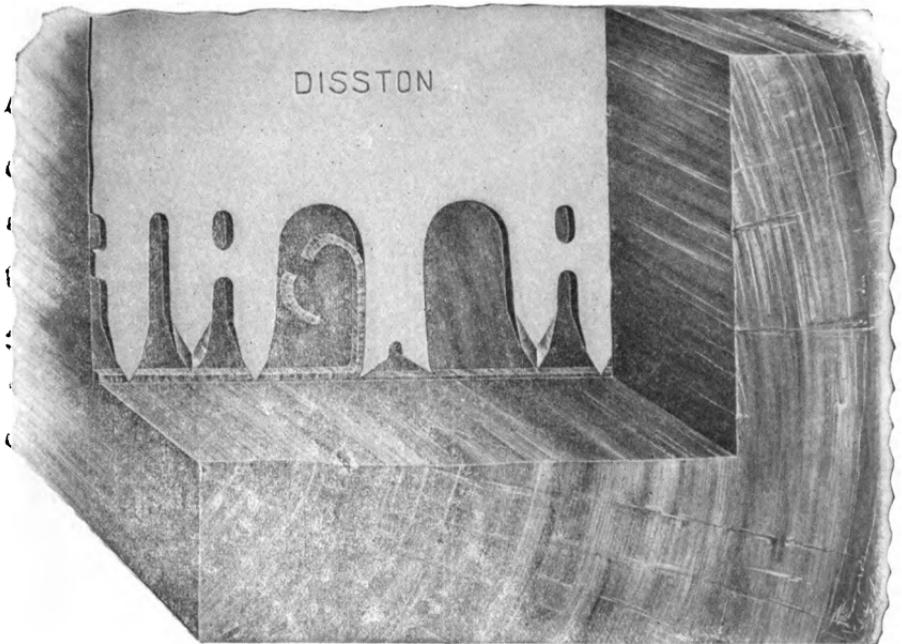
CROSS-CUT SAW SHAVINGS

THROUGH the courtesy of the Southern States Lumber Co., we show typical long-leaf yellow pine shavings cut by them with a DISSTON "Suwanee" cross-cut saw in Escambia County, Florida.

The experienced cross-cut saw man is, of course, perfectly familiar with the action of the "Raker" or "Planer" tooth. Many new men, however, are constantly entering the field and an explanation of the function of the "Raker" and the proper fitting for best results will be helpful to the uninitiated.

All the cutting or severing of the wood fibres in cross-cutting is done by the pointed teeth. Two parallel scorings are made in

THE DISSTON CRUCIBLE



the wood, one each side of the saw. The sole duty of the "Raker" is to plane or clean out the ridge of wood left between these scorings, thereby keeping the cut clean. This action is clearly shown in the drawing above and the photograph opposite shows the shavings thrown out of the cut by a well fitted saw.

The "Raker" should always be a little shorter than the pointed teeth—from $1/100$ of an inch to $1/32$, depending on the kind and condition of timber. If the "Raker" is longer than the cutting teeth, instead of simply clearing the cut of wood fibres already severed, it tears the uncut fibres and causes the saw to ride or jump. This defect in the fitting will not only make rapid and clean cutting impossible but makes the operation of the saw extremely difficult.

ANOTHER FORD STORY



THIS ford is a mile and a half long and is on the Gaspe Coast at Cascapedia. Mr. E. F. Sinton, traveling from our Toronto Branch, crosses it every so often in a buggy (he is seen in the photograph holding a grip) to look after the Cascapedia Lumber and Trading Co's requirements in DISSTON SAWS. The mill is seen in the background. Mr. Sinton tells us that the water is frequently up to the bottom of the buggy and occasionally he has to hold his traveling bag on his knees to keep it dry. By crossing here however, Mr. Sinton saves a long detour and he quite agrees with the thousands of others who find the ford a great convenience.

THE COVER

The magnificent size of the felled giant shown on cover of this issue is plainly shown in comparison with the size of the men in the photograph. It is interesting, however, to consider the tree shown in the lower right corner. This tree was felled simply to facilitate operations on the large tree, but is in reality of very fair proportions itself.

GRINDSTONES

PROBABLY to the great majority of people the mention of grindstones awakens recollections of toilsome, perspiry hours at the crank in the wood-shed while the old man ground the nicks out of the axe. To these the foot-treadle type of two-foot stone with the punctured tomato can water supply represents the highest development in the line.

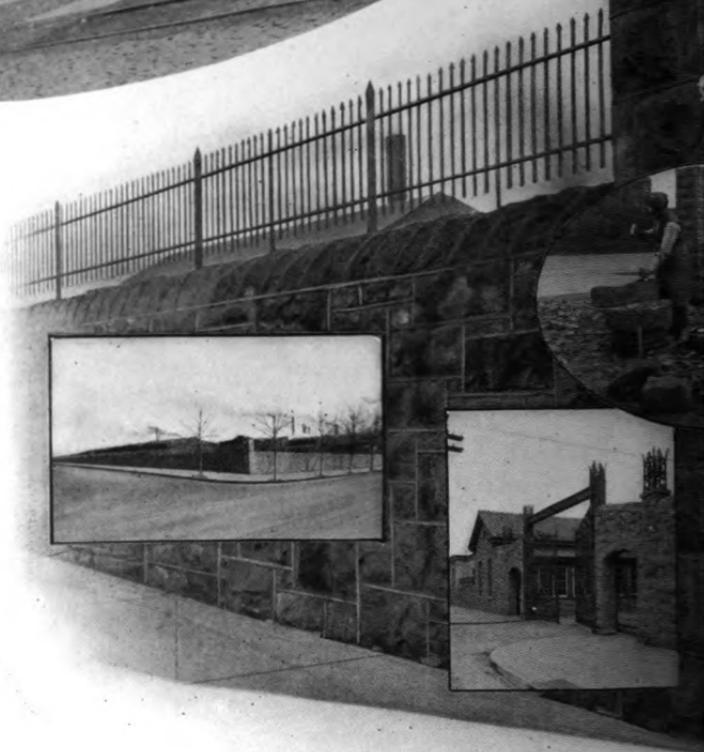
It probably would be difficult for them to conceive of one concern using so many grindstones that the entire time of a gang of ten men was required to handle them. Yet this is the scale on which grindstones are used in the DISSTON Plant—ten men are kept busy replacing worn out stones with new.

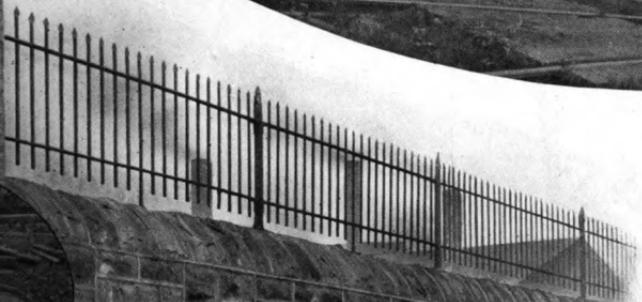
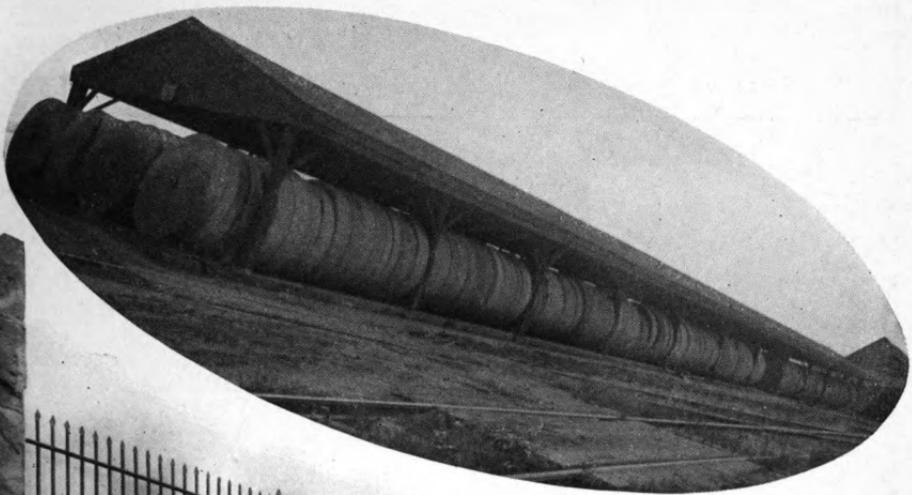
No toys, either, these grindstones. Various sizes are used but all of them are over four feet in diameter and many of them six feet with faces ranging from five to thirteen inches.

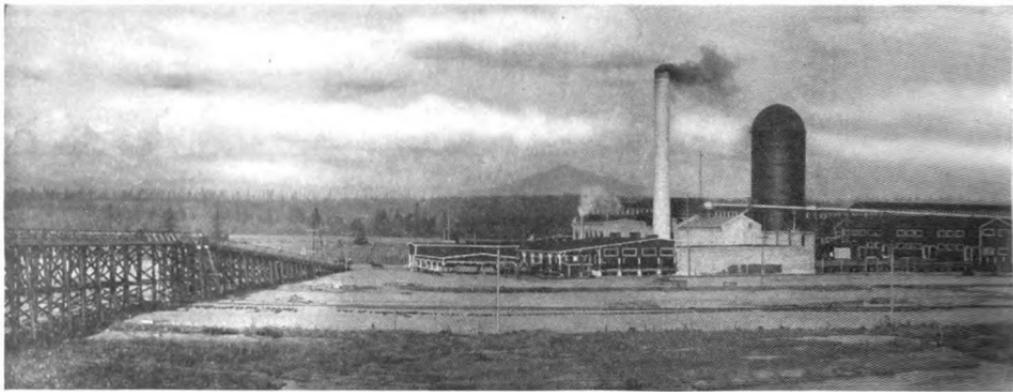
The upper right hand picture in the center-spread of this issue is a photograph of one of the two big grindstone sheds. The left hand picture shows another large collection of grindstones awaiting their turns (pardon the pun). The lower picture shows a carload of stones as they reach the DISSTON Plant, and it is very seldom that one or more such cars is not to be seen on the siding to be unloaded.

The picture in the center is a corner of the stone-wall which encloses the front and side of the immense plant of the DISSTON COMPANY. The wall is seven feet high above ground, one and a half feet thick and has a net length of nearly a mile. It is made from grindstones worn down in the manufacture of DISSTON SAWS. Moreover these stones represent the accumulation of only the few years from 1900 to 1907 in which year the stone-wall was completed.

Only these of the hundreds of thousands of stones used are left. The rest are all scattered. But just think of them as placed end to end and stretching for hundreds of miles. Then think of the one in the wood-shed. "All things are comparative."







THE NORTHWEST'S

THE Weyerhaeuser Lumber Co., with its two great plants at Everett, Washington, is the greatest lumber manufactory in the Northwest and one of the greatest in the country.

The two mills are known as "Mill A" and "Mill B." "Mill A" produces eighty million feet of fir lumber a year and has been in operation for ten years. A stock of from twenty-five to thirty million feet is carried at all times at this mill. "Mill B" is a new mill, which began cutting in June of this year. This mill produces one hundred and twenty million feet per year and carries a stock of forty to fifty million feet. The combined output of the two mills if shipped by railroad would aggregate eight thousand carloads per year—an average of twenty-six cars daily.

"Mill A" is built over tidewater and "Mill B" upon a hundred acre sand flat. This sand flat was filled in by hydraulic dredge from the Snohomish River and makes a splendid foundation for a lumber yard. All buildings are built on piles capped with concrete. The principal buildings are the saw and re-manufacturing mill, with sorting chains; the stacker, dry kilns, machine shop, planing mill and dry shed, and refuse burner.

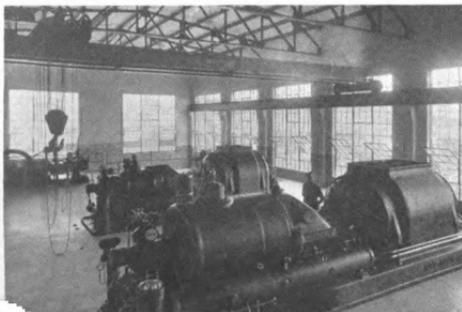
Probably the best idea of the up-to-dateness of equipment and methods will be gained by following the course of a log through the mill into the finished product. In the Power House two 500 horse power boilers, fed automatically with sawdust fuel, supply steam at 125 pounds pressure to two 3,000 kilowatt turbo-generators. The current is then distributed to nearly three hundred motors throughout the plant.



Officers and Visitors.



Filing Room.



Portion of Power Room.

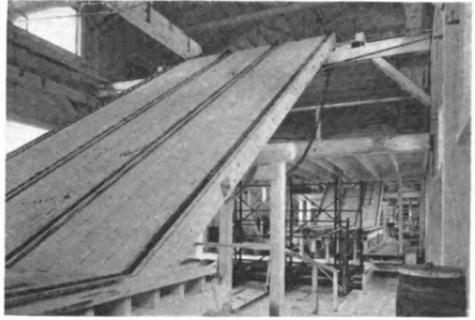


LARGEST MILL

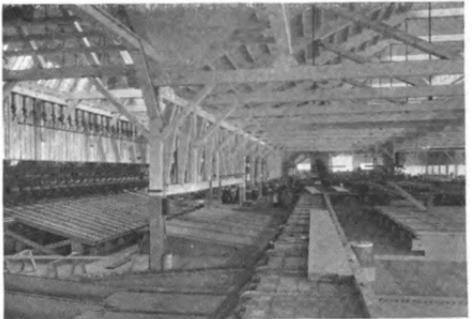
The log supply is brought to the mill either by rafts up the river, or by rail direct from interior forests. A log dump accommodating thirty-five cars facilitates rapid unloading into the pond, whence the chain lifts them through a log-washer (by which dirt and grit are washed off) and deposits them on the log deck, where two band saws, one eleven-foot and one nine-foot are awaiting them.

The sawyer rolls the log on the carriage, takes off the slabs, and reduces the log into "cants," which go to the smaller units for further manufacture. The slabs are kicked off the rolls to the slasher, which cuts them into four-foot lengths, and they are made into lath or fire wood. The smaller cants are sent through the edger, where they are squared; probably a large timber for Australia comes next from the saw; this is trimmed and sent to timber deck, to await the locomotive crane, which loads it upon a scow. The largest cants from the head saws are forced by power rolls through a huge gang saw by which a cant fifty-four inches wide and twelve inches thick can be reduced in one operation to one-inch or two-inch boards.

The lumber from the edgers and gang is passed over trimmers which cut away defects, and reduce it to suitable lengths, and it then pours over live rolls upon a transfer table, where skilled graders mark each piece, giving directions as to its further progress. Suppose a piece is four inches thick and it is desired to make two two-inch planks, an automatic roll pulls it from the chains and rushes it away to seven-foot band resaws, which give it the desired size, and it rolls back to the chain, passing again before the grader.



Interior Lumber Stacking Building.



Interior of Saw Mill



Burner and 200 ft. Concrete Chimney.

THE DISSTON CRUCIBLE

If a piece is sixteen inches, and two eight-inch pieces are wanted, the live roll whisks it away to a fast feed edger which rips it in two, another automatic trimmer is ready to eliminate further defects, after which it returns to the grader for final inspection, and passes out from the mill.

Two hundred and forty lumber cars are lined up at the sorting chains, and upon them the lumber is placed, each length and size separately. When a load is completed, it is pushed upon a steel transfer car, operated by electric trolleys, and left at the planing mill storage. Then a ten-ton electric crane, traveling on an overhead runway, lifts the load from the car with an electrically operated carrier, and places it upon live rolls in front of the planers. Fast feed planers, with automatic feeding tables, dress the lumber at two hundred lineal feet per minute, and it is loaded upon cars for piling in the yard.

The rough clear lumber after passing the grader in the saw mill, is drawn off by live rolls and travels rapidly to the "stacker room." Here, three automatic stackers pile it upon edge on kiln cars, and it is run into the six large brick dry kilns where steam heat from miles of pipe dries all the moisture from it. It is then unstacked automatically, loaded upon cars and transferred to the planing mill, there to be dressed into clear flooring, ceiling and siding.

Two electric storage battery locomotives of seven-ton weight, pull the cars loaded with lumber from the planing mill, and distribute it into the immense yard, where sixty million feet can be stored for air drying. The yard is laid out like the streets of a city, and about fifteen miles of tracks give easy access to every alley. Train loads of

lumber are pulled by the locomotives, and the lumber is piled from the cars. The dressed clear lumber, after being graded and bundled, passes on an endless belt into the great dryshed, six hundred and fifty feet long, and is there piled away by length and grade, ready for shipment. A train of fifteen railway box cars can be backed directly into this shed, and the cars loaded under shelter—kiln dried lumber from the shed going in one door, and the air dried lumber brought from the yard by the electric locomotive, in the other.

There is not room to describe many features of this wonderful manufacturing plant—the fire protection and the fire alarm systems, the electrically operated valves and skids, the speed reducing gears which reduce the power from the high speed motors to the slow moving conveyors, the fully equipped machine, blacksmith and wood-working shops, the air compression system which actuates cylinders and cleans the motors and other machinery, the electrically operated filing room where the saws are sharpened, the conveyors and wood-loading machinery, and many other features which have in this mill been so fully developed. But the one salient feature which impresses every visitor is the absence of the ponderous moving mass of shafting, belting and pulleys, and the great saving in expense and labor effected by the widespread use of electricity in all departments.

Transportation facilities for handling the product of the mills are excellent. Beside being on a navigable river, the mills are served by four great trans-continental railways. The company has a justly earned reputation for prompt and efficient service.

DISSTON SAWS are used throughout in both mills.



Boiler Room.



Dry Kilns, Stack, Burner, Mills, Sorters and Crane.

SOME INTERESTING HARDWOODS AND THEIR USES

BOXWOOD tree is of light and dark yellow tints, very hard, dense, uniform in structure, allowing a fine finish. European boxwood is used for musical instruments and fine wood-working; the finest wood comes from Asia Minor and Persia. For decades the coast districts in these countries have been exploited, and it is necessary to go deeper into the interior for supplies. African, West Indian and Australian boxwood are suitable substitutes.

In same category belongs the West Indian grenadilla or coconut wood, which has a copper-red color, showing a violet streak, with an odor of rose, used for fine musical instruments.

From the Portuguese island of St. Thomas comes Cabole wood, having a yellowish or light brown color with darker streaks, is hard and durable like mahogany, is easily worked and gives a fine finish. Its specific gravity, 0.78, nearly that of mahogany. It is used for making curios and is very expensive. Heavier than above is West African olive wood. It is hard to work, having extreme hardness, heavier than water in specific gravity, and is about as heavy as ebony. Close-grained structure, yellowish-red tone, fine polished finish, and resistance to temperature changes make it a very desirable wood.

Mangrove forests of Africa might be mentioned, from which large quantities of timber are exported. The wood allows wonderful color effects to be produced, has a pleasant scent and is said to permit the woodworker to obtain most gorgeous or harmonious color effects imaginable.—*Wood Craft*.

