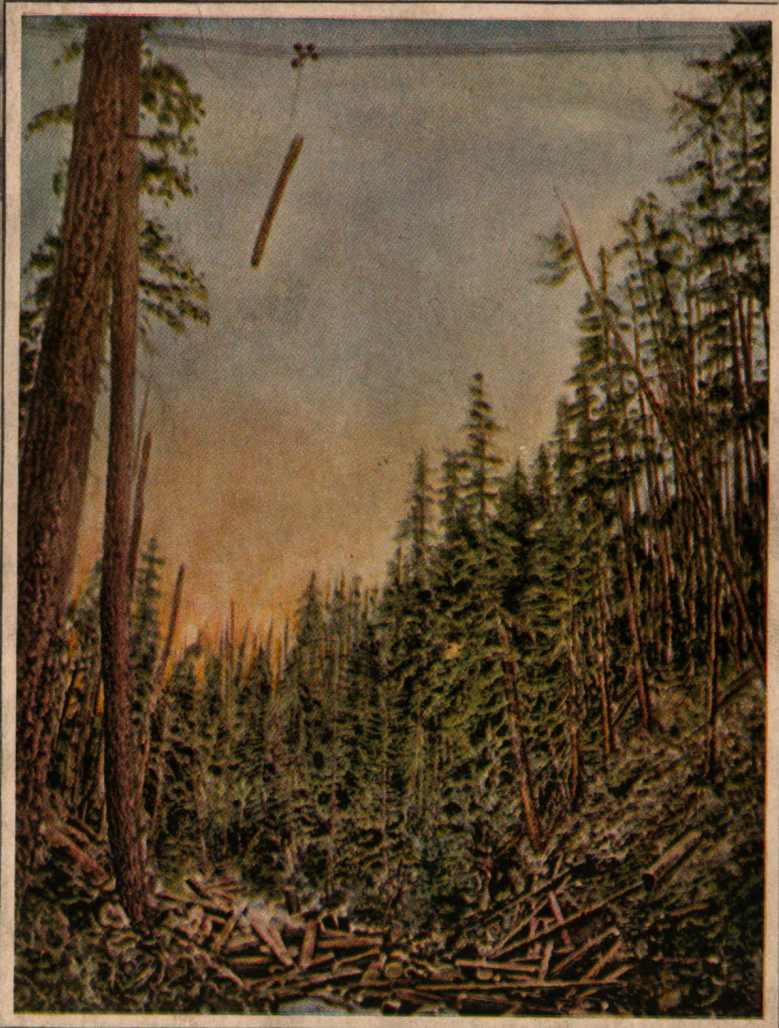
THE DISSTON CRUCIBLE



FEBRUARY 1921

THE DISSTON CRUCIBLE

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Pennsylvania Tree Nominated for Hall of Fame

This is not the largest tree in Pennsylvania, but it is the one which the State Forest Department has nominated for the Hall of Fame for Trees, which has been inaugurated by the American Forestry Association. The tree in question, a sycamore or buttonball, is regarded as a memorial to John Goodway, whose name would indicate some of his characteristics. Goodway was one of the last friendly Indians in the section near Harrisburg. His grave is about 100 yards north of the tree. The tree stands on the John Early farm, one mile northwest of Linglestown, in Dauphin County, which is now occupied by Frank Wolfenberger. It has a spread of 135 feet, is 125 feet high, with the trunk about 25 feet in circumference, and about 7 feet in diameter. The picture was made by Prof. J. S. Illick, dendrologist.

THE
DISSTON
CRUCIBLE
A MAGAZINE FOR THE MILLMAN

VOL. X | FEBRUARY, 1921 | No. 1

"The Years Glide By"

With this issue, the Disston Crucible enters its tenth year. Every month since February 1912, this little magazine has carried some message from the House of Disston to those interested in the lumber industry.

Looking back over the old issues, we find many interesting improvements in machinery and methods. But the most interesting things in the past history of the Crucible are the changes in the industry as shown by the history of the names on our mailing list.

Many of the names that were on our list when the first issue was mailed in 1912, are there today. Of these, some that were entered as the names of obscure, little-known chaps ten years ago, are "unknown" still. Others, entered as "unknown" at the first, have become the names of leaders of the industry today.

We are living in an age of change—of going up or going down. It is an age for men who DO.

The fellow who waits till tomorrow—waits—and waits. And the years glide by—to find him still waiting.

Quality Tells

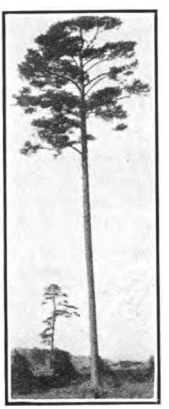
A NATIONAL TIMBERLAND POLICY—THE WHY AND WHEREFORE

By RALPH S. HOSMER, Professor of Forestry, Cornell University

(Written Specially for the Disston CRUCIBLE)

THE day of a National Timberland Policy has arrived. A new, perhaps the most important chapter is being added to the story of the development of the nation wide forestry policy that for over 30 years has been in the making. When in full operation, the additions to the forestry program that are now proposed cannot but be of the greatest economic moment to all the people of the United States. One of the most significant things about this whole matter is that this result is being brought about, in large measure, through the active co-operation and team play of various commercial organizations that are properly to be termed forest industries. For this reason, and also because the CRUCIBLE caters to a group of workers who are essentially dependent on the continuity of the forest, it is pertinent to review briefly some of the causes that have led to the demand for more rational management and care of all the forests of this country, than exists today.

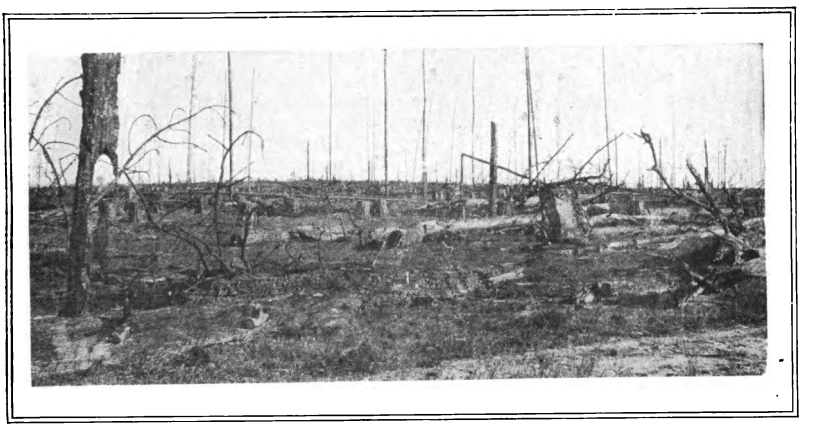
Until within the last year or two the great majority of the people of the United States thought of our forests as being inexhaustible. Owners, operators, manufacturers, members of industries like your own, and the consuming public, alike have paid but scant attention to the sources or to the extent of the timber supply. When one region was cut out, it was a relatively simple matter to move somewhere else. We thought we had forests to burn. And so, literally, until about 10 years ago, no really serious or wide spread attempt was made to prevent or control the forest fires that so often followed logging operations, or resulted from other causes. We have suddenly come to see that we were in error. Our original forests are fast disappearing. In one region after another the great stands of timber of former days have given place to areas of desolation. Striking examples are to be found in parts of the Lake States and certain counties in Pennsylvania. The Southern pineries will cease within a decade to be the center of the lumber industry. We have then but one other region of virgin timber left,—the Pacific Northwest and the Inland Empire. Already west-coast species are crowding for place in our eastern markets, and in effect setting the price for the products of local forests. Someone has to pay for the 3,000-mile haul, by rail or water.



A Pine grown in an open field.

Canada is in precisely the same boat as ourselves. The forest areas north of the boundary are no more inexhaustible than are our own. There are no other foreign sources on which this country can draw for the kinds and quantities of wood which we most use. It is idle to set exact dates, but within an easily measurable time we shall be dependent alone on what our forests can produce as second growth. There is no other alternative. But the people of the United States must have wood. It is indispensable to our needs as a nation. Somehow a way must be found to establish and maintain a continuing supply.

This is the reason for a National Timberland Policy. We need a program that embraces the four-fifths of our forest area that is now in private ownership, quite as much as for the forests that are now publicly owned. We need to make again productive the



"In one region after another the great stands of timber of former days have given place to areas of desolation." More than 5,000,000 acres of such barren land are found in Pennsylvania. Much valuable timber was lost through reckless and premature exploitation of the original forest.

non-agricultural forest land that has been cut over, and perhaps as well, subsequently devastated by fire. We need to change the state of things that make possible the statement issued from the U. S. Forest Service in June 1920, that we are cutting our forests more than four times as fast as they are being replaced by growth. And we must, as a first step, put a stop immediately to the damage and loss that is caused by forest fire. Not alone for stands of mature merchantable timber must protection from fire be secured. Quite as important is it that the second growth and other forest land be protected. For it is from these areas that the timber crops of the future will have to be harvested. Adequate protection from forest fire embraces all forest land. To secure it is the first move in any forestry program. Consequently, at the present time, fire protection looms largest among the things that form parts of the proposed National Timberland Policy.

The present movement for such a program was started by Col. Henry S. Graves, then Chief Forester of the United States, early in 1919. It gathered momentum during that year and by the end of 1920 had behind it the support not only of the forestry profession in this country, but as well of such organizations as the American Paper and Pulp Association, the National Lumber Manufacturers Association, the Association of Wood-Using Industries, the Western Forestry and Conservation Association and many others of similar standing, if not of size. It is true that there has not been unanimity as to the methods to be followed in putting the program into force. The problem at best is a complicated one and considerable dust has been raised by the discussion of certain of its details. But the essential points stand out with perfect clearness. The Nation must have wood. As things are going we face a shortage that is even now beginning to be felt. The only solution is to grow more trees on the non-agricultural lands throughout the country. The first step toward establishing forests on a permanent basis of continuous production is that forest fire must be controlled, and so far as is humanly possible, prevented. If the areas within the United States that, because of climate, soil, elevation or other factors, are suited only for

growing forests were all brought under proper forest management, there would be an ample supply of timber, wood and other forest products for all our future needs, with a surplus for export. The problem is how to get the necessary measures taken.

There are now before Congress two bills that seek to accomplish these ends. Both aim at the same goal, but they differ radically as to method. One, known as the Capper bill, was introduced last May (S. 4424, Sixty-sixth Congress, Second Session). It is understood that it is about to be reintroduced at the present session, in slightly modified form. This bill, in the interests of preventing forest devastation, advocates more or less drastic control of all owners of timberland, through a Federal commission, acting through the U. S. Forest Service. Its chief proponent is Mr. Gifford Pinchot, formerly Chief Forester of the United States, now Commissioner of Forestry of Pennsylvania.

The other bill is known as the Snell Bill (H. R. 15327, 66th Congress, 3rd session). It is based on the principle of co-operation by the individual states with timberland owners, in which the Federal Government takes the lead through offering to meet with financial aid, on a 50–50 basis, the appropriations made by the states that conform to certain requirements to be fixed by the Secretary of Agriculture. The Snell Bill has the backing of the U. S. Forest Service, now under Col. W. B. Greeley, of a considerable number of the other professional foresters of the country, and of the various commercial organizations mentioned above. It is unnecessary to question the motives that actuate these associations. The fact remains that they are heartily and unitedly behind the proposed legislation.

Forest fires must be controlled, and so far as is humanly possible, prevented.

Both bills provide for large appropriations; the most important item for immediate consideration being $1,000,000 per annum for work in forest fire prevention. For our continued welfare as a Nation it is absolutely necessary that the objects sought to be accomplished by these bills be brought to fulfillment through some form of Federal legislation. It is the privilege of every citizen to back one or the other bill; to say whether he favors coercive

measures by the Federal Government, or cooperation through the states. But it is also distinctly the duty of every citizen of the United States who can look at all into the future, and especially of those whose industry depends upon the forest, to take a definite stand on this question, and then to forward, by all appropriate means, action that will lead to the solution of our timberland problem. It is to be hoped that the readers of the Crucible will give this question their earnest attention. It is a matter that merits deep and careful thought.

African Teak is Strongest Wood

The heaviest timbers are oak, teak, jarrah (an Australian wood), and greenheart; the lightest are willow, poplar, and spruce. The difference is enormous. A cubic foot of teak will weigh over 80 pounds, while a cubic foot of willow does not exceed 13 pounds. All timber is stronger at maturity than at any other time. Seasoning will actually double the strength of green wood. To test the strength of different timbers without the elaborate machinery used for demonstration purposes, a simple plan is to take a piece a foot long and an inch square, place it between two supports and hang to its center a tank capable of holding about 1000 pounds weight of water. This tank is slowly filled, and the bending and breaking strains carefully noted. The results of such tests go to prove that oak, usually considered the stoutest of timbers, is wrongly placed, and that ash really comes first. A piece of ash of the dimensions mentioned took a weight of 690 pounds before it broke; while oak broke at 501 pounds. Even beech took a weight of 625 pounds before cracking. Larch, useful timber as it is, comes a long way behind it, for it breaks at 440 pounds; elm goes at 405 pounds, and Scotch fir at 381. The strongest of all woods is the African teak oak, which will stand up to 855 pounds; it beats the famous East Indian teak, but not by a very large margin.—*Family Herald & Star.*

Book Paper from Southern Pine and Red Gum

The possiblity of using Southern pine and red gum for the production of high-grade book and magazine paper has been demonstrated in recent trials at the U. S. Forest Products Laboratory, Madison, Wis. Book paper requires for its manufacture two kinds of woods—a long-fibered wood, such as spruce, to impart strength, and some short fibered hardwood to give the formation, finish, opacity, and other printing qualities. The Southern pines are long-fibered woods, excellently suited for the manufacture of wrapping paper and fiber board, but their pitch content and the difficulty of bleaching them have heretofore been obstacles in the way of their use for white paper. These obstacles, it has been shown, can be overcome in a large measure by proper cooking conditions and improved bleaching methods. Red gum is typical of many Southern hardwoods that might be used with the pines in the manufacture of the better grades of printing paper.

The laboratory experiments indicate that one cord each of loblolly pine and red gum are capable of yielding one ton of paper, at a cost which should allow a good profit under prevailing conditions.

The utilization of the Southern pines for book paper would spread the burden of the pulpwood supply over considerable territory which is favored with a large annual growth of timber. In fact, although the bulk of the standing timber of the United States is in the Far West, the bulk of the annual growth is now in the South. Pines and hardwoods are distributed throughout the Southern States in proportions well suited for the manufacture of book paper, and the forests are near the centers of paper consumption as well as the supplies of coal, chemicals, and other necessary raw materials.

Additional information and samples of the paper made in the trial runs of pine and red gum may be obtained from the Forest Products Laboratory on request.

NATIONAL ASSOCIATION OF STATE FORESTERS FORMED AT RECENT CONFERENCE IN HARRISBURG, PA.

Conference Called by Gifford Pinchot, Commissioner of Forestry of Pennsylvania, With Approval of Governor Sproul

Col. W. B. Greeley, Chief of United States Forest Service, Addressed Association

Reported Specially for the CRUCIBLE
By CHARLES N. CHRISTMAN—*North American*

AT the instance of Gifford Pinchot, Commissioner of Forestry of Pennsylvania, with the approval of Governor Sproul, a conference of the various State Foresters and Commissioners of Conservation was called to meet in the capitol at Harrisburg, last December. Most every state in the Union which has taken up forestry questions was represented, and the conference culminated in the organization of an association which is likely to become a strong factor in formulating a forestry policy for the best interest of the general public.

The organization is known as the National Association of State Foresters. Its offices and executive committee are filled by men well qualified to deal with the forestry problems confronting the Nation today. The officers are:

President—William T. Cox, of Minnesota.

Vice-President—F. W. Besley, of Maryland.

Secretary-Treasurer—R. C. Jones, of Virginia.

Executive Committee—C. R. Pettis, of New York; Gifford Pinchot, of Pennsylvania; William T. Cox, F. W. Besley and R. C. Jones.

"I am convinced, to get general, plan-wise reforestation, we must recognize that forest lands are public utilities; that they are subject to such forms and degrees of control as are needed to keep them continuously in timber crops."

Many subjects of interest were discussed by the Association, including the taxing of growing forests. It was the opinion of some that it was unfair that a "farmer" who is raising a crop which doesn't mature for say thirty-five or forty years, should be taxed the same as one who produces a yearly crop, or as in the case of some products, two or three crops a year.

Public aid to persons who desire to convert their land into forests, and help the national move toward reforestation by devoting their time and energy to raising tree crops, was advocated.

Among those who addressed the Association, was Governor Sproul, of Pennsylvania, and Col. W. B. Greeley, Chief of the United States Forest Service.

Public aid in forest protection and special dispensations for the forest owners were among the chief points emphasized by Colonel Greeley. His address in part follows:

"The critical point in the whole situation is that the United States is taking timber from its forests three or four times as fast as timber is being grown. As against a steady shrinkage

in the stands of virgin timber, there are enormous areas of idle, logged-off land which are increasing by the millions of acres every year. Instead of haphazard second growth or no second growth at all, the Nation must find some way to bring about plan-wise reforestation on all cut-over lands suited to timber growth, if its common necessitites are to be supplied adequately.

"How shall this end be accomplished? Shall it be left entirely to economic forces, as many suggest, to the law of supply and demand, to the enlightened self-interests of the forest owner who sees a profit or commercial advantage in reforestation; or shall reforestation be assured by recognizing squarely that forest lands have the nature of public utilities, and hence that the public shall exercise a voice in their management and use?