CHANGED HIS MIND

An Alabama negro was defended in court by Senator Morgan. Having cleared the negro of the charge, the Senator said to him: "Rastus, did you really steal the mule?"

"Well, Marse Morgan, it was just like this," said Rastus. "I really thought that I did steal dat mule, but after what you said to the jury I know I didn't."

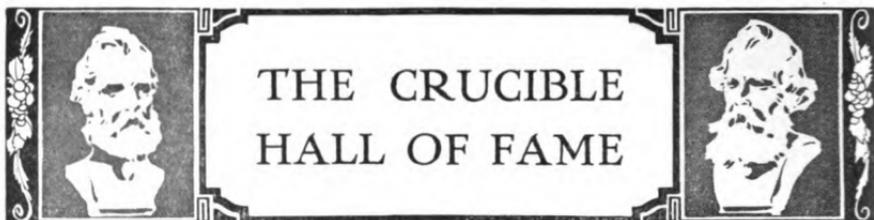
THE BRIGHT SIDE

The pessimist was suffering from rheumatism.

"Every bone in my body aches," he complained.

"You ought to be glad you are not a herring," said the optimist.

Patience is due the helper; were he as fully informed as yourself, you wouldn't expect him to be a helper.



MR. FRANK DISSTON

FRANK DISSTON, President of HENRY DISSTON & SONS, was born August 4th, 1879. He is, with one exception, the oldest grandson of HENRY DISSTON, the founder of the business. He received his education at Penn Charter School and the University of Pennsylvania taking up his work with the Company in 1898. Although a young man, Mr. DISSTON has keen judgment and executive ability and upon the death of the President of the Company, WILLIAM DISSTON, early this year, he was elected to fill the vacancy.

SAFETY REGULATIONS FOR STORED LUMBER

Certain rules for the safe storage of lumber, from which we can gather a wrinkle or two of worth

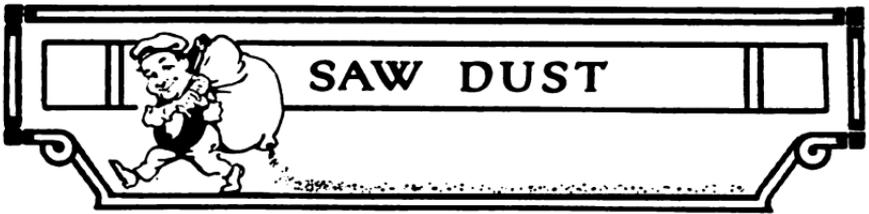
SEVERAL disastrous fires have caused the authorities in various German cities to make more stringent the safety regulations for lumber storage. Most important of these fire prevention rules are taken in abstract from "Die Holzwelt."

If quantity of lumber stored exceeds 17,500 cubic feet, and the area covered by the lumber is over 1,000 square feet, special permits must be obtained from police and fire departments. Lumberyards must have an 8-foot high solid wall or fence and if near to houses the wall must be brick and at least 12 feet high. Lumber must not be within 3.3 feet of wall. Buildings in yard or near it must be protected from lumber by a high masonry wall. If the buildings are not protected by walls, lumber must be 20 feet from buildings. Every lumberyard not opening directly upon a street must be connected with it by driveway 10 feet wide. Lumber stored in open air without fireproof covering may be stacked to height of 20 feet.

Yard is to be divided into squares of at most 5,000 square feet area, and these squares must be separated by 10-foot wide paths. Outside business hours these paths must be clear of obstructions so that apparatus may not be hindered in getting to all stacks in case of fire. In special cases, where position is isolated, the fire department may require construction of special water tanks and other safety equipment.

Storing lumber in quantities of more than 3,500 cubic feet is allowed in buildings devoted exclusively to lumber storage on all floors; in buildings used for other purposes, only in cellar or underneath roof. In latter case, storage rooms for lumber must not be in direct communication with stairways, and must have exits leading directly into open air. They must be surrounded by solid masonry fire walls. In buildings where these storage rooms have exits to stairway, only 1,750 cubic feet of lumber may be stored, and then only if the lumber room is inclosed fireproof with brick fire-curtain walls, and separated from stairways by iron doors. No lumber may be nearer than 100 feet of railroad tracks.

—Wood Craft.



A DARK DECISION

A gentleman walking through the negro portion of an American town came across a woman unmercifully beating a little boy.

"Here, auntie," he said, seizing her arm, "you must not do that. What has he done, anyway?"

"What's he done? If you want to know, he's ben and lef' de chicken hous' do' open, and all dem chickens got out."

"Well, that is not so serious," said the gentleman, soothing; "chickens always come home to roost."

"Come home!" snorted the woman; "dem chickens will all go home!"—*Exchange.*

TO BE CONTINUED

Passing through a military hospital, a distinguished visitor noticed a private in one of the Irish regiments who had been terribly injured.

To the orderly the visitor said: "That's a bad case. What are you going to do with him?"

"He's going back, sir," replied the orderly.

"Going back?" said the visitor, in surprised tones.

"Yes," said the orderly. "He think he knows who done it."—*Tid-Bits.*

NO COMPLIMENT

MAGICIAN—I can read minds.

ENGINEER—Yuh ken? Ken yuh read mine?

MAGICIAN—Certainly.

ENGINEER—Why don't yuh hit me, then?—*New York Globe.*

PURSUED

A shame-faced youth struggled along the street gripping in his arms a full sized dressmaker's dummy. A carter spied the blushing youth and his face lit up.

"Urry up, old chap," he said in a stage whisper, "er father's after you."

VICE VERSA

"I think that children are not so observing as they used to be," said a member of the School Board to a teacher whose class he was visiting.

"I hadn't noticed it," replied the teacher.

"Well, I'll prove it to you," answered the committeeman. Turning to the class he said:

"Some one give me a number."

"Thirty-seven," said a little girl eagerly.

He wrote "73" on the board. Nothing was said.

"Well, some one else give me a number."

"Fifty-seven," said another child.

He wrote "75" on the board, and smiled knowingly at the teacher when nothing was said. He called for a third number and fairly gasped at the indignation manifested by a small red-faced urchin, who said: "77, and see if you can change that."—*Ladies' Home Journal.*

CROWDED

An Alaska pioneer was telling how crowded a certain ship was during the gold rush. One day a man came up to the captain and said:

"You will just have to give me some place to sleep."

"Where have you been sleeping?"

"Well," the passenger replied, "I have been sleeping on a sick man, but he's getting better now, and he won't stand for it."

Pat was going along a road, and, wanting a match, called at the house of a farmer. The woman who gave the match asked Pat if he wanted work. The reply being in the affirmative, the woman brought him into the house.

"There is a room full of flies. I want you to kill them."

"Good," said Pat, taking off his hat and coat. "Send them out one by one."

THE DISSTON CRUCIBLE

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TABLE OF CONTENTS

	PAGE		PAGE
BANNER SHOWING PRIZES AWARDED BY THE PANAMA-PACIFIC EXPOSITION TO HENRY DISSTON & SONS (<i>frontispiece</i>)		ON SALMON LAKE, QUEBEC	135
EDITORIAL CHAT	131	A STEEL GRAB HOOK, THIS TIME	138
SANITARY ARRANGEMENTS IN LOG- GING CAMPS	132-133	RUSSIA'S ONE BAND MILL	139
"DISSTONS" HAVE A GOOD RECORD IN THIS MILL	134	THE LUDINGTON WOODENWARE CO.	141
		THE WORLDS LARGEST WHITE PINE TREE	142
		PRaise FROM THE ANTIPODES	142
		WHO'S WHO	143
		SAW DUST	144



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HENRY DISSTON & SONS

... INC ...

PHILADELPHIA, U. S. A.

PRIZES AWARDED US

by Panama-Pacific International Exposition

1915 · SAN FRANCISCO · 1915 ·

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for Hand Saws and Carpenters' Tools.

GOLD MEDAL (HIGHEST AWARD)

for Bricklayers' and Plastering Trowels.

GOLD MEDAL (HIGHEST AWARD)

for Cloth and Leather Splitting Knives.

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THEODORE HARDEE, CHIEF

SILVER MEDAL

for Chipper and Barker Knives

THE DISSTON CRUCIBLE

A MAGAZINE FOR THE MILLMAN

VOL. IV.

OCTOBER 15, 1915

NO. 9

EDITORIAL CHAT

LARGE SCALE PRODUCTION

THE fact that the volume of a concern's business has a direct bearing on the quality of its product, is one which frequently is overlooked by the layman. Nevertheless, large scale production affords the manufacturer many advantages for the perfection of his product.

In the matter of machinery and equipment, for instance, cost and maintenance are distributed over a great number of the article produced. Not only is the fraction of the burden borne by the individual article negligible, but it is more than offset by the economy afforded by the use of modern equipment. Thus equipment, the cost of which would be prohibitive with a limited production, is a genuine economy for the large producer. The effect of the use of modern equipment on the quality of the product is, of course, obvious.

And so through every branch of the great business from the research and experimental laboratories to the shipping room where the finished product is started to its destination. The installation of up-to-date equipment and methods not only is made possible by the broad distribution of the expense, but its use is imperative because of the economy effected.

The result is that the product of the large manufacturer is the finest that science can produce from the best of raw material with unsurpassed equipment.

SANITARY ARRANGEMENTS IN LOGGING CAMPS

By DR. R. B. AUSTIN, Camp Physician, Fernwood Lumber Co.

WHEN we consider this subject, the question at once enters our mind, is it possible to have a sanitary camp? Why does this question present itself? Because we know that as a rule most companies employ transient labor; and we know that this class as a rule care little about their personal hygiene, and less about sanitary surroundings. Of course, this does not apply to all, for very often some will strive to have as sanitary surroundings as if they were in homes owned by themselves.

A high and dry location should be selected for the camp.

To have a sanitary camp we must eliminate the following things:

- (1) House flies.
- (2) Mosquitoes.
- (3) Spring and surface waters.

To get rid of the house fly we must know his breeding places, which are barns, open privies, and garbage.

Barns should be cleaned daily, and the manure put in a screened pen or piled and treated with borax.

Privies should be screened and have cans to collect the excreta.

All cans should be removed daily.

Mosquitoes breed principally in stagnant water. Knowing this fact all pools of standing water should be drained if possible. When it is impossible to drain, petroleum should be used freely on all stagnant pools.

The cans, broken bottles, etc., should be gathered up and carried at least one-fourth mile from camp. Weeds and grass should be cut at least every two weeks.

All houses should be screened, and where 'mosquitoes' are very bad, bars should be used.

Surface and spring water should never be used for drinking purposes, unless boiled before using.

Each camp should have the following mottoes tacked up in a conspicuous place:

"The only good fly is the dead fly."

"Well-kept alleys pay better dividends than well kept cemeteries."

THE DISSTON CRUCIBLE

"Public health is public wealth."

"Bat the rat and swat the fly."

"All the time is clean-up time."

"Dust, dirt, dampness, darkness and drink will always kill."

It is very easy for each person to get in the habit of never passing over anything that is a menace to public health.

Some contend that it is much cheaper to have an unsanitary camp. But if anybody will investigate he will find that one well man can do as much as two in bad health.

Each company that has a sanitary camp has to employ fewer men, and can keep better men, than one with an unsanitary camp.

No camp is complete unless it has churches, schools and Sunday-schools.

The blind tigers and gamblers that frequent most camps should receive such a warm reception that it is impossible for them to stay. Of course this might be left out, but we know that man has to be moral, well educated and have good habits to be sanitary.

THE NORTH CAROLINA PLAN

Norman C. Schlichter, one of the International Committee of Y.M.C.A.s, has sent the secretary a copy of the bulletin of the State Board of Health of North Carolina for September 1914. It says:

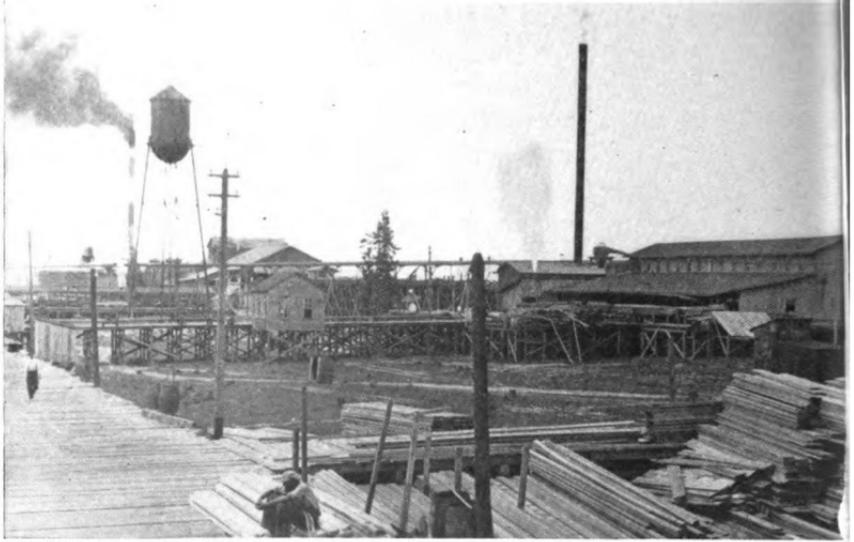
"The simplest form of privy yet devised for use is built fly-tight over a pit or hole in the ground at a safe distance from the well and on lower ground than that around the well. It is the type recommended for rural schools. In no cases should the privy be located closer than 150 feet from a well or spring.

"Special care must be taken to see that the carpenter weather-boards the back of the privy tight and clear to the ground on all sides, and that the fecal matter in the pit is in no way exposed.

"Should the vault become filled, all that is necessary is to tilt the privy over, dig a new pit or hole nearby, and cover the matter in the old hole with the excavated earth. Ordinarily, such treatment will not be necessary for several years.

"It is not claimed that such privies are odorless or perfect in every respect. In fact, there is nearly always some odor about them, but diseases are not contracted through odors, and while by means of more expensive arrangements or even by the application of dry earth the odor may be overcome, such arrangements are not thought necessary."—*Courtesy of "Logging."*

"DISSTONS" HAVE A GOOD RECORD IN THIS MILL



IT is the Temple Lumber Co.'s mill at Pineland, Texas. Mr. John Adams is Vice-President and General Manager, Mr. W. I. Effinger, Treasurer and Assistant Manager, Mr. Dave Byrd, Mill Foreman, Mr. Guy Bostic, Filer and Mr. Gibson Irbey, helper. All of them are staunch DISSTON enthusiasts.

Mr. Bostic and Mr. Irbey have run down six DISSTON SAWS to $8\frac{1}{2}$ and 9 inches and only one saw in the entire lot has developed a crack and that saw has only two. All six have only the factory braze or a single additional. Three of the saws are still in the rack and are used as extras. Previously they had all been in constant service from eighteen to twenty-four months.

Both Mr. Bostic and Mr. Irbey are loud in praise of the quality of DISSTON SAWS. But nobody knows any better than we that the successful operation of any saw is impossible without proper care. The results secured by Mr. Bostic and Mr. Irbey attest skillful attention as well as the high quality of the saws for without the combination such a record could not have been made.

THE DISSTON CRUCIBLE



ON SALMON LAKE, QUEBEC

THE photograph above, is a view by moonlight of the Price Brothers & Co. mill at Salmon Lake, Que. The plant comprises circular and shingle equipment and Disston SAWS are used throughout.

However, the picture is published for its artistic value rather than in the hope of conveying any accurate impression of the plant itself.

HIGH SPEED

The old mountaineer, who was standing on the corner of the main street in a certain little Kentucky town, had never seen an automobile.

When a good-sized touring car came rushing up the street at about thirty miles an hour and slowed down just enough to take the corner on two wheels, his astonishment was extreme.

The old fellow watched the disappearing car with bulging eyes and open mouth. Then, turning to a bystander, he remarked solemnly:

"The horses must sho'ly ha' been traveling some when they got loose from that gentleman's carriage!"

—*Philadelphia Ledger.*

QUESTIONABLE METHODS

The city youth secured a job with Farmer Jones. The morning after his arrival, promptly at four o'clock, the farmer rapped on his door and told him to get up. The youth protested.

"What for?" he asked, rubbing his eyes.

"Why, we're going to cut oats," replied the farmer.

"Are they wild oats," queried the youth, "that you've got to sneak up on 'em in the dark?"—*Circle and Success.*

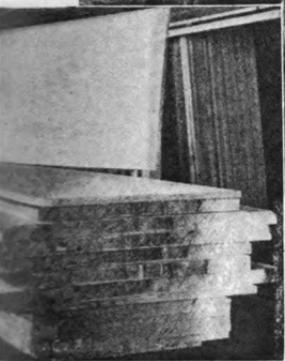
ON INSTALMENTS

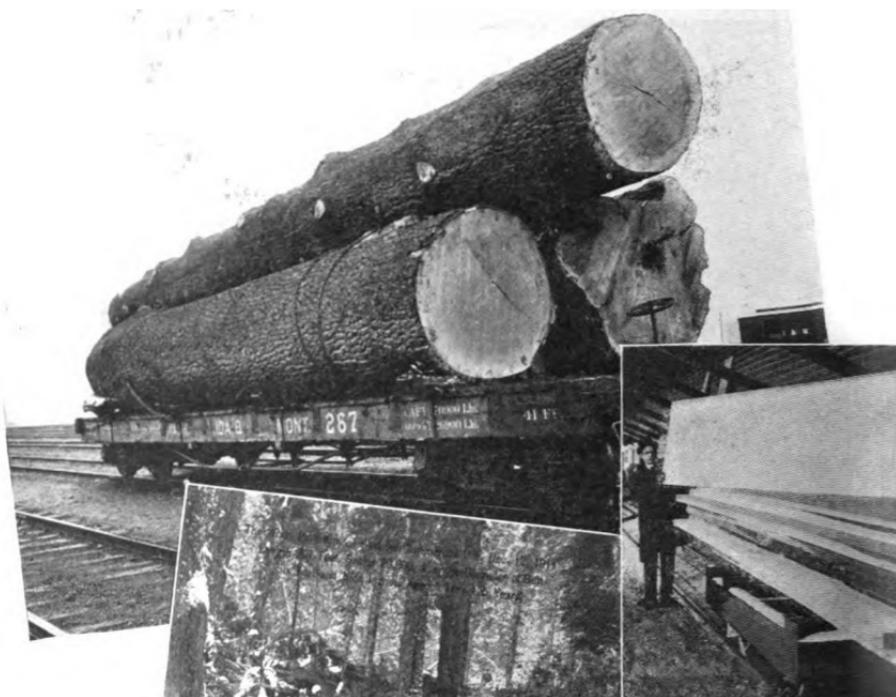
"Is this piano yours?"

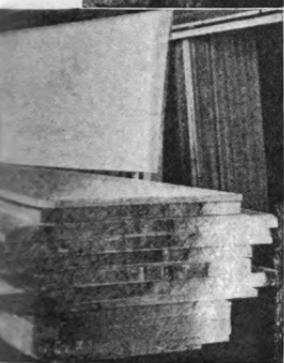
"Oh, about an octave of it."