"The every-day incentives of business or personal interest will undoubtedly go part way in growing the timber which must be had to supply the requirements of this country. But they will go only part way. In the weighing of profits, enormous areas of timber-growing land would still be idle. Furthermore, in many portions of the United States, general reforestation is not possible without a large degree of public co-opration, indeed, of public participation. Public aid must be had by the forest owner in controlling the high fire hazard attendant upon an inflammable investment which must be carried over a long period of time.

"Public aid must usually be had through an adjustment of taxation to the nature and growing period of forest crops. Farm crops would not be grown if they were taxed twice a week during the growing season. Nor can forest crops be generally grown if subject to the full burden of taxation thirty or forty times before they become marketable.

"In the nature of things, therefore, reforestation cannot be left wholly to private initiative, although every just and reasonable encouragement should be given the forest owner to utilize it as a business opportunity. The public must, from the very nature of forest properties, be an active participant. The public must put around forest lands the conditions which will permit their owners to grow successive crops of trees, namely reasonable security from forest fires and taxation

Students planting trees. A crew of 20 men can plant 20,000 trees a day.

of the product when grown, rather than of the product while growing. But the public would not, and will not, create these conditions favorable to reforestations unless it is assured that the forest owner makes good on his part, and that the land will actually be kept in the continuous production of timber which the public interest requires.

"In other words, I am convinced, to get general, plan-wise reforestation, we must recognize that forest lands are public utilities, that they are subject to such forms and degrees of public control as are needed to keep them continuously in timber crops, and that under the broad theory of equitable compensation, applicable to public utilities, generally, forest lands must receive such just and special considerations that will enable their owners to obtain reasonable return while complying with the requirements put upon him in the public interest. This give-and-take-principle, I believe, must inspire our national forest policy."

"Tall Oaks from Little Acorns Grow"

At the close of the first chapel exercises after the opening of Admiral Peary's College, Bowdoin, Brunswick, Maine, George Thorndike, one of the students, stuck an acorn in the ground and, half in jest, remarked that a great tree would flourish there long after he was gone and forgotten. This happened in September, 1802, and though Thorndike passed away in 1811, he is not forgotten, for the oak has been named after him and under its shade the graduates receive their diplomas to this day.

Darn Good Saws

By NATE ADAMS

Put us in the hands of the man who knows
How to use us. Then any wood that grows

We will cut to the mark, and cut it clean,
For our teeth, well set, are sharp and keen.

No building would rise, no boat sail the sea,
Most all work without us would cease. For we

Of the woodman's tools, are first, are real.
Proud of our strength; for we're made of steel.

From the House of Disston, we have no flaws.
Our users say we are

darn
good
saws.

Quality Tells

THE HOUSE BY THE SIDE OF THE ROAD

There are hermit souls that live withdrawn
In the peace of their self-content;
There are souls, like stars, that dwell apart
In a fellowless firmament;
There are pioneer souls that blaze their paths
Where highways never ran—
But let me live by the side of the road
And be a friend to man.

I see from my house by the side of the road,
By the side of the highway of life,
The men who press with the ardor of hope
The men who are faint with the strife,
But I turn not away from their smiles nor their tears—
Both parts of an infinite plan—
Let me live in a house by the side of the road
And be a friend to man.

I know there are brook-gladdened meadows ahead
And mountains of wearisome height;
The road passes along through the long afternoon
And stretches away to the night.
But I rejoice when the travelers rejoice,
And weep with the strangers that moan,
Nor live in my house by the side of the road
Like a man who dwells alone.

Let me live in my house by the side of the road
Where the race of men go by—
They are good, they are bad, they are weak, they are strong,
Wise, foolish—so am I.
Then why should I set in the scorner's seat
Or hurl the cynic's ban?
Let me live in my house by the side of the road
And be a friend to man.

—Sam Walter Foss.

Illustrated by Courtesy of Greenfield Tap and Die Corporation, Greenfield, Mass.

RUSSIA AND SIBERIA

The night of Bolshevism has settled down black and impenetrable on the Russia we once knew, the long-time friend of the United States, the wielder for three weary years of a valiant sword in the cause of the Allied Nations.

"Remains of this dominion no shadow, sound or sight,
Except the sound of weeping and the sight of burning fire,
And the shadow of a people that is trampled into mire."

It all seems hopeless enough now, but nevertheless we are confident that the dawn will come, that later or soon the awakening Russian giant will break the fetters forged by a despotic and murderous minority, and a sane government will rule with which the rest of the world may trade in amity and honor.

THE undeveloped resources of the one-time Russian Empire are of course enormous and none greater than the vast reservoir of timber which waits to serve the world in European Russia and Siberia. In making a brief survey of this field we will first consider the lumber wealth of European Russia and end with some account of that of Siberia.

In a review of the world's timber supply, "COMMERCE MONTHLY" for May, says of Russia, "Russia in Europe and Asia contains almost half of the world's timber stands of commercial species. So far, however, there has been an insignificant development of the forests of Siberia. The Russian lumber industry is in European Russia. Although the estimated forest area of European Russia is nearly 500,000,000 acres, the actual area is only 300,000,000 acres, because of reductions that must be made for waste land, swamp, etc. Russia possesses vast coniferous forests and also large forests of hardwoods, mainly oak, poplar, elm and ash.

At the beginning of the war the Russian lumber industry had little more than started. The total cut of its sawmills was about eleven billion feet compared with an American cut at that time of nearly forty billion. However, there was a large local lumber business that did not go through the sawmills, and which thus did not appear in the figures for the Russian lumber cut. Before the war, Russia was the principal source of imported lumber for western European countries. According to recent reports, however, hardly a sawmill is now running in Russia. An attempt made in January, 1918, to reorganize the industry and put it on a stable basis, came to naught on account of the activity of the Bolsheviki. It will probably be many years before Russia can regain any substantial part of her former importance in the world's markets."

"THE LUMBER RESOURCES OF THE WORLD," published by the United States Government in 1910, says, "The composition of the Russian forests is still very little known. In 1893 out of the 315,900,000 acres of forests in European Russia and Caucasus which were under the administration of the forest department, there were 88 percent of conifers, 11 percent of hardwood, and 1 percent of openings and cuttings which did not come up to forest. In Siberia 71 percent of the total area was under

conifers, 29 percent under hardwoods. Oak occupied 3,284,682 acres, either in the form of pure forests or mixed forests in which oak predominated."

Constantine Fraboni in the "AMERICAN LUMBERMAN" for March 13th gives a more recent view of our subject. He tells us in part that "The total area of the old Russian Empire is about one-seventh of the land surface of the globe, and 40 percent of it is under forests. European Russia, with Finland, Poland and Caucasus has 550,000,000 acres of forests, and Siberia more than 800,000,000 acres of which two-thirds may be successfully placed on the market. In western Siberia alone, there are 465,000,000 acres of virgin forests, and eastern Siberia, while not so richly endowed, has sufficient timber to supply the world's demand for many generations to come. Before the recent radical change of the political conditions in Russia, 68 percent of all the forested lands were owned by the government, 23 percent by single proprietors, and only 9 percent by the peasantry. The total quantity of lumber cut annually was about 2,000,000,000 cubic feet. Under a correct system of forest management and good sales management, this cut could be largely increased.

These signs are placed on Pennsylvania State Forests, along traveled highways. Sixteen of them, 8x10 ft. are placed along railroads.

"Now, if we consider the land of eastern Siberia only, which is in the Valley of the Amur River system and covers an area of about 2,000,000 square miles and we take only 400,000 square miles as available for timbering, allowing a maximum of forty-five trees to the acre, this would give us 11,520,000 trees. The time required for these trees to mature being placed at one hundred years, 115,200,000 trees could be cut per annum without diminishing, with proper reforestation methods, this single part of Siberian forested land. The forests of northern Russia and Siberia contain almost exclusively coniferous and deciduous trees, but the first is in preponderance.

"Caucasus has about 19,000,000 acres of forests which are characterized by their great richness and variety, but until now they have been very little exploited, so that the commerce in lumber of this region was not important, although the beech and oak which are growing there in large quantities are highly valued for the good qualities of their fiber. The climate of Caucasus is very temperate, similar to Florida, especially in Trans-Caucasia, where grow in large quantities trees characteristic of warm regions, such as walnut, boxwood, hornbeam, birch, elm, ash, etc. Forests of beech trees, whose timber is the most useful from a commercial point of view, are of large extent and are situated upon the sides of the mountains.