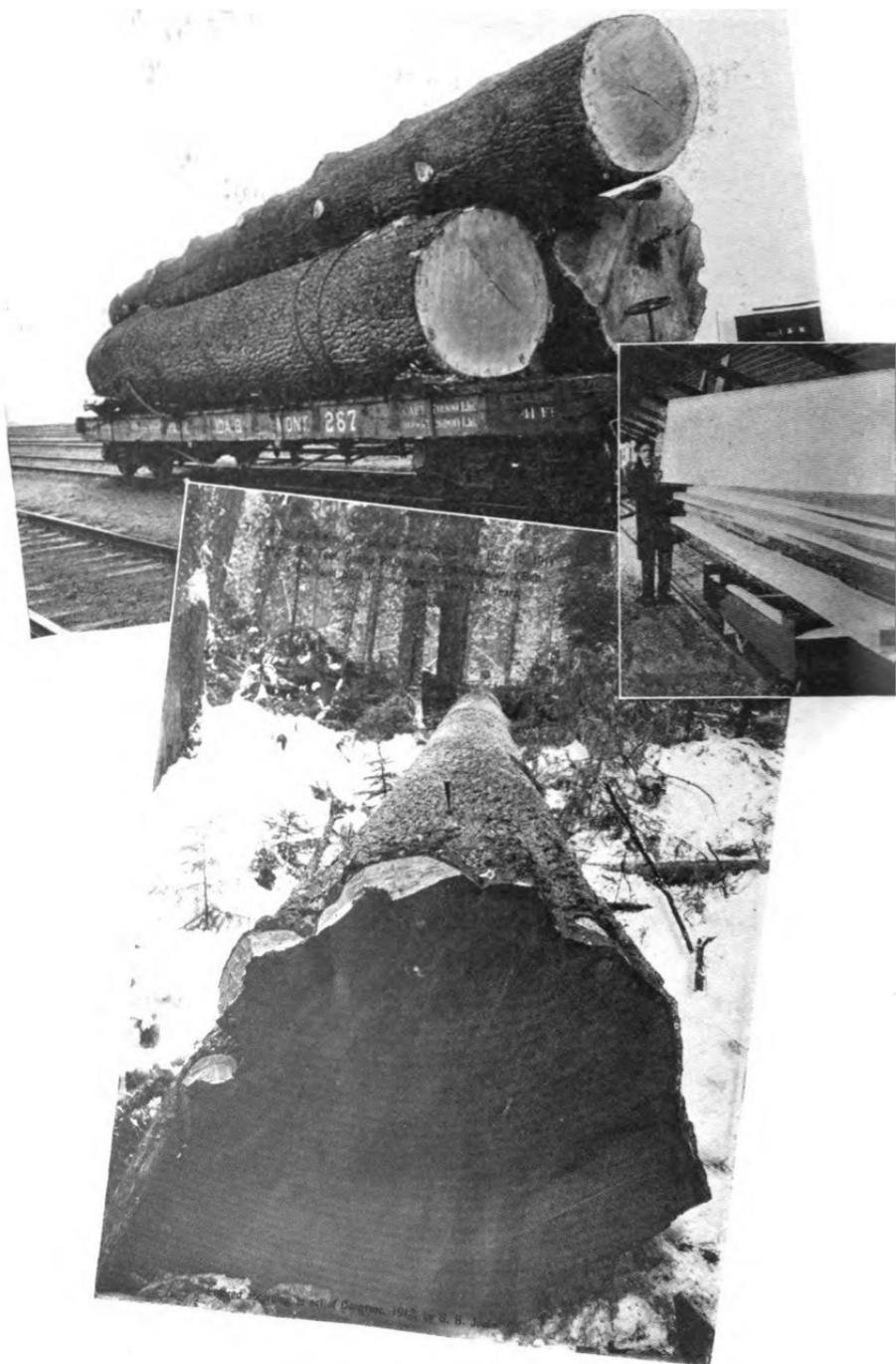
—*Boston Transcript.*

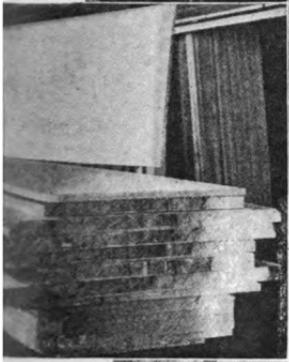














A STEEL GRAB-HOOK, THIS TIME

IT is interesting to note the variety of foreign material encountered by saws. We have records of "DISSTONS" hitting about everything from stone to steel, and it is seldom that the "DISSTON" suffers greatly from the experience. "Re-swaged and sharpened and put on the next run" is about the way it is usually expressed by mill-men when writing us of the accidents.

The photograph is of a steel grab-hook which was sawed out in the mill of the Ruth Bell Lumber Co., without material injury to the saw. Mr. J. M. Gray, filer of this mill writes as follows:

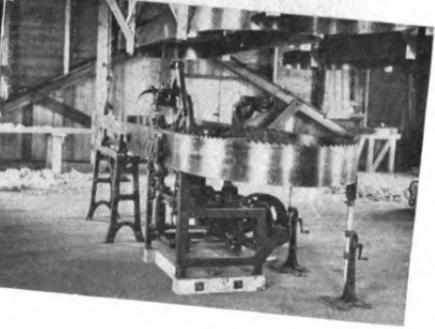
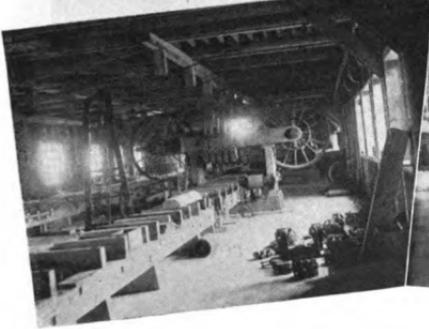
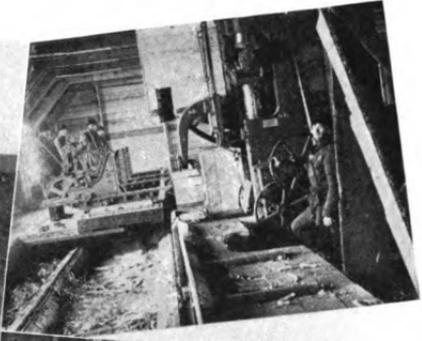
"Of the experience I have had with all brands of saws I have always found the DISSTON to be in every way superior to all others. I have run two 45-foot by 12-inch 14-guage band saws continually for the past eight months, partly in frozen timber. They are now $11\frac{1}{8}$ -inches wide and not a crack in them.

"I could not ask any saw to give more satisfactory service than this and so long as DISSTON SAWS do, I shall not consider a change.

"The piece of steel which you can see was cut off by a saw was cut by one of the DISSTON SAWS above mentioned, same merely taking off the swage, or in other words destroying about $\frac{1}{8}$ -inch of the saw. This is one of the grab-hooks used in the woods and is of high carbon tool steel."

(Signed) J. M. GRAY.

THE DISSTON CRUCIBLE



RUSSIA'S ONE BAND MILL

HENRY DISSTON & SONS,
PHILADELPHIA, PA.

GENTLEMEN:

Owing to the severe censorship in Russia and other parts of Europe since the beginning of war, I have been unable to send you an article on lumbering and saw-milling in Russia.

Lumber is made in Russia from three kinds of wood; Pine, Spruce and Lestenezia, the latter, very hard and tough, and the former very much the same as in the United States. There are vast forests of virgin timber in Russia; there are also a great many mills and all are gang mills with one exception, a 6-foot band-mill and resaw, equipped with "DISSTON" SAWS, erected at Tzaritzzen on the Volga River, South Central Russia. This is the first and only band mill in Russia and belongs to a large industrial concern who use most of the lumber for constructing houses for their workmen.

Grades are unknown in Russia, and the new Clark mill is a revelation to

the Russian lumberman, and henceforth Russia will gradually drift into grades.

Mr. Frank McConnell of Pennsylvania who was sawyer and the writer, Harry J. Gillis, filer, made the test for this mill, which was successful on July 19, 1915, cutting over three hundred 30-foot logs in ten hours, on a 6-foot band mill, with 10-inch 16-gauge DISSTON SAWS.

I am enclosing you photos of different stages of construction of the new Clark mill at Tzaritzzen also a "rough sketch" of Mr. McConnell and myself.

My appreciation of DISSTON SAWS and DISSTON goods are known to you, as I have handled them for many years in the South and on the Pacific Coast.

Trusting these few lines will find their way to your readers, I am,

Respectfully,

HARRY J. GILLIS,

P. S.—I wish to thank you for former copies of the Crucible.

THE DISSTON CRUCIBLE



VIEWS OF THE LUDINGTON WOODENWARE COMPANY'S MILL

THE LUDINGTON WOODENWARE COMPANY

THE Ludington Woodenware Company was organized in 1889 by Henry B. Smith and a number of his townsmen of Ludington, Michigan, for the purpose of manufacturing clothespins, wood bowls, wire end dishes, butter moulds and other small wooden articles. In a few years Captain Smith absorbed the stock of his associates and became sole owner of the enterprise, which he continues to control to the present day. In 1914, owing to the scarcity of hardwood timber in its locality, the company made plans to remove to Wilmington, Vermont, where its present modern and highly efficient plant began operations in June of this year. In the present mill there will be manufactured clothespins, wood dishes, wood bowls, butter moulds, mop and broom handles, spindles and a variety of woodenware. The plant is situated in the heart of the Green Mountains, and uses picked hardwood timber cut from high altitudes for the manufacture of its products. The new plant has a much greater capacity than the old. Here are in operation twelve clothespin machines, turning out 125,000 clothespins per day, ten dish machines making 350,000 wooden dishes per day. In connection is a complete saw mill, which will cut lumber in addition to stock for the mills various products. It consists of one eight-foot band mill, one six-foot band mill, a four saw equalizer, edger and trimmer, with special sawing machinery to cut blocks for clothespins. Throughout the plant sixty-one saws, band and circular are in constant use, and a horizontal band slab resaw and two twin band rip saws are in process of addition to the equipment. The logs from which the product is cut are drawn into the yards on a narrow gauge railroad which runs into the timber on the mountain eighteen miles away. The efficient and highly experienced saw filer is Mr. William Moran, Mr. George Ard is superintendent of the plant. Mr. Howard B. Smith, son of Captain H. B. Smith, is treasurer and general manager.

Sawing this hard Vermont Maple, Beach and Birch requires that the saws be in the pink of condition. They are getting maximum results with the combination of DISSTON SAWS and skillful fitting.

THE WORLD'S LARGEST WHITE PINE TREE

The largest known white pine tree is illustrated on the front cover and also the center spread of this issue of the Crucible.

This giant was felled by the Potlatch Lumber Co. of Potlatch, Idaho. It was 207 feet long, scaled 28,900 feet and had an average butt diameter of 6 feet, 9 inches. The age of this monarch of the forest was 425 years.

That means that it was a two-year old sapling when Columbus discovered the continent—that it has lived and grown during all the struggles of this country in its evolution from a meagre settlement into a vast nation—that it has stood stern and brooding during the Indian wars, the Revolution, 1812, the Civil War. Nearly five centuries has this mighty tree stood in stately majesty in the solitude of the forest.

The photographs are reproduced through the courtesy of G. B. Joslin by whom they are copyrighted.

PRAISE FROM THE ANTIPODES

YARRAMAN, QUEENSLAND.

August 4, 1915.

MESSRS. HENRY DISSTON & SONS.

GENTLEMEN:

Your kind letter to hand about two weeks ago, I must thank you very much for the many kind favors you have shown me.

On Monday last, while our band sawyer was cutting a pine log, he happened to strike a dog that was embedded about two inches in the log. The saw, after striking the dog dived a good six inches into the log but never shifted off the wheels.

When the saw was taken off, it was found that the teeth were in perfect order, but the blade was very badly twisted.

I got to work right away and in a very short time has the twist taken out, and the saw is again ready for use, without the least sign of a crack. This same saw and another have been running constantly for this last eighteen months. They were originally ten-inch blades but are now nine, one has been pulled off the wheels three times. The other has been off once. Neither of them has the least sign of a crack. They are both DISSTON.

Our sawyer said they are two of the finest saws he has ever worked.

Thanking you again for your kindness,

Yours very truly,

(Signed) CHARLES GARDINER.

WHO'S WHO IN THE SAW WORLD



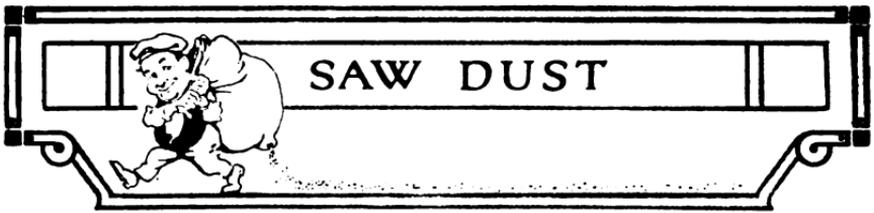
THE American Lead Pencil Co. have been loyal DISSTON customers for years. The photograph shows the filing room of their mill at Murfreesboro, Tenn., with Mr. John Wagner, Mr. Wilburn Wright and Mr. F. L. Collins.

Mr. Wagner is filer in this mill. He is a staunch advocate of DISSTON SAWS. He claims that experience has convinced him that they can't be excelled for service.

Mr. Wright is foreman of the slat mill and is also a DISSTON rooter.

Mr. Collins is mill superintendent. He has been in charge of the mill for a number of years and has the organization in such shape that it runs like clockwork. He advises that the reason for his being able to perfect this organization, get maximum results and have all his men satisfied is that they have DISSTON SAWS to work with.

This mill turns out cedar slats for lead pencils and uses a large number of small circular_saws, all of which are of DISSTON manufacture.



UNREASONABLE

Hotels vary as much in degrees of comfort as the haughty hotel clerks do in degrees of flippancy and efforts to please the guests. It was midnight in an Arizona town when a guest called up and in an angry voice said: "There are a couple of mice fighting up here." "What room have you?" inquired the sleepy clerk. He was told and then he inquired: "What are you paying for it?"

"Two dollars," was the reply.

"Well, what do you expect for \$2—a bull fight?"—*St. Louis Lumberman.*

Beguled by the attractive wording of an advertisement appearing in a trade paper, a trusting investor from the North bought a saw mill in the White River bottoms of Arkansas. When he went down to take over his newly purchased property and to assume its management the recent owner met him at the railroad station and bade him welcome.

As they climbed into the native's buggy to drive through the woods to the spot where the plant was located, the stranger said:

"I wish you'd give me a few hints right off about how to run this business profitably. You see I'm a little bit green at this line. I've been a lumber dealer all my life, but I never undertook to handle the raw material before."

"Well, mister," stated the Arkansan frankly, "I wish I could give you the advice you want, but I reckon I jest don't know myself. My father-in-law died and left me this here mill in his will. My two boys helped me to run her and there wasn't no other hands, and so I never had to pay out nothin' for wages. I stole all the timber I cut, and my stepbrother, who's the division freight agent for the railroad, used to slip all my lumber out for me so I never had to pay no freight charges—and last year I come out twenty-seven hundred dollars behind."—*Saturday Evening Post.*

WHAT A BLACK EYE IS

Tilts in court between lawyers and witnesses are not uncommon, and it is not always the disciples of Blackstone who come out on top.

In a party of lawyers in the country courthouse the other day this story was told, which illustrates the point:

A badgering lawyer was examining a doctor in an assault case. The solicitor represented the defense, and the doctor testified that he treated the prosecutor for a black eye.

"What do you mean by a 'black eye' queried the legal gentleman.

"I mean," said the doctor, without a smile, "that the prosecutor had received a severe contusion over the lower portion of the frontal bone, producing extensive echymosis around the eye, together with considerable infiltration of the subjacent aerolar tissue."

The medical witness was relieved from further cross-examination.—*New York Evening Sun.*

A SLEEPER

The intricacies of our language are well illustrated in the definition given of a sleeper:

A sleeper is one who sleeps. A sleeper is that in which the sleeper sleeps. A sleeper is that on which the sleeper runs while the sleeper sleeps. Therefore, while the sleeper sleeps in the sleeper under the sleeper the sleeper carries the sleeper over the sleeper under the sleeper until the sleeper which carries the sleeper jumps the sleeper and wakes the sleeper in the sleeper by striking the sleeper on the sleeper, and there is no longer any sleeping in the sleeper on the sleeper.

BIG JOE'S PHILOSOPHY

"Dose Disston saw she go ker-r-rip!
De boss he figger on a chip
An' han' me cigaroot an' say—
By Gar! Beeg Joe, I raise you' pay."
—*Contributed.*

THE DISSTON CRUCIBLE

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TABLE OF CONTENTS

	PAGE		PAGE
PORTION OF LOG POND AND MILL NO. 3, VIRGINIA AND RAINY LAKE Co. (<i>Frontispiece</i>)		BOLT ENCOUNTERED BY A DISSTON SPIRAL TOOTH	151
EDITORIAL CHAT	147	VIRGINIA AND RAINY LAKE Co. 151-153	
A UNIQUE CUT	148	DISSTON SAWS IN LABOR DAY PARADE	154
DISSTON CIRCULAR IN USE A QUARTER-CENTURY	148	THE SHULL LUMBER & SHINGLE Co.	155-157
MADE FROM A DISSTON BAND SAW	149	HALL OF FAME	158
RUTH-BELL LUMBER Co	150	WHO'S WHO	159
		SAW DUST	160



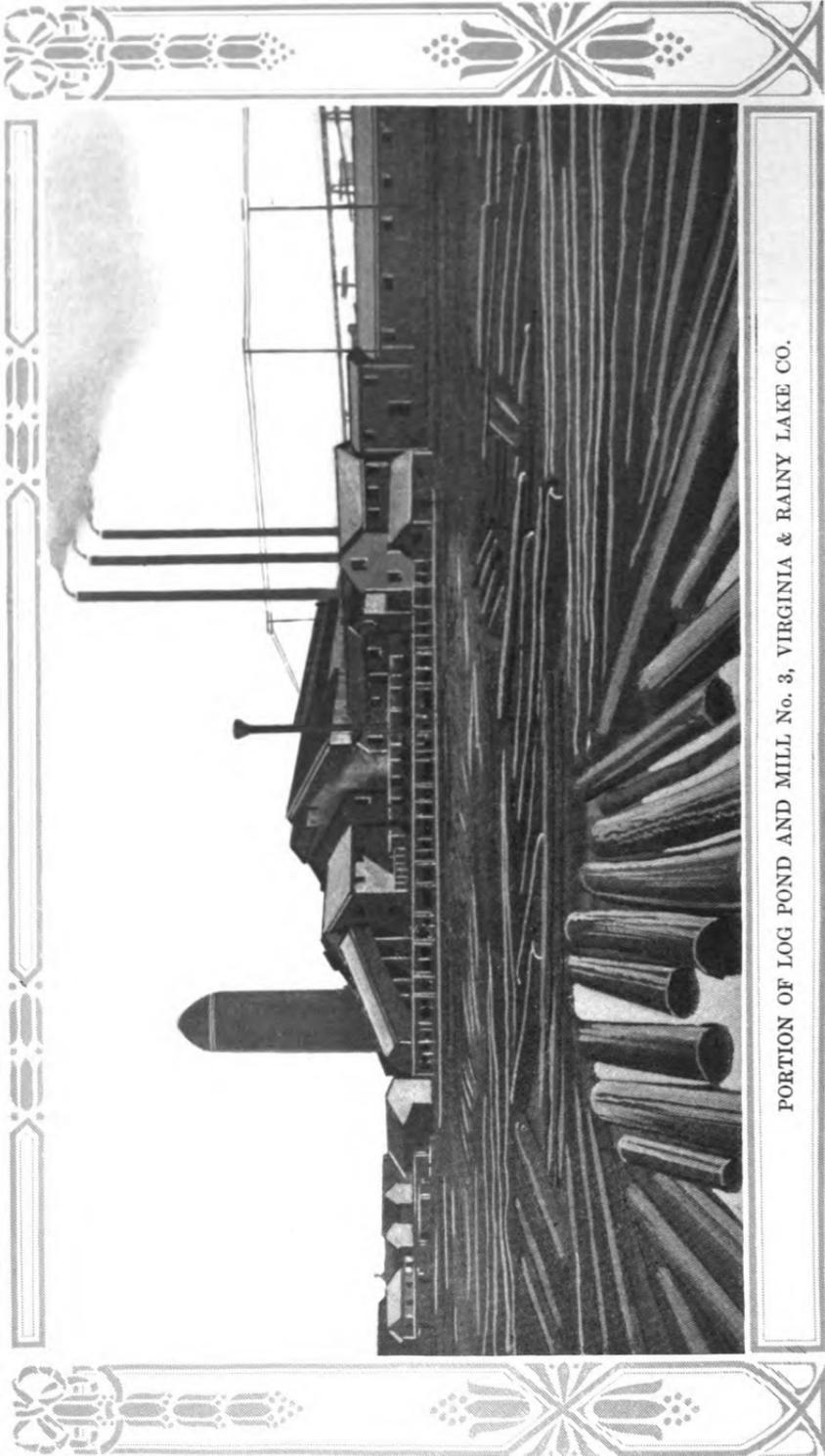
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Keystone Saw, Tool, Steel, and File Works
PHILADELPHIA

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PORTION OF LOG POND AND MILL No. 3, VIRGINIA & RAINY LAKE CO.