"Russian population is 180,000,000 of which 90 percent are mujiks, that is, peasants. Almost every peasant makes his own hut and furniture, and cuts his firewood. All these different kinds of work are done exclusively with the same tools; that is, an ax and a saw. It is astonishing to see how many skillful mujiks achieve some really artistic pieces of furniture with such rough, ordinary and cheap tools. Now if we consider that each family of mujiks is composed of eight persons at least, we may easily deduce that more than 20,000,000 saws and axes are needed by the peasants only.

"At the outbreak of the war, there were in Russia about 1,200 sawmills and factories turning out wood products and working by machine power. They employed twenty to two thousand men each. Besides these mills, there are small lumber producers in very large numbers who work by horse power or windmills in small country places."

A most interesting and complete account of the saws and tools popular in the wood-working industries of Russia may be found in "RUSSIAN MARKETS FOR AMERICAN HARDWARE", published by the Bureau of Foreign and Domestic Commerce, 1916.

"COMMERCIAL RUSSIA" by Wm. Henry Beadle, a book which appeared in 1919, contains much information respecting Russia's timber resources, largely from an English point of view. The author speaks enthusiastically of the northern part of European Russia. "It is practically an unexplored country of virgin forests of almost incalcuable wealth, and is the property of the state. In fact, the Russian Government is probably the richest in material resources in the world, holding in its own name as apart from its citizens, thousands of square miles of land rich in timber and minerals and adapted for agricultural purposes. The timber of this region is felled in winter, conveyed in summer by rivers to the White Sea, and then shipped to distant lands."

The lumber industry of Russia and Siberia has been very extensively treated by Roger E. Simmons, Foreign Lumber Trade Commissioner, Dept. of Commerce, in the "LUMBERMAN" for May, 1919. Mr. Simmons does not strike so enthusiastic a note as others we have quoted. He tells us that "Russia's resources, while exceptionally vast, are as a matter of fact rather mediocre. Sixty percent of the forest standing is in Siberia, and a great deal of this timber is so isolated that it will be many years before it can be developed. European Russia is the section where the chief lumber industry of the nation is located. The forest area has been estimated at 435,000,000 acres—approximately one-half of the forest area of Siberia. Large deductions from this area will have to be made, however, for in 12 governments (governments compare to our geographical divisions of states) the forests are of a character to be of no commercial importance except for production of fuel. Vast area of marshes exist which have no tree growth. Then too, extensive inland lakes and other waters, with the other areas named, subtracted from the estimated forest expanse, will reduce the total woodland area to a little less than 300,000,000 acres.

The European forests are unevenly distributed in that 64 percent are to be found in the five northern governments. The character of tree stands in this section are Scotch pine and spruce; these soft woods being in large majority over the birch and aspen, the only hardwood variety to be found growing there. The eastern or Ural mountain region often called the upper Volga forests, supply domestic demands.

Signs Help in Fighting Forest Fires

Above is one of the warnings which are posted in state forests by the Pennsylvania Forest Department. They helped the Department to achieve its greatest record last fall, when only 100 acres of state forest were burned over during the fire season. The Department gives full credit to the public for its aid in stamping out the evil. One of the most efficient plans was the request to hunters and campers not to smoke while moving in the woods.

As Time Goes On

The moving finger writes; and having writ
Moves on; nor all your piety nor wit
Shall lure it back to cancel half a line,
Nor all your tears wash out a word of it.

—*Omar Khayyam.*

Eucalyptus Trees

Misty and tall the Eucalyptus trees stand, their silhouette on the blue southern California sky taking strange outlines. Like the cypress which define themselves so sharply against the clear Italian skies, forming lacy patterns of grace and charm, so these Eucalyptus trees, planted for utility, have come to beautify and delight.

Like the inhabitants are these foreign-looking trees. To the world southern California has beckoned, and the strangers have come, giving such a love to her fair lands that now few know of their former allegiance. Likewise the tall queenly tree which graces the hill-tops, lines the boulevards and protects the vineyards, has come a long distance. Australia was its home, but so readily has it settled its roots into the soil of the sunny country that it is regarded almost as a true native.

There are many species of the Eucalyptus, the tallest of which is the peppermint tree; the blue gum is common, and the Eucalyptus gigantea is a lovable tree. This last species has a brownish stringy bark, and great is the delight of children to catch a piece of bark and quickly strip it up the trunk, leaving a delicate smoothness to rub their cheeks upon. And then how eagerly they begin to collect the little green conical coverings (from which the tree gets its name) when they fall off from the expanding buds, stringing them into long chains that give forth a peculiar resinous fragrance. How they would delight to gather the yellow fluffy flowers which decorate each slender branch, but the Eucalyptus tree holds its treasures far above their reach. High in the balmy air they blossom and glisten; the long, slender leaves, which in the growth of the tree change strangely in form and color, rustle and shine. The whole tree seems to glow with joy in the warm sunshine.

When twilight grays the light, and shadows deepen the green, the Eucalyptus trees gain new beauty. Misty and tall they stand out against the darkened blue of the southern sky, exacting grateful tribute to those who first perceived their beauty and usefulness.

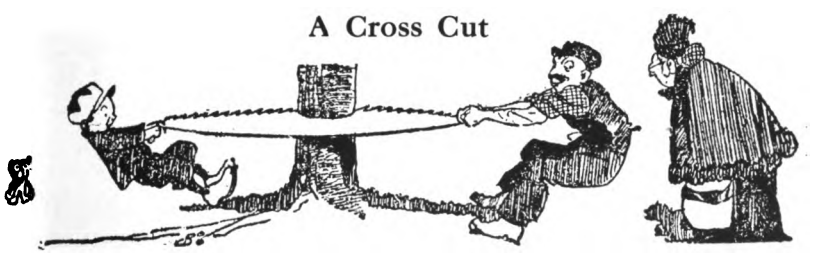
—*The Christian Science Monitor.*

Pennsylvania Has a Plan for Aiding Private Forests

At the recent conference of State Foresters at Harrisburg, it was developed that Pennsylvania has a plan for aiding private forests. The plan, while workable, has not yet been used to any great extent by land-owners.

It was announced by George W. Woodruff, chief of the bureau of lands of the Pennsylvania department of forestry, that out of 24,000,000 acres of forest land, only 8,000 acres have been registered under a state law as auxiliary forests. Under the provisions of the act an auxiliary forest enjoys special relief in the way of taxes. When harvest time comes the land must be released and is then taxable. State aid in supervision and protection is offered as a special inducement in addition to relief from tax.

A Cross Cut



Old Lady—"I've been watching you teasing that boy! Now let him have that saw at once!"

SAWDUST

A POOR ZOOLOGIST

"You're a dear," said the wife as her loving husband handed over the weekly pay envelope.

"Slight mistake in zoology," he returned. "You mean a goat."—*Author Unknown.*

MORE EFFECTIVE THAN LOVE

"I know a man that has been married thirty years and he spends all his evenings at home."

"That's what I call love."

"Oh, no; it's paralysis."—*Cornell Widow.*

METERS

There are meters of accent,
There are meters of tone,
But the best way to meet her
Is to meter alone.

There are letters of accent
There are letters of tone,
But the best way to letter
Is to letter alone.

HELP

"There isn't much I don't know about the English language," boasted the long-haired man in the club.

"I'll test you," a friend picked him up quickly. "I'll dictate a paragraph to you."

With an assured air the boaster seized his pencil, but his jaw dropped as he heard:

"As Hugh Hughes was hewing a yule log from a yew tree a man dressed in clothes of a dark hue came up to Hugh and said: 'Have you seen my ewes?'

"'If you will wait until I hew this yew tree I will go with you anywhere in Europe to look for your ewes,'" said Hugh.—*Houston Post.*

SOMETHING LIKE LOT'S WIFE

"Did you hear that Bill was dead?"

"No. What did he die of?"

"Oh, he had lumbago. They rubbed his back with alcohol and he broke his neck trying to lick it off."

SOME DIFFERENCE

A man went into a store and asked for a comb.

Do you want a narrow man's comb? asked the clerk.

"No," said the customer. "I want a comb for a stout man with rubber teeth."—*Lone Scout.*

CONFUSED ANALOGY

A political speaker was criticizing the policy of the Government in relation to the Income Tax.

"Yes," he said, "they'll keep on cutting the wool off the sheep that lays the golden eggs until they pump it dry."

BOTHERED

"Ma, do cows and bees go to heaven?"

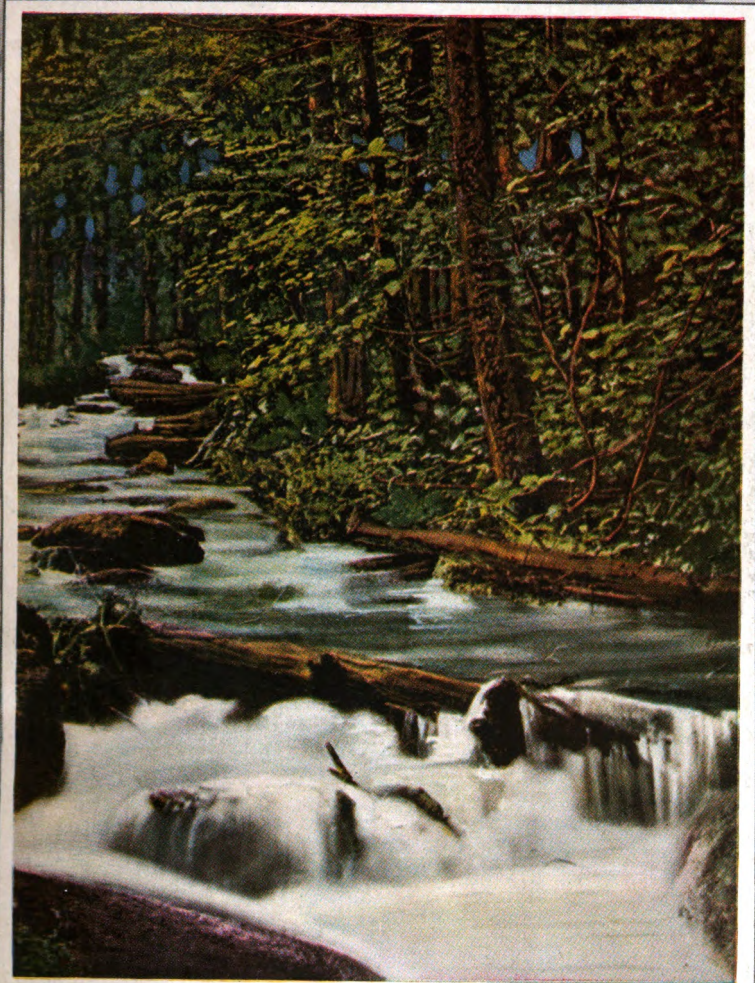
"Mercy, child, what a question! Why?"

"Cause if they don't, the milk and honey the preacher said was up there must be all canned stuff."

WOULD SHE BE QUALIFIED

A traveler stopping at a lonely mountain cabin asked for a drink of water. After drinking it, he got into conversation with the old woman who gave it to him, telling her great stories of what he had seen on his travels. Finally, when he had stopped to take breath, the old woman took her pipe out of her mouth and said: "Stranger, if I knowed as much as you do, I'd go somewhere and start a little grocery."

THE DISSTON CRUCIBLE



MARCH 1921

DISSTON
SAWS TOOLS FILES

Drag-Saw Blades That Are Born Log Fighters

Where there is work for a drag-saw, there is need for a Disston Blade. Through long years of experience, under the most drastic working conditions, Disston Saws have done the job to the satisfaction of the expert lumberman—both in the woods and in the mill—and Disston Drag-Saw Blades are of this same quality and workmanship.

Specify "Disston Blade" for your Drag Saw.

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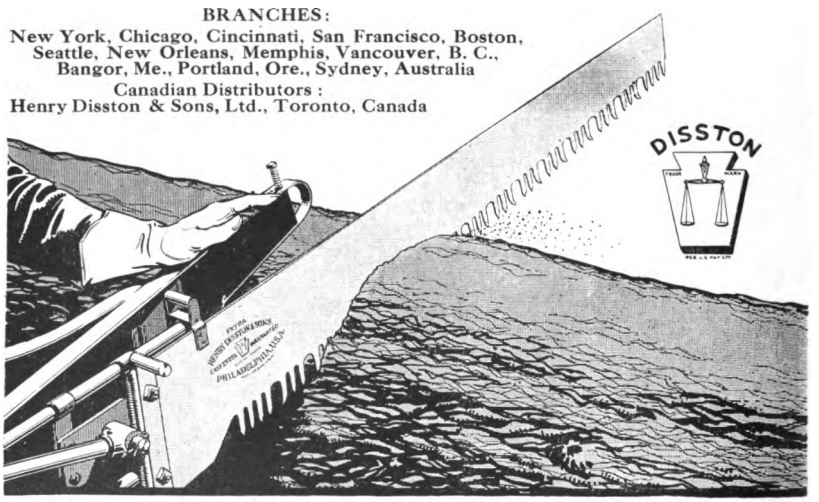

THE DISSTON CRUCIBLE

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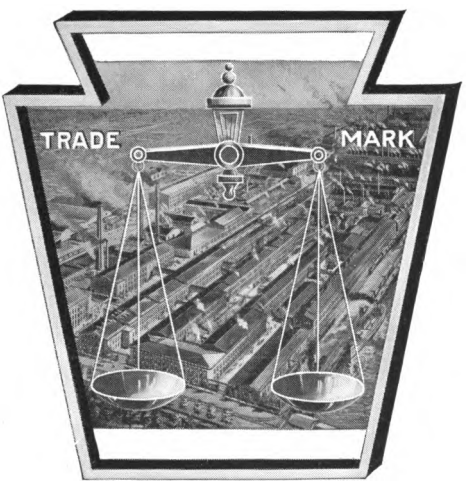

This Magazine is Published for the Advancement of the Interests of Millmen by

HENRY DISSTON & SONS
INCORPORATED
Keystone Saw, Tool, Steel and File Works
PHILADELPHIA

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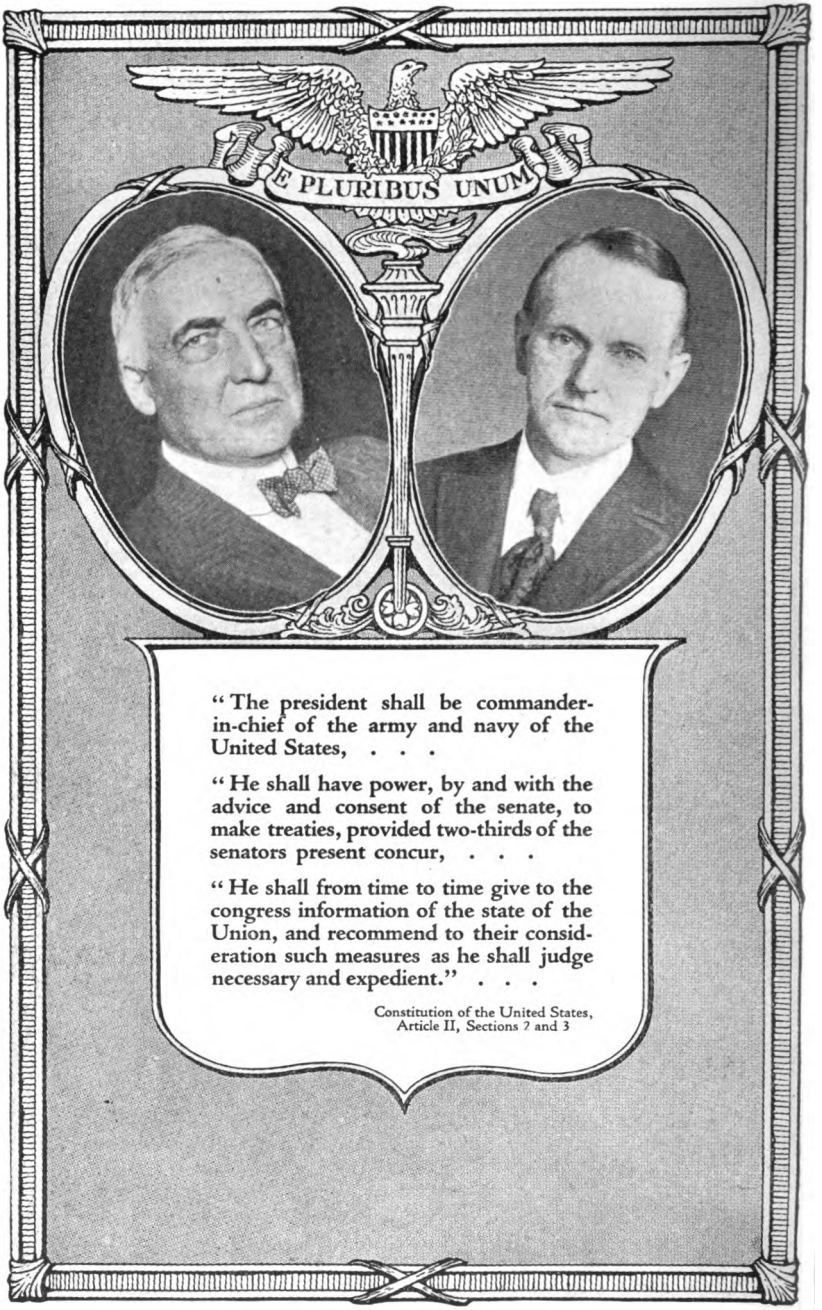


Courtesy of "The Walworth Log," Boston, Mass.