THE DISSTON CRUCIBLE

A MAGAZINE FOR THE MILLMAN

VOL. IV. NOVEMBER 15, 1915 NO. 10

EDITORIAL CHAT

REPUTATION

THE importance to the purchaser of a product of the producer's reputation is so great that frequently he loses sight of its vastly greater importance to the manufacturer himself.

To the buyer it is a reliable guide to quality, a means of eliminating uncertain results, an assurance of uniformity in the goods and in his own product, if he is himself a manufacturer, and a guarantee of value received—all vital factors in the profitable operation of his business and not for a moment to be underestimated.

But to the manufacturer it is his very business, itself. Not his plant—the insurance people will give him a new one if the one he has is destroyed; not his resources—his bank account will not be reduced by his loss of reputation, *unless he tries to continue his business*. But let confidence in his integrity, the quality of his product or service be destroyed and his business is gone. Maybe not immediately; he may be carried along for a while by the sheer momentum of the good reputation he previously enjoyed. But his business is on the wane and nothing can redeem it save a rehabilitation of that good reputation.

Reputations aren't built in a day. Neither are they a matter of good fortune. They are the result of persistent, scrupulous study and attention to the minutest details of a business with a constant view to improvement. Frequently it takes generations firmly to establish a reputation. Obviously, no manufacturer can afford to jeopardize, in the slightest degree, so invaluable an asset.

*Quality
Sells*

A UNIQUE CUT



THE gate hinge shown above was embedded in a walnut log which was being cut in the Hoosier Veneer Co., of Indianapolis, Ind. It was struck by a DISSTON band saw with the result above illustrated. It is of course not an uncommon thing to strike metal in making a cut but the peculiar part of this cut is its absolute symmetry. It could hardly have been cut more squarely along the center if it had been measured.

Incidentally the saw was running as well as ever with no more attention than dressing up the teeth. The Hoosier Veneer Co. have long been staunch DISSTON rooters. Their confidence wasn't impaired so very much by the above incident, however.

DISSTON CIRCULAR IN USE A QUARTER-CENTURY

Mr. George B. Reynolds of Wyoming, Del. who writes us the letter reprinted below, seems to feel that he didn't make a mistake twenty-five years ago when he bought this DISSTON Circular. Seems inclined to consider that by the time the saw has outlived its usefulness, it will have been a good purchase.

He says:

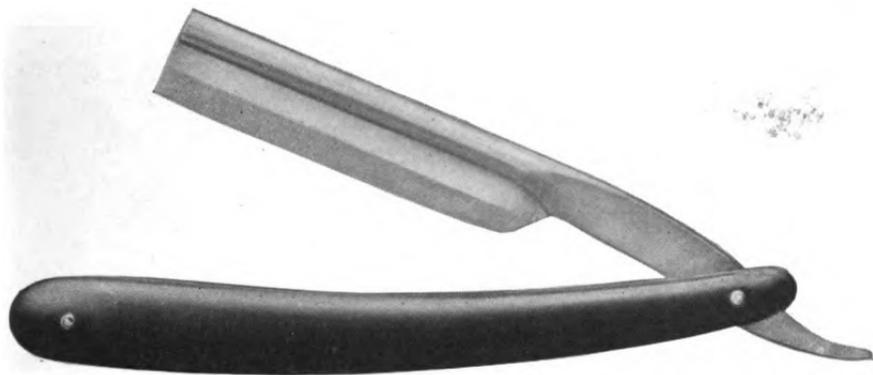
HENRY DISSTON & SONS, Inc., Philadelphia.
Gentlemen:

"Your representative, Mr. Chas. H. Cooper, called on me yesterday, and was much interested in the fact that I have in my mill at this time and in almost constant use, one of your circular saws that has been in use for twenty-five years, and is still in good condition. It has never been to any factory for repairing in any way, and needs nothing done to it now after all these years of service, in which it has cut hundreds of thousands of feet of lumber. I don't suppose there was ever a saw made except the renowned "DISSTON" that can show such a record."

Very truly yours,

(Signed) GEO. B. REYNOLDS, Wyoming, Del.

MADE FROM A DISSTON BAND SAW



MR. GEORGE FRITZ, filer for the Roddis Veneer & Lumber Co., Park Falls, Wis., holds the quality of steel in DISSTON SAWS in such high esteem that he made the razor blade shown above from a 19-gauge DISSTON band saw.

While it would seem impossible that the same piece of steel could be put to two so widely diversified operations as cutting trees and cutting whiskers, this razor takes and holds an edge almost as well as the best of them.

It is not, of course, to be inferred that good razor steel necessarily would make a good saw—it probably wouldn't. But when you can make a first-class razor out of an old saw, there's no dodging the fact that there's *quality* in that steel.

Mr. Fritz presented this piece of cutlery to Mr. Sam Southern who has been connected with HENRY DISSTON & SONS, Inc., for many years, and it is very highly prized by him.

ALARMED

A customer had ordered lunch in a restaurant at two o'clock. He waited half an hour without result.

"Waiter," he called, "what time do you close?"

"Half-past 6, sir,"

With deep concern in his voice the customer said:

"You are not going to lock me in, are you?"—*Exchange*.

CANNY

FRIEND—There's your friend, Miss MacGregor over there. Why don't you go over and speak to her?

SCOT—Wheest, mon; she has na paid her fare yet.

"Doesn't that girl over there look like Helen Brown?"

"I don't call that dress brown."

—*Yale Record*.

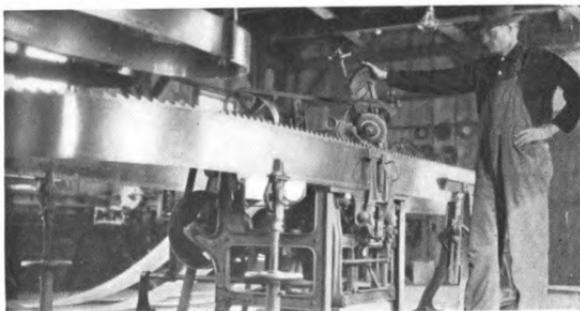
RUTH-BELL LUMBER CO.

Some views of the plant and logging operation of the Ruth-Bell Lumber Co. are shown herewith. This company is located at Albright, West Virginia, and **DISSTON SAWS** are used. We showed in last month's Crucible a steel grab hook which was sawed out in this mill without serious effect on the saw.



Mill and General Store
Ruth-Bell Co.

Mill and Yards
Ruth-Bell Co.

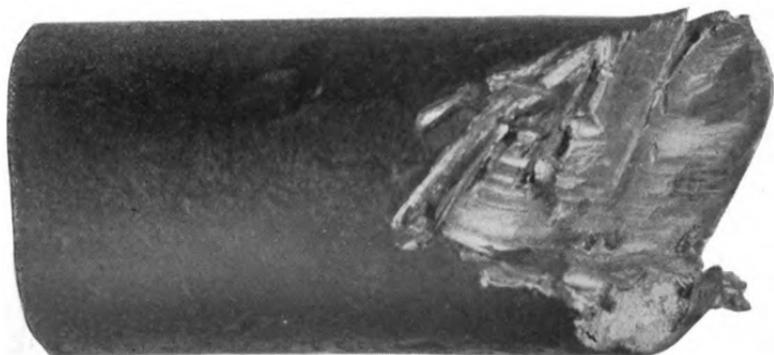


Filing Room
Ruth-Bell Co.

Log Loader
in Lumber Camp



BOLT ENCOUNTERED BY A DISSTON SPIRAL-TOOTH



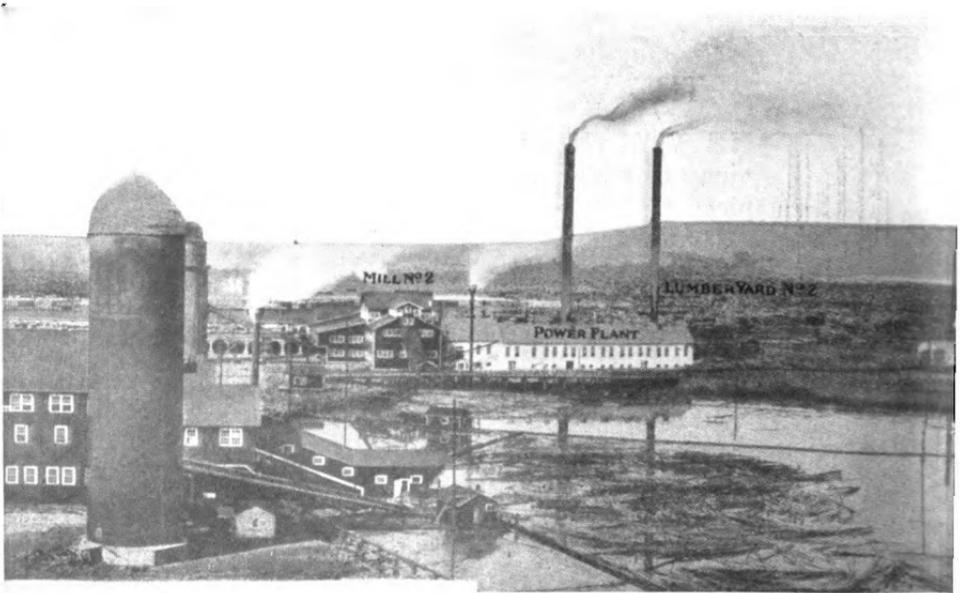
The bolt shown above was cut off by a Disston Spiral Tooth Cut-off Saw in the plant of the Copalis Lumber Co., at Carlisle, Washington. The bolt is one and a half inches in diameter and the cut was diagonal but neither the saw nor teeth were injured in any way. After merely resharpenering, the work was resumed. It takes pretty good steel to withstand such unavoidable abuse.

THE VIRGINIA & RAINY LAKE CO.

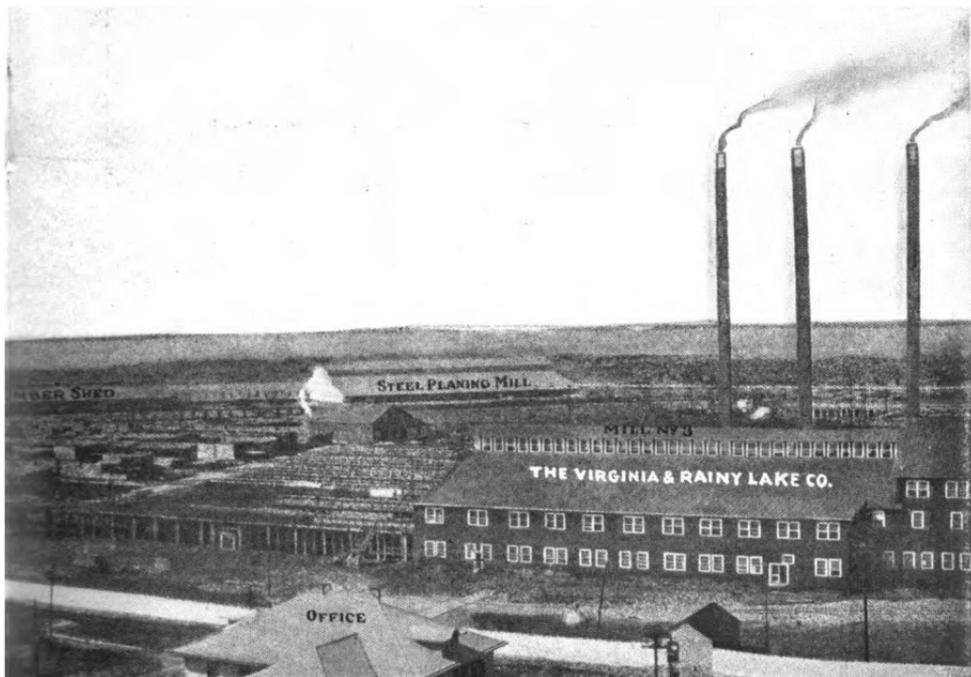
THE VIRGINIA AND RAINY LAKE LUMBER CO., views of which are shown in the center spread and frontispiece of this issue of the Crucible, is situated at Virginia, Minn. It is a white pine mill and its capacity of 1,000,000 feet per twenty-four hour day rank it as the largest white pine mill in existence.

The equipment and facilities of the plant are right up to the minute. The planing-mill and warehouse is an all steel structure with daily capacity of a half-million feet. In this building a loading track accommodates twenty-seven cars under cover. Electric motors handle the lumber from sorting chains to yard. Box boards are handled from mill to pile by locomotive-crane and are loaded into cars by electric conveyor.

As in almost every progressive mill where ample opportunity for comparison is offered, the quality of DISSTON SAWS is thoroughly appreciated.



PANORAMIC VIEW OF THE VIRGINIA & RAIL
"THE LARGEST, MOST MODERN AND MOST COMPI



**Y LAKE COMPANY PLANT, VIRGINIA, MINN.
ETE WHITE PINE LUMBER PLANT IN THE WORLD"**

DISSTON SAWS IN LABOR DAY PARADE



“DISSTON SAWS are so famed at Chatham that they used them in their Labor Day Parade to help swell the fund for the Red Cross,” is the comment our correspondent attached to the photograph at the top of the page.

This was a patriotic parade at Chatham, N. B. The wagon was appropriately decorated as it was the J. B. Snowball Lumber Company’s representation in the parade. Harry Groat, one of the company’s filers and a loyal Disston enthusiast is seen in the picture.

OUR STREET CAR DIALOG

“Halloa, Pat! I hear your dog is dead.”

“It is.”

“Was it a lap dog?”

“Yes, it would lap anything.”

“What did it die of?”

“It died of a Tuesday.”

“I mean, how did it die?”

“It died on its back.”

“I mean how did the dog meet its death?”

“It didn’t meet its death. Its death overtook it.”

“I want to know what was the complaint.”

“No complaint; every one for miles around appeared to be satisfied.”

“I wish to know how did it occur?”

“The dog was no cur; he was a thorobred animal.”

“Tell me what disease did the dog die of.”

“He went to fight a circular saw.”

“What was the result?”

“The dog only lasted one round.”

TEACHER—Now, children, name some of the lower animals, starting with Willie Jones—*Boston Transcript*.

THE SHULL LUMBER & SHINGLE CO

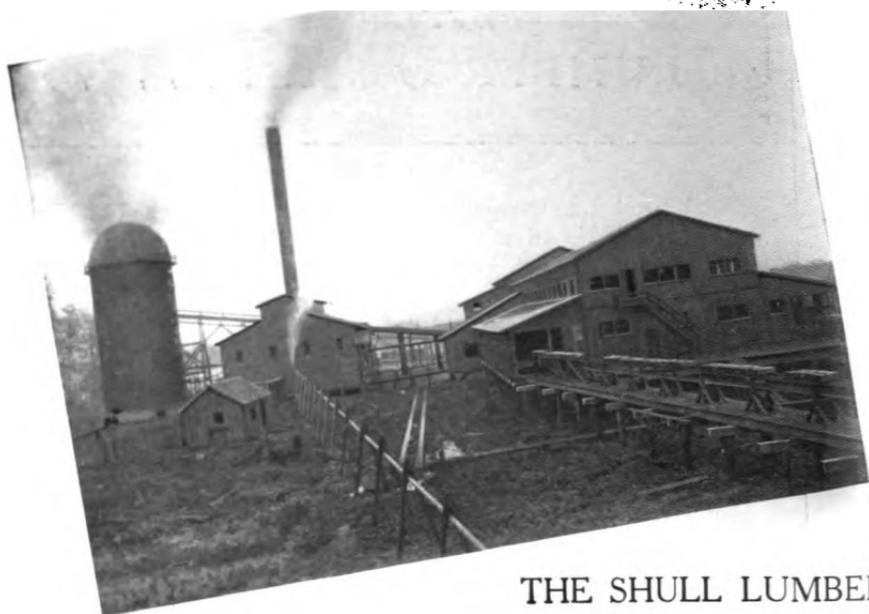
THE Shull Lumber and Shingle Company mill, situated on the north arm of the Fraser River ten miles from the city of Vancouver, is reputed to be the largest shingle mill in existence. It occupies a site of about 12 acres, and the entire mill is devoted exclusively to sawing cedar shingles. It is one of the most up-to-date shingle mills in operation and has a capacity of 720,000 shingles per ten hour day. Every labor-saving device known has been installed to facilitate the handling of logs and shingles. Three separate haulways extend down into the river; two of them are used for hauling up cedar logs and the other for shingle bolts, of which a considerable quantity is used. The log haulways lead to two 86" swing cut-off saws, which cut the logs into 16" and 18" lengths depending on size of shingle to be made. After being cut off, the discs of timber are split into pieces of suitable size on two power feed bolters. The timber is now designated as shingle blocks. All sap wood and other defects are removed by two knee bolters. These machines consist of a chisel bit, circular saw and a table on rollers; the latter having a projecting arm which is held between the knees of the operator; hence the name knee bolter. The shingle block is manipulated by hand and the table is moved up to the saw by a motion of the knees. When the blocks have been properly prepared by the knee bolter they are dumped into a conveyor, which takes them up to the machine, where they are placed on tables arranged along side of the shingle machines. All of the shingle machines are of the most modern type.