THE
DISSTON
CRUCIBLE
A MAGAZINE FOR THE MILLMAN

VOL. X MARCH, 1921 No. 2

Business

"American business is not a selfish, privilege-seeking monster. The agitator who so describes it and the statesman who treats it with abuse and suspicion, forget that American business is the daily labor of the whole people and the clothes upon their backs and three meals a day. More vital to the wage earners, who are ten to one greater in number than business executives, is the continued prosperity of America. Business in America is not big business, it is little businesses —all the units of production, even the single machine in the shop and the farm and the home. American business is a vast fabric woven through the up-going years by the daily tasks of a faithful, virtuous people."

—Warren G. Harding.

Quality Tells

STRONG FOREST POLICY ADVOCATED BY PRESIDENT HARDING

Head of the Nation Would Make United States Self-Reliant

Duty of Government to Provide Timber Needs for Future Generations

THE realization of our highest hopes lies in the continued construction and improved character of our homes, because they have the first influence in the standard of American living. Apart from furnishings and the almost limitless numbers of varied utilities, lumber is the first requirement of the prospective home builder.

"At the present time there is a notable halting in the construction of homes because of the almost prohibitive cost. Lumber plays its very conspicuous part therein. Much of this, of course, relates to the increased cost of production, which dates from the changed conditions since our entrance into the world war, but there is a permanent inclination to advance in cost because of the very manifest diminution of supply.

National Policy Necessary

"We ought to have a national policy of preservation and reforestation. No one disputes that lumber prices are in large part responsible for the halting in the house-building movement. Lumber prices have increased very sharply since the war, and prices in many instances have gone up 300 per cent. above those of the pre-war period.

Five million acres of such barren land in Pennsylvania, alone, which if stocked with trees, and properly cared for, would go a long way "to produce a sufficient supply of timber for all our needs."

"The one thing which the Government may do is to adopt that policy which will assure to future generations the timber which is necessary to our lumber needs. There remains a large supply on the Pacific Coast, but the problem of transportation makes this supply unavailable to the East and Middle West, unless we contemplate a cost of transportation which will continue to discourage building enterprise.

"It is common knowledge that there is ample land in this country of ours, not adapted to other uses, to produce a sufficient supply of timber for all our needs, if it is only stocked with trees and nature is allowed to contribute towards our necessities. We must begin to think of timber crops as we do of other cultivation in this land of ours, and we must put an end to that carelessness and neglect to which we trace our destructive forest fires.

"We must begin to think of timber crops as we do of other cultivation in this land of ours, and we must put an end to that carelessness and neglect to which we trace our destructive forest fires."

"With timber growing, on the one hand, and forest preservation and protection on the other hand, there is not any reason why the United States should not be self-reliant in the great essential of lumber for construction purposes."—*Pre-election address by Mr. Harding, before Lumber Mfrs. Assn. at Marion, Ohio.*

Yields of Alcohol from Wood Waste

Softwood lumber mill waste can be made to yield twenty gallons or more of 95 per cent alcohol per ton, and hardwood waste about half as much. Some actual yields obtained by the U. S. Forest Products Laboratory, Madison, Wisconsin, from the waste of various woods are given in the following table:

SOFTWOOD WASTE

Kind of wood	Percentage of wood convertible into sugars	Percentage of sugars fermentable	Gallons of 95% alcohol from 1 ton of wood
White Spruce	23	71	25.8
Longleaf Pine	23	72	25.1
Red Spruce	22	72	24.0
Norway Pine	25	66	23.4
Idaho White Pine	21	74	23.4
Western Hemlock	21	77	23.0
Montana White Pine	20	75	22.0
Lodgepole Pine	21	67	21.8
Sugar Pine	20	66	21.5
Douglas Fir	21	67	20.7

HARDWOOD WASTE

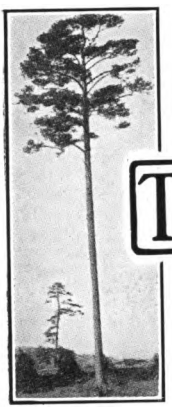
Silver Maple	20	47	14.1
Birch	20	46	12.9
White Oak	17	50	12.4
Red Gum	20	38	11.0
Sycamore	18	38	9.7
Hard Maple	18	34	9.1
Red Oak	19	30	8.1
Cottonwood	18	30	7.2
Slippery Elm	16	26	6.0

The manufacture of industrial alcohol is at present about the only feasible method of utilizing lumber mill refuse on a large scale. An alcohol plant with a daily supply of 180 tons of wood can produce 3600 gallons of alcohol at a cost, under present conditions of approximately 25 cents a gallon. The success of plants now in operation justifies a serious consideration of this process by mills having a large quantity of waste. A descriptive pamphlet including estimates of plant requirements and recent cost data on the manufacture of alcohol from wood is obtainable from the Forest Products Laboratory on request.

USE OF FORESTS IS INCREASING

National Reserves Becoming Recreation Grounds for Campers and Summer Residents

Excerpts from COL. W. B. GREELY'S Annual Report



THAT the use of the national forests for recreational purposes is increasing rapidly and bids fair to rank third among the major services performed by the national forests, with only timber production and stream flow regulation taking precedence over it, is the statement made by Col. W. B. Greely, head of the forest service, in his annual report. Many summer homes are being erected in the national forests by private individuals, and the use of forests for other forms of out-of-door recreation was greater during the past year than ever before.

The summer home business promises to become an important source of revenue, Col. Greeley points out. On the Angeles forest in Southern California, for example, a total of 1,329 permits for summer residences and commercial resorts were, he says, in effect at the close of the past fiscal year. The revenue from this one item amounted to approximately $22,000. It is believed that within a few years the revenues obtained from the various recreational settlements within the Angeles forest will pay the entire cost of protection and administration.

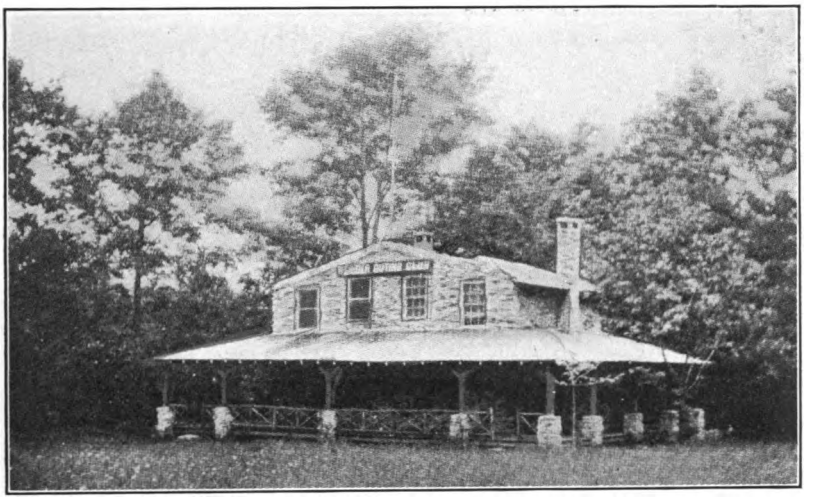
Many western communities are recognizing the recreational resources of nearby national forests as one of their greatest assets and privileges, Col. Greeley says, and are establishing community camps under more or less formal organization.

The picnic camps are improved by the construction of fireplaces, rustic tables and seats, and are made available to the public without any charge. The vacation camps under municipal direction charge merely the expense of feeding and caring for the groups of city people who enjoy their privileges.

The growth of the recreational resources of the national forests is so rapid that specially trained men are needed to direct and plan for the most effective development of this service.

The protection of wild life and the recognition of the national forests as natural breeding grounds of fish and game is closely related to the development of the recreational resources. To make more effective the work of game protection, in co-operation with the state and local authorities, and to secure better development of the fish and game resources of the national forests, Col. Greeley believes that Congress should make provision for the establishment of game sanctuaries within which wild life may find security. These sanctuaries, he says, should be relatively limited in area but should be established in considerable number.

The addition to the Absaroka and Gallatin forests of the lands still in government ownership and under withdrawal along the Yellowstone river north of Gardiner is urged by the chief forester. This land, he states, is urgently needed as winter range for the elk, and its addition to the national forests will materially relieve the situation without working an injustice to the local inhabitants whose live stock use the range. If this action is not taken the outlook for the northern elk herd is gloomy. The prospects for the southern herd are more bright, but additional purchase of land for summer feeding grounds appear absolutely essential.—*Ex.*



Permanent Camp Site on Clearfield, Pa. State Forest

Over 400 permanent camp sites have been leased, and attractive and commodious buildings have been erected upon many of the selected sites in Penna. State Forests.
California issued 1,329 permits for summer residents in her state forests in 1920.