The saw equipment comprises:

- 60-40" Shingle saws—3 for each shingle machine, of which there are 20 in all.
- 40-38" Joiner or Clipper saws
- 4-86" Spiral Inserted Tooth Saws
- 2-56" Inserted Tooth Circular Cut-off saws; the latter for use on the steam feed automatic bolt cut-off rig
- 3-66" No.9 Inserted Tooth Splitter saws
- 3-54" No. 9 Inserted Tooth Circular saws

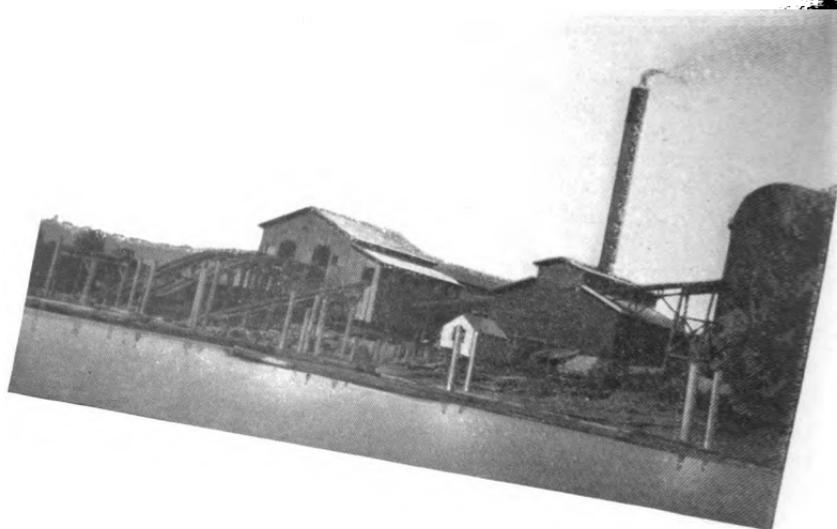
Every saw in the mill is a **DISSTON**. The plant is under the direct management of Mr. Harry A. Shull, Secretary and Treasurer of the company, who is also proprietor of the Shull Lumber and Shingle Company of Everitt, Washington.

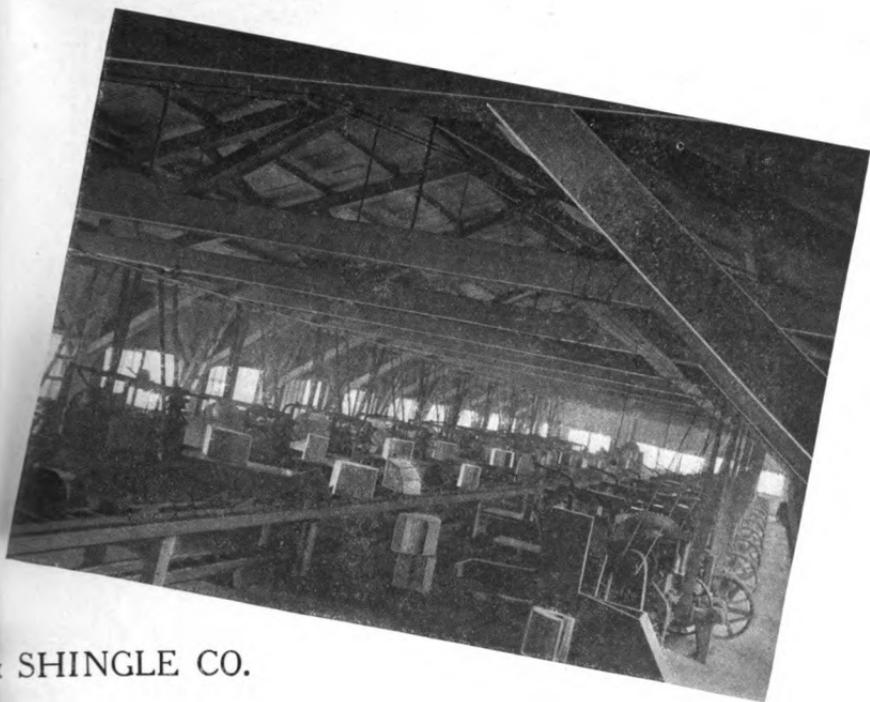
The Superintendent is Mr. O'Connell, who is known in the western states, as well as in British Columbia as one of the best posted shingle men. His experience extends over a period of 25 years, during which time he has specialized in many mills increasing the efficiency and output. Since coming to British Columbia he has established a reputation and made many records cut in mills. Mr. O'Connell swears by the **DISSTON** saw. Mr. Dan O'Donnell has charge of the filing room and is second to none in this line of work.



THE SHULL LUMBER

SHULL

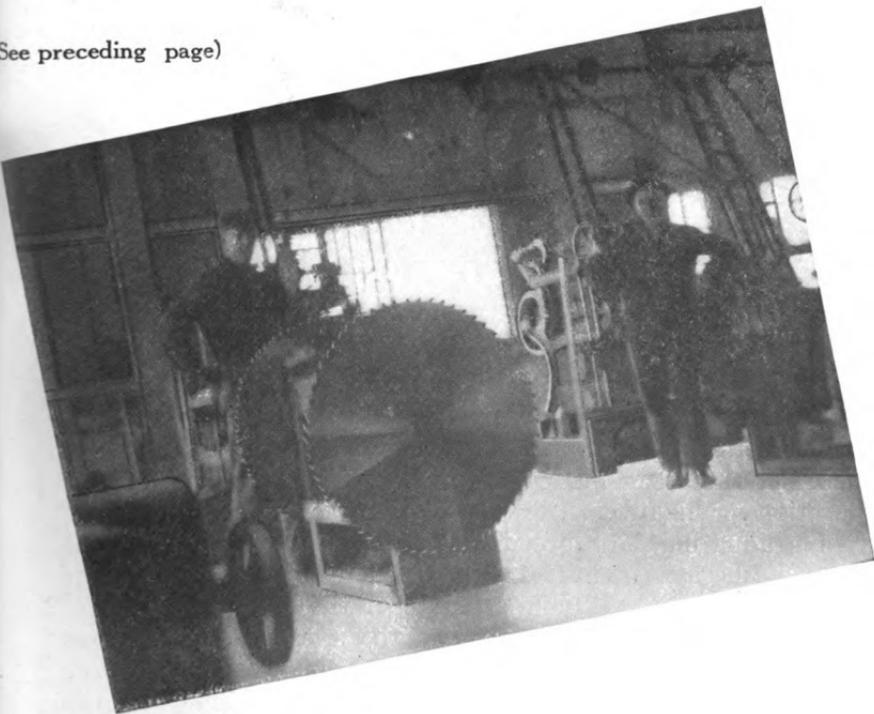


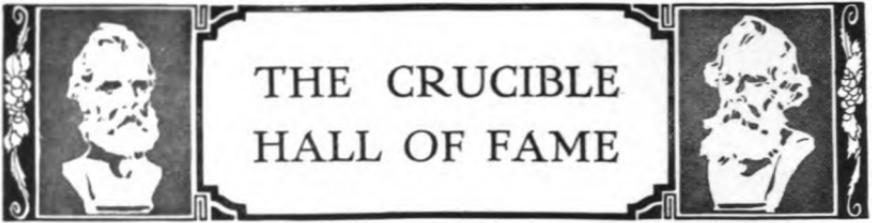


& SHINGLE CO.

B. C.

(See preceding page)





MR. HENRY DISSTON

HENRY DISSTON is the oldest grandson of HENRY DISSTON, the founder of HENRY DISSTON & SONS, INC. His father was Hamilton Disston, former president of the institution.

HENRY DISSTON was born December 1, 1873. He was educated at Penn Charter School and Massachusetts Institute of Technology, specializing at the latter institution in chemistry and metallurgy in preparation for his future work in the DISSTON plant.

Upon graduating, he proceeded to secure a thorough practical knowledge of the saw manufacturing business. For a number of years he worked in the steel mill, and later in the saw factory.

For the past few years Mr. DISSTON's extensive business interests have engrossed the major portion of his time. However he keeps in intimate touch with the administration of the concern's affairs and rarely is absent from the frequent meetings of Directors.

WHO'S WHO IN THE SAW WORLD



MR. W. P. SIMPSON

WENDELL PHILLIPS SIMPSON was elected President of the C. T. Patterson Co., New Orleans branch of HENRY DISSTON & SONS, upon the recent death of Mr. C. T. Patterson, Founder and President of the company.

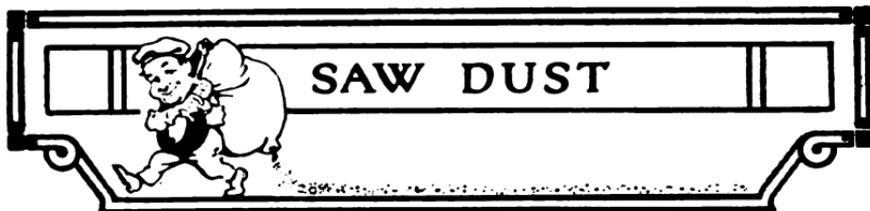
Mr. Simpson went to New Orleans twenty years ago as assistant manager of the New Orleans branch of the Chicago Belting Co. He was soon promoted to the managership. The development of the timber resources of the Gulf States led Mr. C. T. Patterson to organize the C. T. Patterson Co. in 1898 and Mr. Simpson was made Sec-

retary. The business enjoyed rapid and healthy development from the start.

Mr. Simpson has traveled extensively among the mills, and through his personal friendship with the owners has an intimate knowledge of their requirements.

A touching earnest of the high esteem in which Mr. Simpson was held by the former President of the company was a request in Mr. Patterson's will that his heirs entrust the business without limitations to Mr. Simpson for a period of three years.

There will be no change in the policy of the company.



HIGH STAKES

A well-known New Jersey doctor was playing golf with a well-known New Jersey minister.

"Well, what are we playing for?" asked the doctor.

"Why, it's rather out of my line to put up anything," replied the minister.

"Well," insisted the doctor, "we ought to play for something, so I'll put up a pill, and you put up a prayer."

—*Everybody's Magazine.*

TEACHER—Where is the Dead sea?

TOMMY—Dunno.

TEACHER—Don't know where the Dead sea is?

TOMMY—No, ma'am. I didn't even know any of them was sick, ma'am.—*Yonkers Statesman.*

USEFUL HORSE WANTED

A certain stock broker went to a horse dealer and tried to pick up a general utility nag. He explained that he wanted a nice, quiet, good looking animal for himself, which could be driven by his wife in a dog-cart, and would not on occasion object to being hitched up to a lawn mower.

The dealer listened with rapt attention and finally asked, in dulcet tones:

"Would you like him to wait at table at all, sir?"—*Chicago Daily "News."*

INFORMATION

And thus spoke Sewell Ford:

It was a dark night. A man was riding a bicycle with no lamp. He came to a crossroads, and did not know which way to turn. He felt in his pocket for a match. He found but one. Climbing to the top of the pole, he lit the match carefully and in the ensuing glimmer read:

"WET PAINT."

—*Publicity Magazine.*

PROOF

It was the rush hour in the cafeteria, one of those quick lunch places where you help yourself and grab a chair and use the arm of the chair as a table. A rushed feeder grabbed a slice of pie and copped out a chair. Then he remembered that he needed coffee and he dashed over to the service counter. When he returned with his coffee his chair was occupied by another hurryup diner.

"Excuse me," said the first man, "but that is my chair."

"How do you know it is your chair?" demanded the occupant in a surly tone.

"Because I can prove it," stated the first man.

"How can you prove it?" asked the occupant.

"By the seat of your pants," was the reply. "You are sitting on my pie."—*Exchange.*

A Yankee passenger in a train the other day was wearing his fellow-travelers with "tall" stories, and remarked, "We can start with a twelve-story hotel this month, and have it finished by next."

This was too much for the burly Yorkshireman who sat next to him.

"Man, that's nowt," he replied. I've seen 'em in Yorkshire when I've bin going to work just laying the foundation-stone, and when I've bin coming home at neet they've bin putting the folks out for back rent."

REAL DIFFERENCE

"Pop, what's a monologue?"

"A monologue is a conversation between husband and wife."

"I thought that was a dialogue?"

"No, a dialogue is where two persons are speaking."

KID—"How did you get the red marks on your nose, uncle?"

UNCLE—"Glasses, my boy!"

KID—"Glasses of what?"

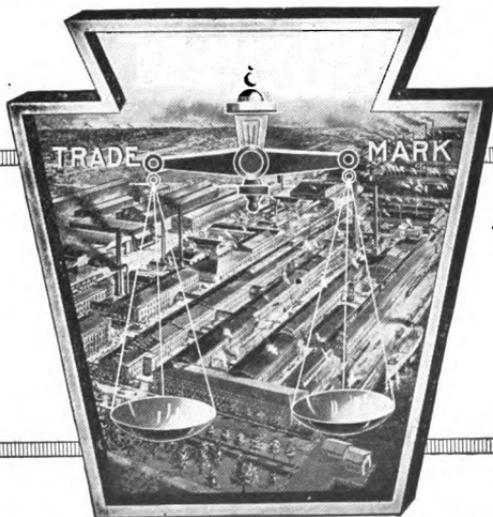
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TABLE OF CONTENTS

	PAGE		PAGE
FELLING A GIANT REDWOOD FOR THE ENTERTAINMENT OF THE PACIFIC LOGGING CONGRESS (<i>Frontispiece</i>)		SRIRAEHA, SIAM	171
EDITORIAL CHAT	163	THE FIRST-COST DELUSION	172
PRIMITIVE METHODS AND TOOLS IN CHINA	164-165	WE LIKE THIS PRETTY WELL	172
SEVENTH ANNUAL SESSION OF PACIFIC LOGGING CONGRESS	166-170	STEEL CHAIN DOG STRUCK BY A "DISSTON"	173
		HALL OF FAME	174
		WHO'S WHO IN THE SAW WORLD	175
		SAW DUST	176



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FELLING A GIANT REDWOOD FOR
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THE DISSTON CRUCIBLE

A MAGAZINE FOR THE MILLMAN

VOL. IV. DECEMBER 15, 1915 NO. 11

EDITORIAL CHAT

FIRST COST

WE all admit readily enough that the first cost of a piece of equipment is of secondary importance to the service it will render. We realize fully that inferior results will soon offset a saving in initial expense. We even allow ourselves the pleasure of a few academic remarks along these lines when opportunity favors. And then we (or at least many of us) go right out and buy goods that we know aren't the best, in order to save a few dollars' difference in the price.

And all this means what? That we have not really analyzed the *ultimate* cost of inferior equipment. We are prone to reason, "Well, it'll last pretty nearly as long, anyhow, and I can use these few dollars just as well as the manufacturers." As a matter of fact the greater economy probably lies in the shortest possible service life. Certainly this is so if the equipment doesn't stand up to its work. A fraction of a per cent. falling off in production capacity would pay for many machines dozens of times over in the course of a year. Frequent repairs mean out of service expense, pay roll expense for non-productive work (when the labor should show a profit), cost of new parts and rapid depreciation.

These are just a few items in the extravagance of cheap machinery that present themselves offhand. Quality of output purposely was not included. There are many more to be found by the man who will apply this line of thought to his individual conditions with a view to reduced operating cost and increased profit.

It is not to be inferred that the most expensive equipment is always the best. Superior manufacturing facilities of course reduce cost.

Service is the only test of quality. But with quality established, first-cost is a negligible factor.

*Quality
Sells*

PRIMITIVE METHODS AND TOOLS IN CHINA

By F. A. FOSTER

Instructor, Engineering College, Tangshan, North China
(From American Machinist)

CARRYING HEAVY WEIGHTS ON "TOTE" POLES BECAUSE THERE ARE NO WAGONS. THE PRIMITIVE TOOLS OF PREHISTORIC TIMES, DUPLICATES OF WHICH ARE STILL IN USE. A BOW-SAW MADE OF BAMBOO AND A PIECE OF ROUND WIRE, THE TEETH BEING CUT WITH AN AXE.

DURING a visit to the interior of China, I was particularly interested in watching the natives at their work and in the tools and methods employed. In some places I was fortunate enough to get photographs; in others, I made sketches for future reference. In most of the workshops visited, it was too dark to get good photographs. The shops are small, and the tools and methods are those used for centuries.

There are large shops connected with the railways and a few concerns under foreign management, such as the cement works, the various mining companies, a few cotton mills, etc., where the native workman has come in contact with foreign influence and has adopted modern ways and tools to some extent. These, however, are comparatively few.

If the new government carries out its liberal policies, there will be many changes for the better in engineering and manufacturing lines, and a good opening for tools and other manufacturing necessities.

Right here in Tangshan, where our Engineering College is located, there are large cement works, employing several thousand hands. The machinery, I believe, is mostly German. The Chinese Engineering & Mining Co. has large coal mines here and employs fully 3,000 hands. The shops of the Imperial Rys. of North China are also located here and employ 4,000 to 5,000 men.

Most of the machinery and tools are English and of a rather obsolete type. The railway shops build cars and locomotives, not only for their own use, but also for new lines under

construction. An attempt is being made to standardize the railway work of the whole country, by having it done, as much as practicable, in one place.

TRANSPORTATION

There are railway shops at Hankow equipped with Belgian tools. The Peking-Hankow Ry. was built by the Belgians and later bought by the defunct Imperial government. While at Hankow I saw a gang of coolies carrying a very large boiler plate. The plate weighed some 1,800 lbs., and was carried by 16 men. Like everything else portable here, they carried it with the aid of "toting poles" and ropes.

There are no horses nor drays used for transporting goods from cars or boats. Everything is either carried suspended from poles, or on the back. In some of the larger cities, where foreign influence is felt, large hand trucks, pushed by men, are occasionally used. Even for long-distance transportation, it is no uncommon thing to see a gang of men traveling across the country, "toting" merchandise on poles.

Here, in the North, long-distance transportation across country is done in carts. In the South, where the roads are fewer and worse, everything is transported by men. The most noticeable feature of these carts is the revolving axle, the hole in the center of the wheel being square. I have seen no four-wheeled carts, except in the Province of Honan. These, however, had no means for swiveling the front axle, and when necessary to turn a corner, it became a matter of pushing and sliding around.

THE DISSTON CRUCIBLE

THE BLACKSMITH SHOP

While on the Hankow trip, we inspected some 300 miles of railway. At a small city, I made the acquaintance of a native blacksmith. Although I could not talk with him, I was able to make myself somewhat understood by the engineer's universal language of sketches. I got sketches of some of his tools. These are shown in Figs. 1, 2 and 3.