A Forest Fire

A Vivid Description of the Devastation Caused by the Forests' Worst Enemy

To the average man, no doubt, the reading of the destruction of miles of standing forests conveys but little of its true significance. He can hardly appreciate the gigantic figures arrayed before him as to the square feet of timber burnt or the estimated value of the same in millions of dollars. He may perhaps be aghast at the loss of life or suffering and hardships endured by those who were fortunate enough to escape the flames. He may even dimly realize that these people have lost their homes, their possessions, their all. But the effects on nature are as a closed book to him. He has not seen; he cannot understand.

Stately forests harbor countless animals, birds and insects. Life, indeed, is seething in it. The soil on which it stands is nursed and enriched by its fallen foliage and trees, which in many instances cover even the bare rocks sufficiently to allow of the seeds taking root right over them and which form always a natural basin where the raindrops may fall and accumulate, to percolate subsequently into the crevices of the rocks, from which again they will appear in the form of a gushing spring. Just as on the even outpouring of the spring will depend the flow of the brook, the stream and the river, so does the spring itself depend on the existence of its damp and mossy forest reservoir for its waters. The forest fire is capable of destroying all birds, animals, insects, vegetation and soil. The voice of the forest is hushed, and the death of the trees is not only accompanied by the annihilation of one of nature's great water storages, so vital to the prosperity of some, perhaps far distant, agricultural community, but by the disappearance of an important factor in the regulation of both climate and rainfall over a considerable region.

The picture of a forest destroyed by fire almost baffles description in its appalling horror. Unrelieved by the accustomed sounds, the cheerful note of

Continued on page 26

Typical Yellow Pine Forest in Louisiana. These virgin forests soon will be a memory, or

LOUISIANA STATE DEPARTMENT

Through Legislation, Education, an ment has accomplished much by

By M. L. ALEXANDER, *Commissioner*,

SINCE the establishment of the State Department of Conservation, eight years ago, Louisiana, through the adoption of sane and reasonable legislation, constant campaigns of education, and a practical administration of the affairs of the department, has rapidly forged ahead to an enviable place among the States of the Union as an exponent of the policy of the conservation of natural resources.

In the varied activities of the department, forestry has had a large part, and the scope and importance of the forestry division has more recently been considerably amplified. Some of the latest forward steps taken by the State in this respect are:

The adoption of regulations requiring railroads to equip locomotives with approved types of spark arresters.

A measure requiring the denuding of lands intersected by rail lines to a space of two hundred feet on each side of the tracks through forested sections.

The inauguration of a law governing the cutting of timber, in which it is stipulated that sufficient seedlings be left standing at appropriate distances to insure the natural reforestation of the denuded areas.

Provisions for the creation and maintenance of a competent and efficient forest fire patrol and the encouragement of societies for the prevention of needless fires.

The adoption of a just tax on the severance of timber from the soil.

Louisiana has been selected for some of the most far-reaching and significant experiments in reforestation. A very notable experiment in reforestation has been conducted by the Urania Lumber Company in co-operation with the Department of Conservation of Louisiana, and it has been successfully demonstrated that a merchantable crop of trees can be grown in 35 to 40 years. It has

The practice of forestry on private lands in Louisiana is encouraged and secured by three main lines of work

Fire Control
Investigation and Demonstration
Education and Publicity.

It is estimated that the present rate of lumbering will entirely deplete them within a decade.

ESTABLISHED EIGHT YEARS AGO

Practical Administration, the Department of Conserving Natural Resources.

artment of Conservation, State of Louisiana

also been shown that pine trees for the making of pulp for paper mills can be grown within a period of 15 to 18 years. In this work, the department has had the co-operation of the United States Forest Service, the Yale School of Forestry, which has graduated two classes on Louisiana's forest reservation, as well as that of prominent individuals and corporations.

Louisiana has demonstrated, among other things, that all cut-over lands are not adapted to an economic and successful pursuit of agriculture, and could be more usefully employed for growing trees. Pulp wood can be grown here suitable for high grade paper and paper board for which there is a constant demand. The determination of a large concern, within the past few weeks, to invest $8,000,000 in paper mill units is a practical declaration of faith in Louisiana's assured harvest of pulp wood. Louisiana has proved that its rapidly growing loblolly will reforest a cut-over area in twenty years time. It has proved that the fire and the hog are the greatest enemies of tree growth. It is at last convincing cattle men that the policy of burning over cut-over lands is wasteful and does not improve forage, and it has adopted a method of taxation whereby encouragement is afforded to the grower of trees under state protection that assures an ample return to the investor.

Louisiana has demonstrated, among other things, that all cut-over lands are not adapted to an economic and successful pursuit of agriculture, and could be more usefully employed for growing trees.

That Louisiana should take a lively interest in matters pertaining to forestry is a natural concomitant to its interest and economic progress. A few facts concerning the State in its relation to the lumber industry will make this quite clear:

Louisiana is the second lumber producing State in the Union.

Annual cut of pine averages 3,000,000,000 board feet; cypress, 600,000,000 board feet; hardwoods, 300,000,000 board feet, a total of nearly four billion feet of timber. This lumber was

worth $120,000,000 in 1918, and $200,000,000 in 1920.

About 50,000 persons are employed in the lumber industry in the State, or 57 per cent of all those employed in manufacturers.

About one-quarter of the total freight of the railroads of the State is supplied by the lumber interests.

Investment in the lumber industry is estimated at $290,000,000. This is $60,000,000 more than the assessment of all farm and pasture lands, agricultural equipment and all livestock in Louisiana.

Pine Cones

Louisiana's virgin timber acreage, on the last estimate, was placed at 5,180,000 acres, divided as follows: Pine, 2,170,000; hardwoods, 2,790,000; and cypress, 220,000.

The State has 12,260,000 acres of cut-over lands, divided as follows: Pine, 8,225,000; hardwoods, 2,685,000; cypress, 1,380,000.

The total stand of all kinds of timber is estimated as follows: Pine, 46,666,000,000 board feet; cypress 13,200,000,000 board feet; hardwoods, 34,800,000,000 board feet.

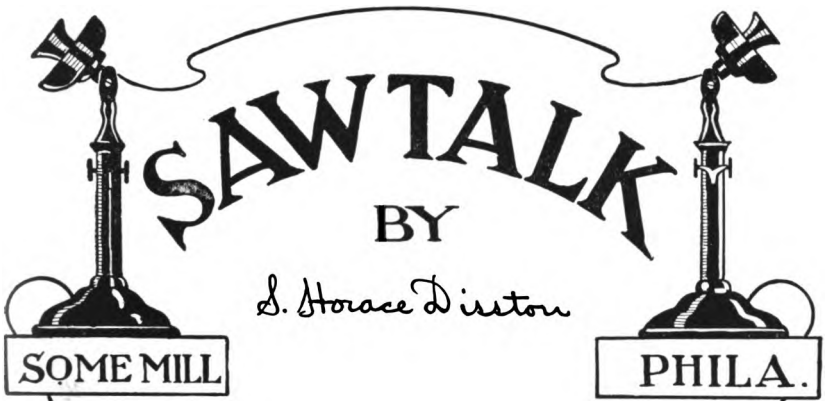
These figures amply justify the development of a forestry service in Louisiana second to none in the country. The practice of forestry on private lands in Louisiana is encouraged and secured by three main lines of work: fire control, investigation and demonstration, education and publicity.

While falling short of perfection, the forestry legislation in the State secured this far is as comprehensive and practicable as may be hoped for at this time.

A Forest Fire

Continued from page 23

songbirds, the chirruping of squirrels or chipmunks, the calls of animals or the humming of insects, deathly silence reigns oppressive and supreme. Great trees and small trees alike, black, bare and gaunt, stand shivering as the breeze soughs a mournful dirge through their ranks, ghastly skeletons of nature's once beautiful handiwork, or else lie prostrate on the ground charred, burnt and shrivelled, grim spectres of a useful past, proclaiming the passage of ruthless death, the advent of desolation and decay. No butterfly or moth flutters over the withered and blackened leaves; no little creature or insect crawl from among them, started by the approaching footfalls. Far down in the accumulation of twigs and decaying vegetation which has formed the forest bed, into the mossy and spongy soil which in the past has held water to furnish life to the trees living on it, the relentless fire has eaten its way and left its train a mass of cinders from which all nutriment has been utterly scorched. The human visitor to this tragic scene will have himself for company; will hear his own breathing; will be conscious of his own heartbeats; will be almost terrified at the sound of his own footsteps; for life has been extinguished, the silence of the grave will surround him, and it will seem almost sacrilege to break the all pervading quiet of the dead. In due course the action of the winds will blow away the cinders, and the bare rocks over which once grew the forest will be exposed to view in all their unbeautiful and grim nakedness, and the region will remain barren until, perhaps, after the lapse of centuries nature once again shall have succeeded with indomitable patience in recovering the rock with a fresh soil.—*Ontario Game and Fisheries Commission.*



Where Quality Tells

An average log band saw, travelling from 9,000 to 10,000 feet per minute, makes more than 200 revolutions per minute.