His sledge hammer seemed like a foreign affair, but the others were characteristic of the country. The blacksmiths' hand hammers have a

The other tool shown on the bench is a scraper, or Chinese planer. The cutting tool is held in place by a wedge. Sometimes a pushing cut is taken; at others, a pulling cut. A fair chip can be taken with this tool, which is used to smooth all kinds of wrought iron, steel and brass work.

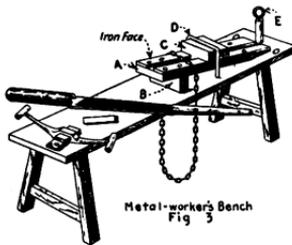
The range of the blacksmith's work included almost all the metal work required by the community. Among his stock I saw razors, pocket knives, various farming implements, building requisites, locks, cooking utensils, etc. The razors were nicely forged



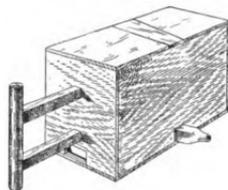
Blacksmith's Anvil
Fig 1



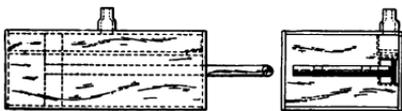
Blacksmith's Hammer
Fig 2



Metal-worker's Bench
Fig 3



Chinese Bellows
Fig 4



Bellows Fig. 5



Bellows Fig. 5



Japanese Folding Saw
Fig 6



A Marking Line, with Pot
and Marking Stick
Fig. 8



Blade for Large Saw
Fig 7

Chinese Blacksmiths' and other Tools

very narrow face. That which interested me most, however, was the work-bench and the tools for finishing metal work, shown in Fig. 3. The workman sat astride the bench, and the work was held in various ways by means of the chain, into which he pressed his foot. The inclined portion of the bench can be lowered by changing the position of the block B, so that work can be held on C, under the iron strap D.

There was a very large file, evidently made by the blacksmith, with a long handle on one end and a wooden extension on the other, to go into the ring E, which serves as a guide. This might be called a Chinese hand miller.

and then finished smooth and to an edge with the scraper shown.

The bellows, Figs. 4 and 5, or one manpower blowing engines, used everywhere over here for producing a blast of air, are quite interesting. They consist of a rectangular box, in which a piston is fitted and moved by a pair of piston rods extending through one end. In the lower part of the box, at one side, is a closed passage with valves in the side at each end, and with an outlet for connection to a pipe.

There are also valves at each end of the box. The piston is shaped to fit the box and has a packing of feathers glued on to make it air-tight.

(To be Concluded)



SEVENTH ANNUAL SESSION OF PACIFIC LOGGING CONGRESS

THE Seventh Annual Session of the Pacific Logging Congress opened in the Hoo Hoo Building on the Exposition Grounds at San Francisco, Thursday morning, October 21st, President J. J. Donovan presiding. Mr. Donovan's remarks regarding the navigation laws of our country, especially the so-called "Seaman's Act" were of keen interest to the members of the Congress.

Secretary George W. Cornwall followed President Donovan with his report, a survey of the progress made in logging during the years since the Logging Congress was first established. Mr. Cornwall's report was very comprehensive and interesting, and too much credit cannot be given him for all he has done toward the success of this and the preceding Congresses.

The appointment of committees and many interesting papers filled the remainder of the morning session. The members of the Congress were the guests of the San Francisco Lumberman at luncheon which was served in the Oregon Building. Thursday afternoon was given over to more speeches, reports and election of officers. Officers for the ensuing year are as follows:

President—W. W. Peed, Hammond Lumber Co., Eureka, California.

Vice-President—A. W. Laird, Potlatch Lumber Co., Potlatch, Idaho.

Secretary-Treasurer—G. M. Cornwall, Portland, Oregon.

Executive Committee—British Columbia, E. J. Palmer; California, F. F. Spencer; Idaho, H. M. Strathern; Montana, George Weisel; Oregon, D. E. Stewart; Washington, George A. Johnson.

The congress left San Francisco at 7.45 P. M., Thursday for Eureka and the redwoods of Mendocino and Humboldt Counties. Fort Seward was reached the next morning in time for breakfast. The next stop was made at the logging station of the Pacific Lumber Company on Larrabee Creek, which was reached on flat cars provided by the Company. After viewing actual logging, skidding



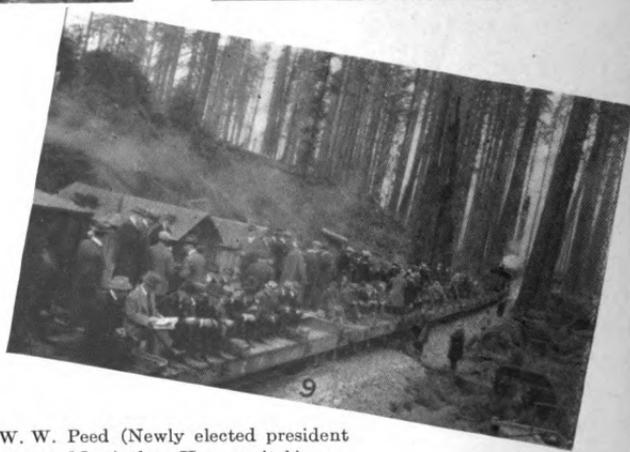
and loading, Scotia was reached in time for a most delicious luncheon, after which came a tour of the plant. This company has two mills which cut ordinarily 110,000,000 feet of lumber annually. Market conditions this year, however, are such that but little more than half that amount will be cut. This plant is one of the finest in the country, handling redwood lumber down to the finished product of every description. Mr. Donald McDonald, superintendent of operations at Scotia, made a most excellent host, and every one left feeling a deep appreciation of his many courtesies.

Eureka was reached at 5.00 P. M. A Welfare Dinner under the auspices of the Y. M. C. A. was presided over by Mr. A. W. Laird of the Potlatch Lumber Company of Potlatch, Idaho, was the feature of Friday evening's entertainment. After breakfast Saturday morning, the Congress left on a special train for the camps of the Hammond Lumber Company. The special carried the party to within three miles of the actual scene of the Company's logging and the remainder of the trip was made on flat cars to the very edge of the wonderful redwood forest, where huge logs nine and ten feet in diameter were being yarded and loaded. However, the most interesting event of the day was the felling of two giant redwood trees, one about nine feet in diameter, the other fourteen feet, and both about two hundred feet high. The larger tree was estimated to be four thousand years old.

A generous luncheon was served in the Company's cook-house, after which a very interesting and instructive lecture on first aid work was given by Dr. W. N. Lipscomb, field representative of the American Red Cross Society, which was greatly enjoyed by the Congress, as well as the men at the camp.

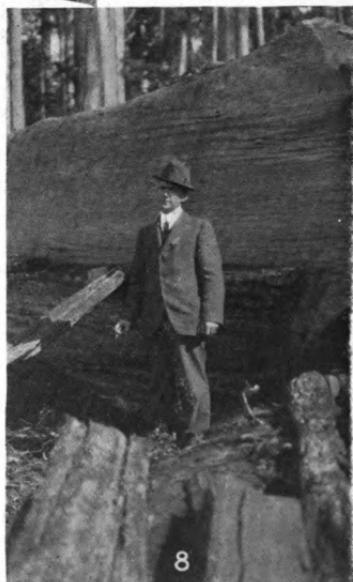
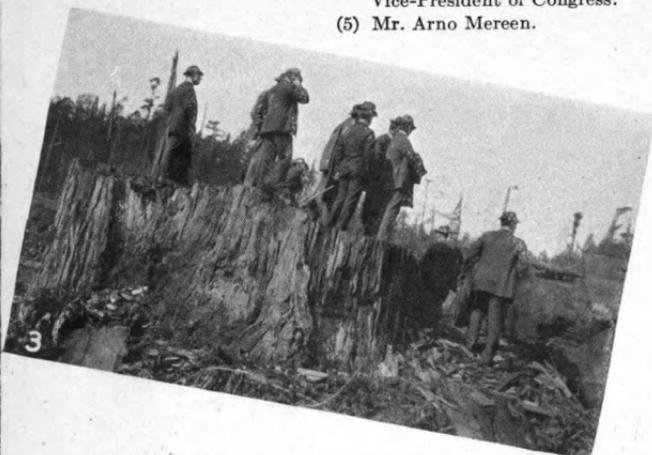
The return trip to Eureka was made by the way of Samoa, where the plant of the Hammond Lumber Company is located. The trip through this, as well as the Pacific Lumber Company's large mill the previous day, was enjoyed by everyone. To facilitate the handling of the crowd at the Hammond Lumber Company's plant, it was divided into groups, which were in charge of Mr. W. W. Peed, superintendent of railway and logging opera-

- (1) Mr. J. J. Donovan (Retiring president of the Congress).
- (2) Mr. John Weyerhaeuser (on left in foreground).
- (3) 18 foot redwood stump.



- (6) Left to right: Mr. W. W. Peed (Newly elected president Pacific Logging Congress, Mr. Arthur Heavenwitch).
- (7) Left to right: Capt. J. B. White, Mr. John Weyerhaeuser, (showing clear redwood plank).

- (4) Left to right: Mr. S. W. Batty, Mr. A. W. Laird,
Vice-President of Congress.
(5) Mr. Arno Mereen.



- (8) Mr. Geo. Peck.
(9) Members aboard logging train.
(10) Left to right: Mr. Geo. M. Cornwall, Mr. A. W. Laird
(11) Mr. W. R. McMillan (foreground).



tions: Mr. G. W. Fenwick, manager; and Mr. Will R. McMillan, general superintendent. Special credit is due these gentlemen for a perfect day's entertainment as well as the entire Eureka Entertainment Committee, which was as follows:

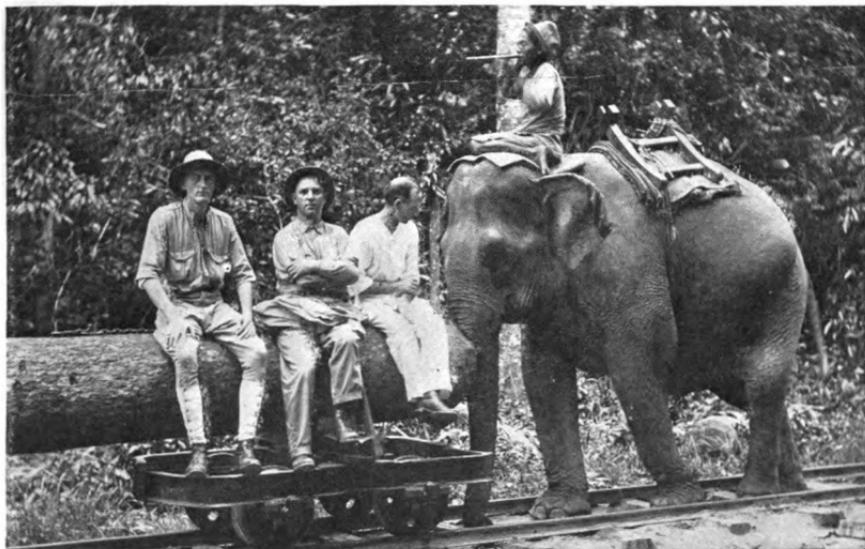
W. W. Peed, chairman, Hammond Lumber Co., Eureka.
H. W. Jackson, Northern Redwood Lumber Co., Korbel.
Donald McDonald, Pacific Lumber Co., Scotia.
G. W. Fenwick, Hammond Lumber Co., Eureka.
H. W. Cole, Little River Redwood Co., Bulwinkle.
Thomas Cotter, McKay & Company, Eureka.
T. W. Hine, Holmes-Eureka Lumber Co., Eureka.
J. M. Carson, Dorbeer & Carson, Eureka.

The party then ferried from Samoa across the bay to Eureka, arriving at 5.00 P. M. All day long Superintendent Donald McDonald of the Pacific Lumber Company was conspicuous by his absence, as were also the ladies of the party, which was accounted for by the fact that they were being entertained by the ladies of Eureka, ably assisted by Mr. McDonald.

The Seventh Annual Logging Congress Banquet was held that evening at 7.30 P. M. at Eagles Hall, Eureka, with President W. W. Peed presiding. The first to be called was Donald McDonald, who welcomed the Congress on behalf of the Eureka Committee. Short talks were made by J. J. Donovan of Bellingham, Washington, retiring president; A. W. Laird of Potlatch, Idaho; Captain J. B. White of Kansas City; H. D. Langille, of Portland, Oregon; Dr. J. F. Clark and James Dempsey, of Vancouver, B. C. A few remarks by Secretary George M. Cornwall closed the annual banquet. Grays Harbor, Washington, was chosen as the meeting place for the 1916 Congress.

The banquet over, the party returned to their special train and started on the return trip to San Francisco at 12.00 o'clock midnight. Santa Rosa was reached the next day at 11.15 A. M., where the Congress was very pleasantly entertained for two hours by the Santa Rosa Chamber of Commerce. San Francisco was reached at 4.30 P. M. All present voted the 1915 meeting to be the most profitable and enjoyable held by the Pacific Logging Congress.

THE DISSTON CRUCIBLE



SRIRAEHA, SIAM

MR. A. GARDNER,

HENRY DISSTON & SONS,
SEATTLE, WASHINGTON.

Sriraeha, Siam, September 23rd, 1915.

DEAR FRIEND: Well you can see by this that I have reached my goal.

I arrived here the best time of the year, for it is their cool season, but they say it only varies about five or six degrees in a year, but every little helps at that.

I had a very wonderful trip, the length of Japan by rail, and many stop-offs, and there is some very wonderful scenery in that country I can assure you.

I also enjoyed China and Malay, and Siam is not to be sneezed at for beauty, for the trip up the Bangkok River forty miles, is very wonderful, with the banks on both sides lined with palms of every kind and tons of pineapples, bananas, and cocoanuts. Every now and then, nestled among these palms could be seen beautiful temples and the Japs or Chinks have nothing on the Siamese for beauty in the temple line, though they are all very wonderful.

I am located about sixty miles from Bangkok on the Gulf of Siam, and it is much nicer here than in Bangkok.

As a matter of fact I like it here and will have no trouble in putting in my first year and there is a big chance of my staying two years.

The company so far has used me very nice, and tried their best to make things homelike for me, and have done it in good shape.

The mill will not saw a board until the last of February, if then, and that leaves me nothing to do but eat, sleep and draw my salary, and shoot vultures, parrots, cranes and lizards.

There is a lot of large game if one will go to the jungle for it, but the shooting is good enough and large enough from my back porch, for when I want any tiger hide or elephant tusks, I will buy them in the market, for I get a better chance to look the article over and more time and comfort selecting.

I ventured into the jungle long enough to have a photo taken of myself and Wildu and another fellow when they were logging with elephants. I am sending you one with this letter as it looks very odd to see these large animals pushing from eight to ten along on the narrow gauge roads.

If there is anything I can do down here for the HENRY DISSTON & SONS let me know and I will do my best for them. Best regards to you all and tell the boys I am in good health and happy in the land of the White Elephants.

Yours truly, (Signed) G. L. SWEM,
c/o BORNEO Co., Ltd., Bangkok, Siam.

THE FIRST-COST DELUSION

SUPPLEMENTING the editorial on a previous page on the fallacy of first-cost "economy," a consideration of the concrete figures involved will convince anybody that such "economy" is in reality a heavy burden.

The single item of payroll expense is amply sufficient for purposes of illustration.

Assume that the average, modern, single-band or circular mill has a payroll of \$100.00 per day, and a capacity of 50,000 feet.

If this capacity is reduced only ten per cent., ten per cent. of the payroll is also lost, because *if the equipment is first-class the efficiency of the saw governs the amount of labor the full crew does.*

A lower grade saw will not hold its line and manufacture good lumber under a high rate of feed.

Now, consider what the mill owner does when he buys his saws with a sole view to low initial expense.

\$1000 would be more than ample for his saws for an entire year. To save, say, ten per cent. of this amount he sacrifices \$10.00 per day on his payroll, or \$3000 a year—*three times as much as his saws cost him.*

WE LIKE THIS PRETTY WELL

We take pride in our product and the service it gives, and we're not at all ashamed to find considerable gratification in so sincere a communication as this of Mr. S. Stockton's.

HENRY DISSTON & SONS,
PHILADELPHIA, U. S. A.

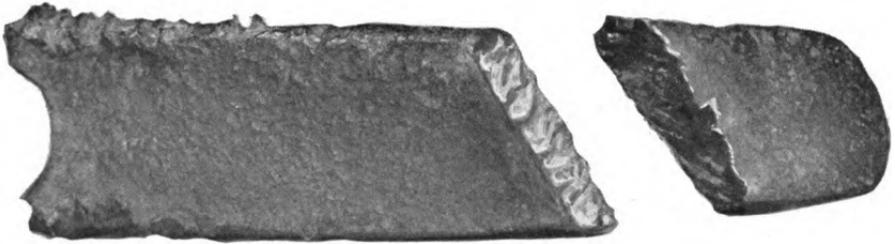
141 Bentley Drive,
Walsall, Staffordshire, England.

GENTLEMEN:

Allow me to congratulate you on the splendid quality of your saws. Our firm has been running your forty-foot, seven-inch, 17-gauge band mill saws for the last four or five years, and I can say I can find nothing on the market to compare with them, and if I have a voice in the matter, shall never try.

I have two down to 3½ inches and still working and giving satisfaction. The three new ones which I received about five

STEEL CHAIN DOG STRUCK BY A "DISSTON"



THE STEEL CHAIN DOG shown above was hit by a 12-inch DISSTON band saw in the mill of the Williamson Kuny Mill & Lumber Co. The damage to the dog is clearly seen. The damage to the saw consisted merely of knocking off the swage. Just another demonstration of the excellence of DISSTON QUALITY.

WE LIKE THIS PRETTY WELL

(Continued from page 172)

weeks ago I only use for cutting high class boards out of our English oak and Spanish mahogany.

Yours are the only saws that I have had anything to do with, which can be put straight on the mill and give high class results. You may not know it but it is common for us to run into a gate hook, or horse shoe in the center of oak or elm log through it. Nails, stones and spikes—am tired of counting those. And all the damage they do to your saws, take about one-eighth of the points, which means grinding and swaging up again; the way they hold their tension is really wonderful. Here is an instance: Last Thursday, November 19th, we were cutting one-half inch oak boards four feet, six inches wide, and one saw cut clean through four pieces of one-half inch square spikes, and did not alter the tension, so if that is not proof of quality, I should like some one to tell me what is.

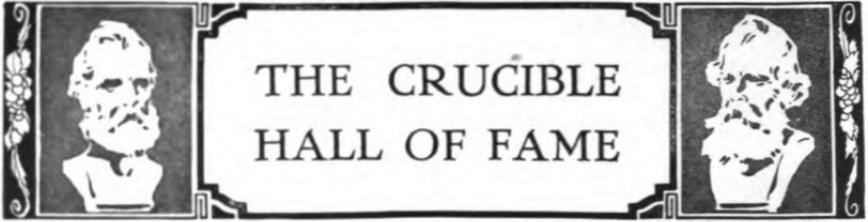
Your model swage and side dresser are splendid.

I am, gentlemen,

Yours faithfully,

(Signed) S. STOCKTON,

Filer for T. W. Hale, Timber Merchants,
Hatherton Street, Walsall, Staffordshire, England.

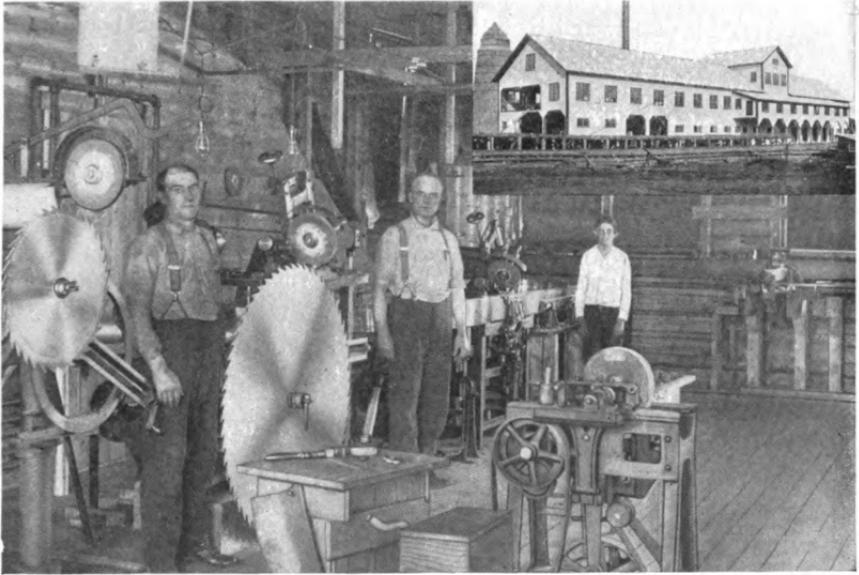


WILLIAM DUNLOP DISSTON

MR. WILLIAM DUNLOP DISSTON was born March 21, 1888. He received his education at Chestnut Hill Academy, entering that institution in 1898, and leaving in 1905. In 1906 he became William Disston's private secretary. In 1907 he attended Pierce's Business College. On January 6, 1908 he took up his work with HENRY DISSTON & SONS, INC. in the capacity of apprentice in the shops. He served four years in the various departments of the business, and in the early part of 1912 had reached the position of Assistant Superintendent. He was made Superintendent in 1913 and on April 14th of that year was elected Vice-President. Both positions were held during 1914. In 1915, in addition to the Vice-Presidency he was made Assistant to the President, which office and duties he now holds.

He is the son of William Disston (born June 24, 1859—died April 5, 1915), who became second President on the death of the first President, his brother, Hamilton Disston (April 30, 1896), and remained President until his death, April 5, 1915, with the exception of the year 1913, during which this office was held by Jacob Steelman Disston. William Dunlop Disston is the grandson of HENRY DISSTON, founder of the company.

WHO'S WHO IN THE SAW WORLD



PAUL A. SMALL

Where the service is most severe, the praise of DISSTON SAWS is loudest. Mr. Paul A. Small of the Portage Lake Mill Co., writes as follows:

HENRY DISSTON & SONS, INC.,
PHILADELPHIA, PA.

PORTAGE, MAINE.

GENTLEMEN:

Enclosed please find photo of mill and filing room of the Portage Lake Mill Co. Photo of mill shows what it looked like two weeks before starting October 1, 1913. Photo of filing room shows about one-fourth of it with band saw on sharpener and another one on bench. There are three band saws up in the racks which do not show, a fact I did not notice until it was too late. I stand in the center of the picture with Mr. John Boyle on my right and my thirteen year old son Gilman at my left.

Mr. Boyle saws laths by contract, and does his filing in this filing room. *Nothing but Disston saws will stand the hard duty required in this mill.* The mill is of the heavy circular type with band re-saw. The daily average output of long lumber is about 72,000 per day of frozen Spruce and some Pine and hard wood. The re-saw mill has 64-inch wheels (upright) and we run on same DISSTON band saws 29-feet, 6 inches long, 17-gauge, 7 inches wide, $1\frac{1}{4}$ inch tooth space, and we re-saw everything in the rough before it is edged. This plant is operated under the name of the Portage Lake Mill Co., but is owned entirely by The Blanchard Lumber Co., of Boston, Mass.

I do not know of a single sided mill anywhere in the East that can come up to the daily output of this mill. I have three DISSTON band re-saws that have been in steady use for over a year, and without a crack, and two of them with the original laps in them.

Yours truly,

(Signed) PAUL A. SMALL.



THE LAW OF AVERAGE

Two boys, one a Jew and the other Irish, both received a dollar bill for Christmas.

They started out the next day together and little Mike spent some of his dollar in the first store they came to.

Levi, however, simply asked to have his dollar changed into nickles and dimes.

Going to another store, Levi had a clerk change his money back into a dollar bill.

"What makes you keep changing your money, Levi?" asked Mike.

"Sooner or later some von is goin' to make a mistake," replied Levi, "un it ain't going to be one on me."

INDUCEMENT

"Fore," shouted the golfer, ready to play. But the woman on the corner paid no attention.

"Fore," he repeated, with not a bit more effect than the first time.

"Try her with three ninety-eight," suggested his partner in the game. "She may be one of those bargain-counter fiends."

ONE AT A TIME

A lanky youth entered the cross-roads general store to order some groceries. He was seventeen years old, and was passing through that stage of adolescence during which a boy seems all hands and feet, and his vocal organs, rapidly developing, are wont to undergo sudden and involuntary changes from high treble to low bass.

In an authoritative rumbling bass voice he demanded of the busy clerk, "Give me a can of corn" (then, his voice suddenly changing to a shrill falsetto, he continued) "and a sack of flour."

"Well, don't be in a hurry, I can't wait on both of you at once," snapped the clerk.—*Dixie Miller.*

HE NEVER DID IT BEFORE

A National salesman bought the only remaining sleeping car space. An elderly lady next him in line in front of the ticket window burst into tears.

"I must have a berth in that train," she exclaimed, "It's a matter of life or death!"

The salesman gallantly sold his reservation to her. Next morning his wife was astonished to receive the following telegram from her husband:

"Will not arrive until tomorrow. Gave berth to an old lady last night."

—*Sales Sense.*

TWO OUT

"Is the cashier in?"

"No, he's out."

"I'm a depositor."

"Then you're out, too."

MOBILIZATION

The two colored brothers were apparently about to come to blows.

"Niggah, don't mess wid me," warned one, "cause when yo' do yo' sure is flirtin' with a hearse."

"Don't pesticate wid me, niggah," replied the other, showing a great bony fist; "don't fo'ce me fo' to press dis upon yo', 'cause if yo' do Ah'll hit yo' so ha'd Ah'll separate yo' ideas from yo' habits; Ah'll just natcherally knock yo' from amazin' grace into a 'floatin' opportunity."

"If yo' mess wid me, niggah," replied the other, "Ah'll jest make one pass, an' dere'll be a man pattin' yo' in de face wid a spade tomorrow mornin'."—*Atlanta Constitution.*

"Heah, conductor!" yelled the passenger on the Southern train, "that was my station, suh! Why didn't yuh stop theah, suh?"

"We don't stop there no more," said the conductor. "The engineer's mad at the station agent."

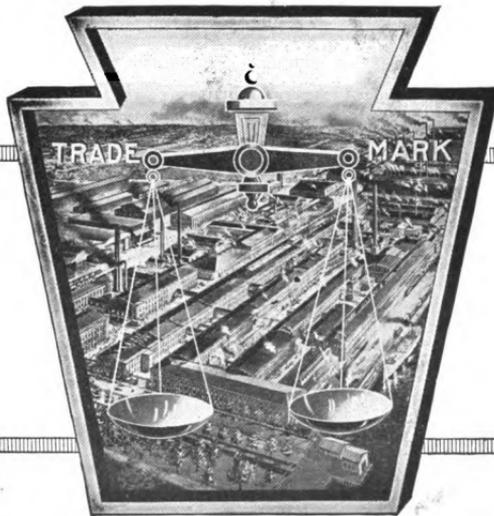
THE DISSTON CRUCIBLE

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TABLE OF CONTENTS

	PAGE		PAGE
ONE OF THE WATER POWER MILLS OF THE DAVISON LUM- BER Co. <i>(Frontispiece)</i>		FIFTY THOUSAND CORD PILE OF PULP WOOD	186
EDITORIAL CHAT	177	SOME INTERESTING LETTERS	187
THE DAVISON LUMBER Co	178-179	HALL OF FAME	188
PRIMITIVE METHODS AND TOOLS IN CHINA	180	A WORD TO USERS OF CHISEL TOOTH SAWS	189
THIS COMPANY IS READY	184-185	SAW DUST	190



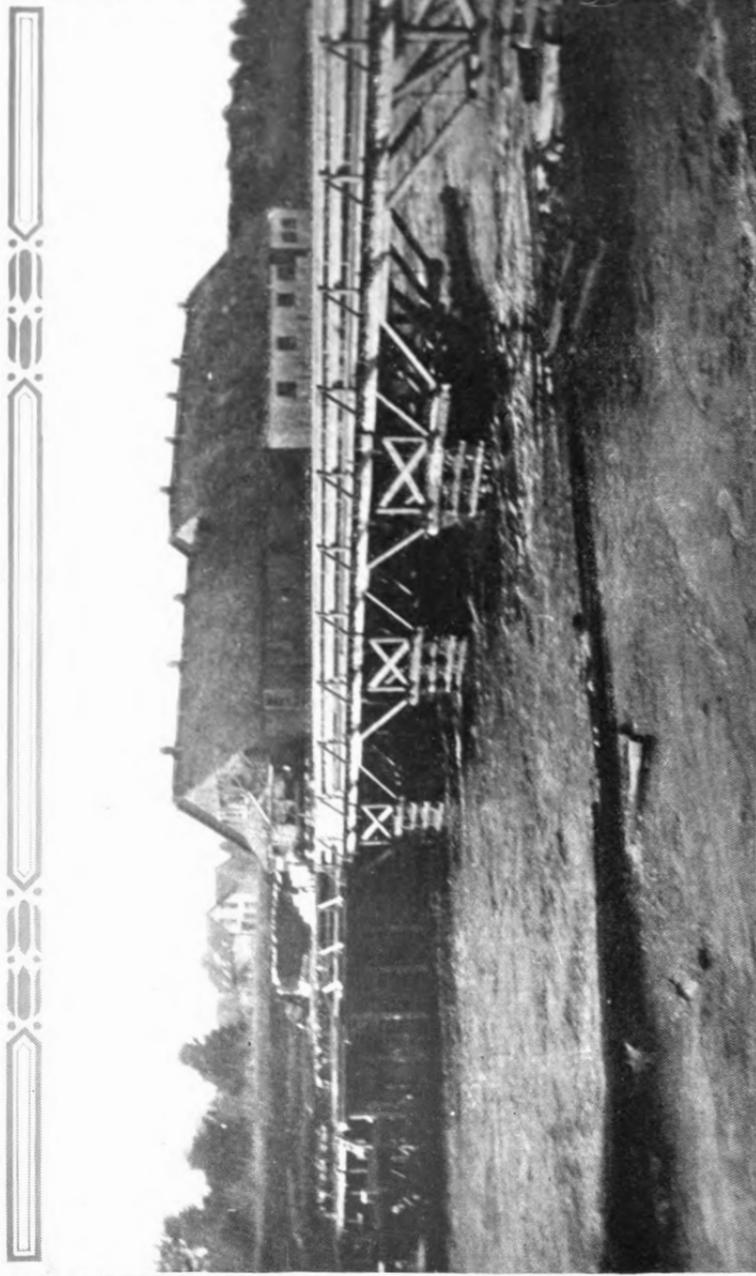
This Magazine is Published for the Advancement of the Interests of Millmen by

HENRY DISSTON & SONS
INCORPORATED

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PHILADELPHIA

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New Orleans, La. Memphis, Tenn. San Francisco, Cal. Sydney, Aus. Vancouver, B. C.
Canadian Works, Toronto, Canada.



ONE OF THE WATER POWER MILLS OF THE DAVISON LUMBER CO.



THE DISSTON CRUCIBLE

A MAGAZINE FOR THE MILLMAN

VOL. IV.

JANUARY 15, 1916

NO. 12

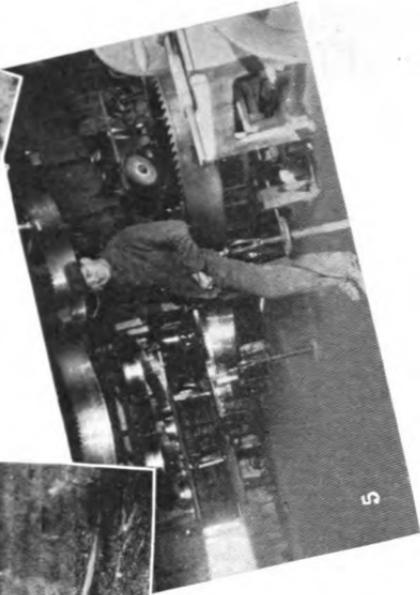
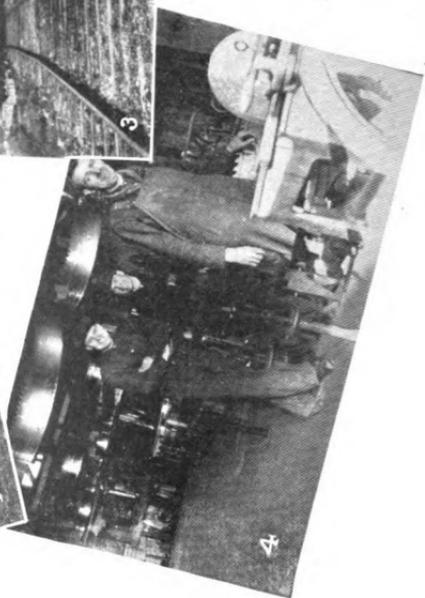
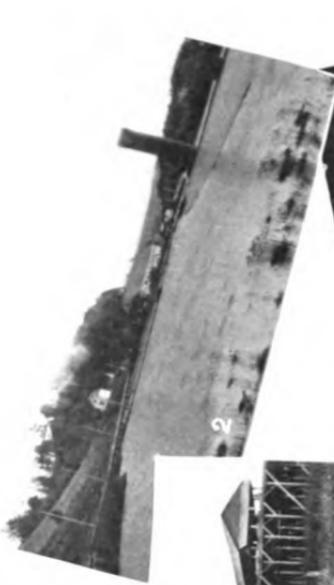
EDITORIAL CHAT

PROSPERITY

THERE seems to be little room for doubt that the momentum already attained by the wave of business activity in America is sufficient to insure its continuance *independently* of external conditions. The conflict abroad furnished the initial impulse, the recognition of which fact is neither sordid nor mercenary. Any effect that this appalling calamity to humanity might have on our commercial affairs was purely incidental and had not the slightest weight in the development of conditions abroad.

The stimulation of the injection of more than a billion dollars into this country was by no means confined to the producers of the finished product which the money bought. It reached in turn producers of all material and equipment entering into the final manufacture, from raw material up. And this condition has continued until *the wage-earner now has the money to buy the products which in normal times keep the manufacturer busy*. This, again, means more wages and still greater impetus to business. And so on. Thus the European War was the battery on which our industries picked up speed until they could switch to the magneto of internal demand.

1. SPRINGFIELD, N. S.
Davison Lumber Co.
2. BRIDGEWATER, N. S.
Davison Lumber Co.
Water Power Gang Mill.
3. SPRINGFIELD, N. S.
Davison Lumber Co.



4. SPRINGFIELD, N. S.
Davison Lumber Co.
Filing Room.
Fred. Armstrong,
Fred. Gilmore,
and a third helper.
5. SPRINGFIELD, N. S.
Davison Lumber Co.
Filing Room.
Mr. Fred. Armstrong,
Head Filer.

THE DAVISON LUMBER CO.

OPPPOSITE are shown views of the Davison Lumber Company's three mills. Two of these are of the old water-power type. Mill No. 1 has a live gang equipment with a small stock gang. The capacity of the mill is about thirty thousand feet per day. The company contemplates replacing the stock gang with a circular mill.

Mill No. 2 has a stock gang and circular mill and cuts about fifty-five thousand feet per day. Both mills have the usual edgers and lath mills.

The pictures marked No. 3 and No. 4 are both of the Springfield Mill. This is fitted out with modern saw mill machinery consisting of a single-cutting 14-inch band mill, band re-saw, twin band slabbers with fast feed, and one large stock gang carrying forty-one saws, edgers, box machinery, lath mill and planer. This is one of the largest and best fitted plants in Eastern Canada. When operating in first-class timber it cuts three hundred thousand feet per day.

The Springfield mill is located on a very fine lake and the company spared no expense in the arrangement of a hot water pond. This enables them to run in the winter when most of the Canadian mills are compelled by the cold weather to shut down.

The company's equipment includes logging engines and about fifty miles of standard gauge track leading into the forests of Nova Scotia Pine, Spruce, and Hemlock.

They have also a small circular mill for cutting hard wood.

The logging camps of the company are up-to-date and in normal times

accommodate about thirteen hundred men. Each camp is connected by telephone with the head office at Bridgewater, N. S., operating under a private system with the privilege of long distance connections at Hastings.

Mr. Hastings, the prime mover in the firm, lives during the summer months in Bridgewater, and in the winter in New York City, where the main office and selling force of the company are located.

The fine equipment of the filing rooms will be noticed in the illustrations.

Mr. Fred Armstrong, under whose able supervision the gangs and bands are filed, is seen in picture No. 5.

In picture No. 6 is seen Mr. Fred Gilmore in the center, who is assistant to Mr. Armstrong. He has served several years with the Fraser Lumber Co., at Plaster Rock, N. B.

Both Mr. Armstrong and Mr. Gilmore are staunch friends of DISSTON SAWS, which brand is used exclusively in all their mills.

_____ Louisiana.

HENRY DISSTON & SONS,
PHILADELPHIA, PA.

Gentlemen:

Several of my filer friends have had a discussion as to why one band saw in a lot of two or more would crack in operation, while the others did not.

Will some of the more experienced filers among the Crucible readers answer this question for us.

Very truly yours,

B. S. C.

PRIMITIVE METHODS AND TOOLS IN CHINA

By F. A. FOSTER

Instructor, Engineering College, Tangshan, North China
(From American Machinist)

Continued from December Issue

CARRYING HEAVY WEIGHTS ON "TOTE" POLES BECAUSE THERE ARE NO WAGONS. THE PRIMITIVE TOOLS OF PREHISTORIC TIMES, DUPLICATES OF WHICH ARE STILL IN USE. A BOW-SAW MADE OF BAMBOO AND A PIECE OF ROUND WIRE, THE TEETH BEING CUT WITH AN AXE.

THE CARPENTER AND HIS SAWS

MANY of the things done or used here seem so directly opposed to what we have at home that one is inclined to call this "topsy-turvy land." In a way, this applies to all of this part of the world, Japan included. While in Japan, I was interested to see their carpenters sitting on the ground with a heavy plank as a bench and pulling their planes and saws instead of pushing them, as with us.

In the case of the saws it seems a rational way, for the pulling motion produces a straighter cut and a thinner saw can be used. The saws were nearly all of the frame sort, much like our buck saws.

On the steamer at Yokohama I bought a small saw from a peddler. A sketch of this is shown in Fig. 6. It folds up like a knife. The blade is very thin and is used with the pull action. The frame would be better if it were a little stiffer but I have found it quite a useful little tool on several occasions. The steel seems to be excellent.

In Japan, as well as in China, the usual way of sawing logs and timbers into boards and planks, is by means of the large frame saw. As a usual thing, the boards needed in a building or other structure, are sawn from the log right on the premises where they are required.

The teeth of these large saws are pointed in one direction on one-half of the blade and in the opposite direction on the other half. See Fig. 7. The log is first marked off with black lines, both on the ends and along the top surface, for the guidance of the

sawyers, much as our carpenters use a chalk line. The piece is then placed in a position so that one man is above and another below it.

The object shown in Fig. 8 is the reel used for blackening string for marking long lines on lumber. The string is drawn through the horn which is filled with some spongy material containing a black liquid. The wooden marking stick is made with a chisel-shaped end and is used for marking lines along a straight-edge or square, instead of a pencil. It is dipped into the black sponge in the horn and will make a long mark before requiring to be dipped again. Used on the end of a scale, with the aid of the thumb, it serves as a scratch gage.

Squares are almost always made of wood and are home-made. They all have home-made scales of wood. Nominally, I believe, there are standards of measurement but their use is not strictly enforced and so there are variations in different parts of the country. Foreign-made rules and scales are much used wherever foreign influence is felt.

Another saw which interested me much, was given to me by a Chinese cabinet maker whom I had occasion to employ. Among other things, required some tills to go in some drawers: In making these, he made dovetail joints. In sawing the dovetail tails, he used a small frame saw cut in from the edge of the board to the bottom of the joints. In order to cut along the bottom of the recesses of the dovetails he used a bow saw which he made from a piece of bamboo and a piece of iron wire. See Fig. 9.

Having made the bow by fastening the wire securely at each end, so that

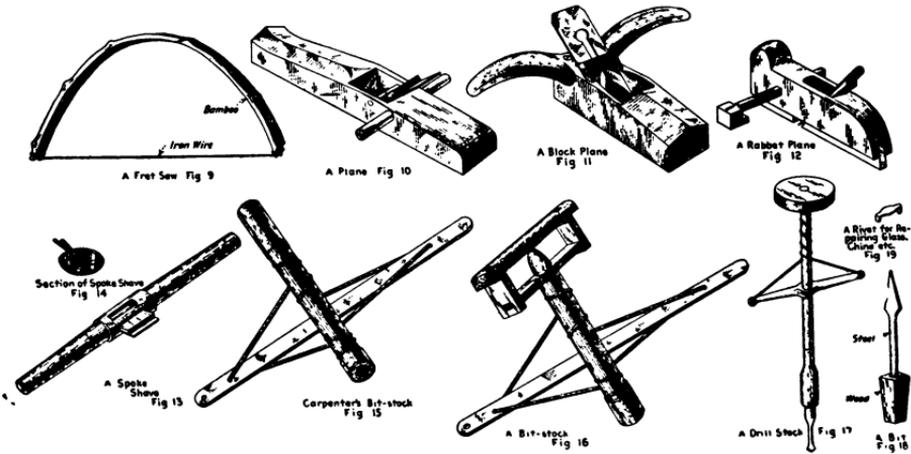
THE DISSTON CRUCIBLE

it was under considerable tension, he laid the wire across the corner of the bench and proceeded to cut fine teeth with his hatchet. The wire was of a diameter of the width of the saw kerf, already made, permitting the wire saw to be inserted to the bottom of the previous cuts, turned and the cuts along the bottoms of the dovetails made, parallel to the edge of the wood. His work was truly surprising, and when the sawing was done the work was ready to put together without any further trimming. The teeth on the wire were very small but cut nicely.

in Fig. 10. The wood used in these planes varies with the local supply. I have seen them made of oak, teak, greenheart, locust and even of rose-wood. I have had some made from oak and teak for our college workshop and they give fine results. Fig. 12 shows a small rabbet plane.

A home-made spoke shave from the cabinet maker's kit is shown in Fig. 13.

In the middle of the wooden handle is an iron ferrule, through which the throat is cut and a flat blade, held by a wedge, is inserted. Fig. 14 is a section through the middle.



Chinese Carpenter Tools

CHINESE PLANES

Chinese planes are pushed like ours but they have some different features worthy of note, viz: The handles and the position of the cutting edge. The blade is placed so that the cutting edge is in the middle of the length, instead of forward, as with ours. They are invariably home-made. They very seldom use a "cap-iron." The handles are of two styles, those having a straight, round bar passed through the body, and those with a handle saddles over the top. These are shown in Figs. 10 and 11.

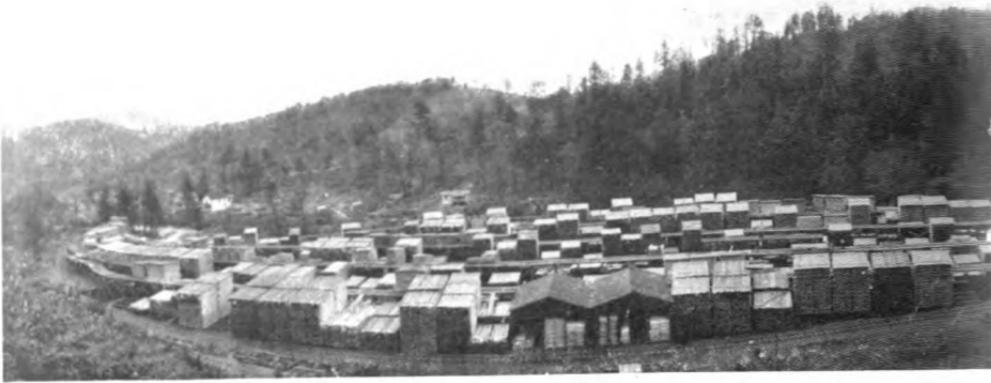
These handles give a good control over the plane. Instead of having a shoulder in the wood, for the wedge, they often have a round iron pin driven through the side of the body, as shown

DRILLS AND BORING TOOLS

There are two types of drilling apparatus in common use here, both of very ancient type as shown by old pictures and descriptions. One is the "bow drill," Figs. 15 and 16, and the other has the handle sliding freely up and down the spindle operated by straps attached to a spindle. See Fig. 17. This type has a heavy balance wheel at the top of the spindle. The bow drills shown in Figs. 15 and 16 are Chinese bit stocks. The spindle revolves freely in the handle at the top.

The common type of bit used here is shown in Fig. 18. The point is very long and sharp. The square end is of wood, into which the metal is driven.

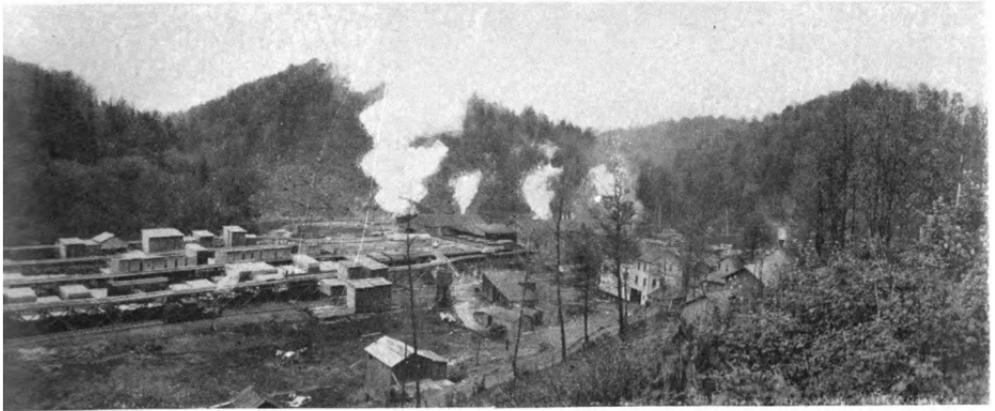
Continued on page 190



TWO REPRESENTATIVE M

(Both large users





RAINE-ANDREWS LUMBER CO., EVENWOOD, W. VA.

MILLS OF WEST VIRGINIA

(of DISSTON SAWS)



THE WILSON LUMBER CO., MILL CREEK, W. VA.

THIS COMPANY

The Trinity County Lumber Company of Groveton, Texas, is not in the least agitated over the question of "preparedness"—at least so far as preparedness for fire is concerned. The reason is shown in the accompanying illustrations.

This fire department is a source of great pride (and no little ease of mind) to Mr. A. E. Ball, manager of the company. The department is composed of three companies (one chemical) located respectively at the saw-mill, the planer and the shipping department. One of these companies is a negro company of which Mr. Ball is particularly proud.

When the DISSTON representative was visiting the plant (DISSTON SAWS are used here exclusively), a demonstration of the high



IS READY

efficiency of the department was made for his benefit. Mr. Ball turned in an alarm from one of the remotest boxes. In one minute and forty seconds they had a stream flowing. The alarm was entirely unexpected and the men were at their various jobs when it was turned in.

Efficient fire-fighting organizations like this would prevent many disastrous conflagrations. And they are especially necessary around lumber mills and yards. Many a plant has been wiped out by a blaze which could easily have been "nipped in the bud" had precautionary measures been taken such as those adopted by the Trinity County Lumber Co.

Insurance people pay hard cash for such protection—in the form of lower rates. Why not drop them a line?



THE DISSTON CRUCIBLE



FIFTY THOUSAND CORD PILE OF PULP WOOD
Ontario and International Paper Company, International Falls, Minn.



TRY SQUARE CUT BY A DISSTON SAW

A peculiarity of this accident is that the cut, although entirely accidental, is exactly parallel with the edge of the square. The cut is nearly five inches long and gives every appearance of having been cut with mathematical precision. The saw was unharmed.

THE DISSTON CRUCIBLE

SOME INTERESTING LETTERS

HENRY DISSTON & SONS, INC.,
Philadelphia, Pa.

Townsville, Queensland, Australia,
May 8, 1914.

Dear Sirs:-

Your favor to hand and in reply beg to advise that we got the Hand Hack Saw and Special Files a few days after your order.

We have not tested the saw yet beyond cutting small pipes, brass and iron, also head pipe, and so far it saves a lot of time and does its work splendidly. We can do the work better in quarter the time, and 100% less language than with the ordinary frame hack saws. We are well pleased with it and so far have had no occasion to use the files on it.

Yours faithfully,

(Signed) MACCONNELL & MAYES.

HENRY DISSTON & SONS,
80 Sussex Street, Sydney.

Nowra, N. S. W.
28/9/15.

Dear Sir,

Re - *Sawing Contest* It came off on Saturday last, 25th, myself and sawing partner cutting the one foot diameter block in 10-1/5 sec. The wood we were sawing in was white gum, a trifle softer than blue gum. They use the latter wood in the Sydney contests (which if we have luck we are going to at the coming show.) The Oriole saw was "perfection" itself, cutting almost an inch a stroke. The closest time to us was 14 sec. leaving a difference of nearly 4 sec. cut by the "Diamond Pointed Vim Champion" I bought off you some time ago, used by some friends of mine. I will conclude with kind regards.

I am, Sir, Yours faithfully,

(Sgd.) OSWALD A. H. PIERCY,

Timber Getter, Nowra.

HENRY DISSTON & SONS, INC.,
Philadelphia, Pa.

December 13, 1915.

Gentlemen:-

Your DISSTON Crucible received today, and I was surprised to see my own picture in it at the Ruth-Bell Lumber Co. at Albright, W. Va., and I want to say the same saw which you see in the picture and the grinder struck a large stone in a hollow log and split the stone open in the middle. The best that I can remember the stone was seven inches by eight inches, and I only had to swedge the saw and grind it, then it was ready for its regular work.

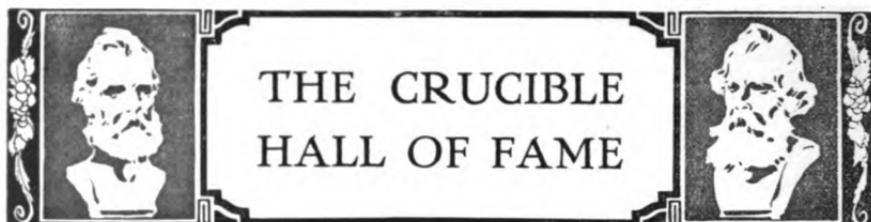
I want to say the last pair of saws we got are going fine. It's a pleasure to see them cut this North Carolina pine. I think they are the best pair of saws I have handled in my twelve years filing.

Thanking you in advance, I remain,

Yours respectfully,

(Signed) G. L. LITCHFIELD,

Elizabeth City, N. C.



HAMILTON DISSTON

MR. HAMILTON DISSTON, Treasurer of HENRY DISSTON & SONS, INC., was born May 16, 1886. He received his preliminary education at the Chestnut Hill Academy and Phillips Exeter Academy. He then entered the University of Pennsylvania, graduating in 1908. On September 29th of that year he took up his work with the firm in the Treasury Department. In 1910 he entered the steel works of the company and in 1912 was placed in charge of this branch of the business. He was elected to his present office this year.

Hamilton Disston is a son of Jacob Steelman Disston, former President of the firm, and is a grandson of Henry Disston, the founder.

A WORD TO USERS OF CHISEL TOOTH SAWS REGARDING FROZEN TIMBER

THE successful cutting of frozen timber is not a serious problem to millmen of the more northerly sections where the timber is frozen from three to six months of each year, because, as a general rule, these millmen and sawyers know what preparations to make for this trying time.

This article is designed to help those who have only a few weeks of this kind of sawing.

A Chisel Tooth Saw, up to the time the frost comes, may work in an entirely satisfactory manner then suddenly refuse to do anything. The sawyer, in trying to make it go by changing the adjustment of the guides and the "line" of the saw is liable to strain the blade, force it over the collars, and put it in such shape that a trip to the factory is necessary. By following the few simple suggestions contained in this article, this expense, delay and annoyance may be avoided.

First: To cut frozen timber successfully the shanks or holders, should be new or practically so, and should be of the swaged or flanged pattern. Therefore, before starting to cut frozen timber, see that the holders are in good shape, *sharp on the inner edges*, otherwise put in a new set of swaged holders.

In cutting frozen timber a fine saw dust is formed, which, not being properly chambered by worn holders passes down the side of the saw, freezes to the log, forcing the saw out of the cut, thus preventing good work. New swaged holders keep the cut clear of this fine saw dust, permit the saw to run cool and cut a true line. The insertion of a new set of holders also slightly stiffens the tension of the saw.

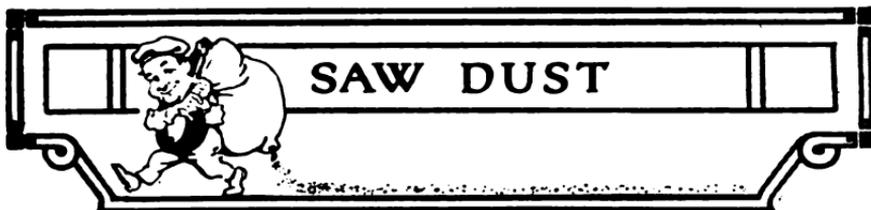
Second: Use narrower bits than usual. Where a 9/32-inch point is used in the regular work, bits 1/4-inch wide on the cutting edge will often suffice and do better work.

Sometimes it is possible to use bits which have been discarded by filing them carefully so they will have good sharp corners. The fact that these worn bits are shorter than when new, will be found advantageous.

It is absolutely necessary to keep the corners of the bits sharp and square on the cutting edge to sever the fibres of the wood thoroughly, thus avoiding the rough, stringy surface often occurring in some kinds of timber when the fibres are torn.

Where the corners of the bit are in such condition that they rub back of the extreme cutting edge, good work can not be expected. Therefore *keep the corners sharp and widest and the shanks fully swaged* and do this before attempting to saw when the timber is frozen.

When inserting new shanks and new bits *always oil the sockets*.



COULD FILL THE BILL

He had told her the age-old story, and, torn with emotion, waited for a few short words that would decide his fate.

"George," she said, "before I give you my answer you must tell me something. Do you drink anything?"

A smile of relief lighted his handsome countenance. Was that all she wanted to know? Proudly, triumphantly he clasped her in his arms and whispered in her shell-like ear.

"Anything," he said.—*The Medicine Man.*

50-50

Sammy was not prone to over-exertion in the class room; therefore his mother was both surprised and delighted when he came home one noon with the announcement, "I got 100 this morning."

"That's lovely, Sammy!" exclaimed his proud mother, and she kissed him tenderly. "What was it in?"

"Fifty in reading and fifty in 'rithmetic.'—*The Multitude.*

POSITIVE

Man in Swimming—Are you quite sure there are no crocodiles about here?

Negro on the Shore—Yes, sah; de sharks done scare 'em all away, sah.

Two men were chased by a bull, one taking refuge in a tree, the other in a large hole. Immediately the man in the hole began to rush in and out.

"You blame chump!" yelled the man in the tree, "why don't you stay in that hole? You're makin' the bull mad!"

"Chump yourself," gasped the other, with a quick leap, "There's a bear in this hole!"—"Bing."

"Pa, what is an echo?"

"An echo, my son, is the only thing that can cheat a woman out of the last word."—*Boston Transcript.*

"My hair is coming out," said a man to his doctor. "Please give me something to keep it in." "Well," said the doctor, "here's an old pill box. Will that do?"—*Philadelphia Bulletin.*

PRIMITIVE METHODS AND TOOLS IN CHINA

Concluded from page 181

I have seen small bits made from a piece of scrap wire or an old wire nail, as occasion required.

For small holes in hard substances the Chinese use a drill made by inserting a bit of diamond in the end of a piece of steel wire. With such a drill they do wonderful things in the way of repairing glass and chinaware.

RIVETING CROCKERY

A peculiar feature of life here is that of the domestic service. All the housework, cooking, etc., for foreigners, is done by men, each having his specialty. They all have one characteristic, in common, viz: The ability to break anything breakable. No matter how strong a thing is, they can break it. This accomplishment gives employment to a large number

of traveling "tinker men" who travel about with quite a complete little equipment for repairs of all kinds.

Crockery, glassware and china dishes are mended time and time again even though broken into a dozen pieces, by means of a peculiar rivet. A hole is drilled part way through the material near a broken edge with one of these diamond-pointed drills, and a rivet, like that shown in Fig. 19, is selected from a stock of various sizes. One leg of the rivet is inserted in the hole and the point on the adjoining piece located. The hole is then drilled so that when the rivet is pressed into place, there will be a slight compression on the joint. If the rivet will not reach the second hole properly, it is lengthened a trifle by a light tap on the flat center portion.

Disston
crucible,
1914-16

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SD1

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D4

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