Have you ever stopped to consider the great strain upon a saw in such use, and the wonderful quality of steel required to withstand that strain?

If the saw is making 200 revolutions per minute, that means that every part of the saw must completely change its shape 800 times every minute—14 times a second! The saw goes over the top wheel and it conforms to a half-circle, comes down the cutting side, is straightened out, goes under the lower wheel and conforms to a half-circle in the opposite direction to the first, comes up and is straightened out—and so on, the complete bending process 14 times every second!

If you pick up a piece of metal and wish to break it, you bend it—first one way and then the other—just as a band saw is bent when in operation.

Consider that, in a saw, this bending goes on, 14 times a second, day in and day out for months—and the quality and strength of the steel is not injured!

It is for reasons such as these that we speak so often of the *quality* of Disston-made-Steel—because quality is surely required.

RUSSIA AND SIBERIA

(*continued from last month*)

THE Northern Russian or White Sea region is entirely marketed in foreign regions. None of the production here is sold for internal use. The central region is divided, in that 70 percent is used domestically and 30 percent exported through the ports of Riga and Petrograd. The western region is interesting in that its products are in demand to supply the markets of Ukraine and German markets; transported across the frontier, and for export by sea through Baltic ports. The sawmill industry is but little more than started in its prospective development. The machinery equipment is according to the Swedish system, gang frame-saws. It is from the Baltic ports that the Riga pine, claimed to be the most widely-known wood throughout the world, originates. The grades of lumber from Riga on an average are lower than those from any of the Russian export centers. This is due to the fact that the forests in the Valley of the Western Dvina have been largely cut over and in late years the second-class logs are producing lower grades of material.

The forest region of Western Russia, the source of the material sent to Germany, like the Polish forest region, lies in the territory which was the battlefield of the east front where the Russian forces contended against the Austrians and Germans. As a result of the war and the revolution, it is roughly estimated that over 11,000,000 of the 20,000,000 acres in the western forest region has been destroyed or cut for war needs. A large part of the demoralization of these forests was due to artillery fire; while for strategic purposes, to impede the advance or retreat of armies, forest fires were resorted to, adding to the demoralization of woodlands in this section. From the foregoing it is very easy to conclude that Russia cannot furnish Germany with anywhere near the quantity of forest materials as before the war.

The climatic conditions of Siberia are favorable to lumber manufacturers. Snow remains on the ground for five months each year to a depth of 18 inches on the average, providing excellent transportation for logs. It will be remembered in speaking of Siberia that it is two and a half times larger than the United States; hence the conditions of soil, climate and temperature varies in this great extent of territory. The most of the timber in Siberia is ripe and should be cut. It grows slowly due to the climatic conditions.

The Siberian forests contain the largest bodies of softwoods in the world, with a large amount of excellent hardwoods in the eastern part. There are some pure stands of various species of pine. Following are some of the principal woods of Siberia: Kedr is a close-grain pine resembling sugar pine. It is found sometimes in pure stands and will average about 16 to 18 inches in diameter and will yield about two 21-foot logs. This wood can be used for every purpose where soft pine wood is desired. Stands of kedr which will run 20,000 feet to the acre are not uncommon. Along the Trans-Siberian Railway, some distance back, the convenient timber has been cut. The walnut timber is of excellent quality

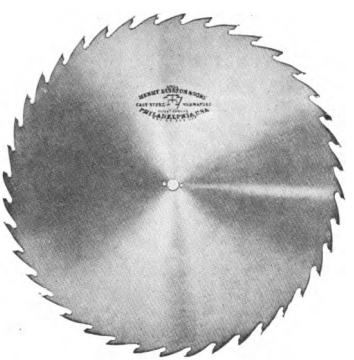
and is used for veneer. There are no pure stands of walnut. Oak timber is pretty well scattered and much of it is of good quality. Maple logs will average about 10 to 12 inches at the top and the tree generally yields one 21-foot log. Lime, a softwood, is not found in pure stands. It is of a white color and a good joinery wood.

The following woods are more generally distributed throughout Western, Central and Eastern Siberia. *Larch:* There are two species. This tree is one of the tallest in Siberia and is often found in pure stands. It is a very dense wood, hard and durable, very serviceable for railroad ties. *Pine:* (Pinus Silvestris) The color of this pine is yellowish. It is medium soft and carries a good percentage of clear. This is the most generally distributed wood in Siberia and often is found in pure stands, sometimes yielding 20,000 feet to the acre. *Birch* in Siberia attains a diameter from six to ten inches. The trunks are often crooked and the trees are rarely found in pure stands. Birch is the wood which follows the pine denudation but the new stands of pine again crows out the birch. Birch is found both in European sack peasants own the remainder. Forest fires are severe and frequent in Siberia, and large areas of fine timber have been destroyed. Lumbering operations have been carried forward in a rather crude manner up to this time with a few exceptions. There is a great potential field for the sale of American sawmill and logging machinery. In normal times there is an abundant supply of labor.

Siberia has a climate not unlike North Dakota. Its rivers flow north and east into the Arctic and Pacific Oceans. It has magnificent waterways which are navigable for thousands of miles. Siberia is traversed by the Trans-Siberian Railway, double-tracked for a distance of nearly 6000 miles, with a gauge of six feet, compared with the American standard gauge of four feet 8½ inches." "Eastern Siberia," to quote again from Mr. Roger E. Simmons, "is most interesting to the lumber manufacturers of the Pacific Coast of America, in that it holds possibilities for development into a large lumber producing center that will afford competition with the Pacific coast woods sold in Oriental markets. The forests of Eastern Siberia, suitable

and Asiatic Russia." Among the other woods are aspen used for pulp and match wood. Yel, a species of spruce, also used for pulp, and Pichta, similar to hemlock and used for cordwood but would make excellent pulp, are two others.

"The opportunities for the development of the timber resources of Siberia are very great. The timber is owned generally by the government to the extent of about 96 percent while Cos-



Above are two of the Saws used in reducing the great forests of Russia and Siberia—

Disston Tennon Tooth Cross Cut Saw.
Disston Solid Tooth Circular Saw.

for sawmill purposes, are located within the basin of the Amur river. This includes not only Eastern Siberia but Northern Manchuria. It would be impractical to separate Manchuria from Eastern Siberia for this reason, and accordingly I extended my investigations to cover Northern Manchuria. The forest area of this basin has been roughly estimated at 121 million acres. Anyone acquainted with the species of

trees formerly growing in the forest of the Lake States of the United States, would feel at home in Eastern Siberian woodlands. As to topography, Eastern Siberia greatly differs from the Lake States in that the surface conditions are mountainous and rolling.

There are 18 sawmills in Northern Manchuria and Eastern Siberia, producing roughly 350 million feet annually. A large percentage of this is demanded for home consumption, considerable quantity shipped by rail from Manchuria to North China markets, Tientsin, Pekin, etc., and a small percentage exported to South China; and in late years before the war, two million feet annually was being sent to England. Kedr pine is the only species that holds any export significance. It goes without contradiction that the Eastern Siberian lumber industry will never develop in extent equal to any of the principal lumber producing centers in America. The idea of the Siberian oak forests becoming the source of extensive oak lumber production is a perfect myth. There are vast stands of oak in the southeastern part of Eastern Siberia, none in Northern Manchuria, but these trees are so small in diameter that no industry can be expected to result from exploitation. According to information given me, another veneer plant as large as the one operating near Vladivostok, at present consuming approximately 1½ to 2 million feet of oak logs per year, could hardly be supplied with an equal amount of logs. Except large-sized oak timbers for special purposes shipped at infrequent intervals to China and Japan, there has been no export of oak lumber from Siberia. Considerable veneer has been shipped to England from Vladivostok, but no oak in the shape of lumber, squares or staves."

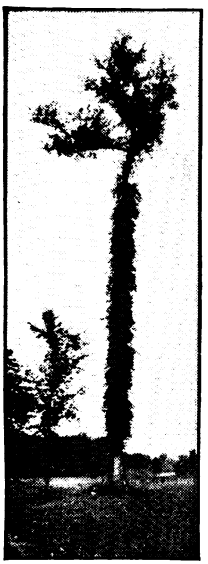
"Inroads will shortly be made by the Japanese in the lumber markets of the Orient now supplied by Pacific coast manufacturer", states the Federal Trade Information Service in a recent issue. "Large quantities of sawmill and lumbering machinery now in the possession of the Japanese will be installed by them in the forests of Siberia as soon as that country is tranquil enough to allow industrial undertakings. With cheap labor and shorter freight routes, it is said that they will cut far beneath the prices of the North American product." All of which remains to be seen.

"Latvia", says the LUMBER TRADE JOURNAL, "expects to find in its forests the funds immediately necessary for the reconstruction of the country. The four southern districts of Livland, Riga, Wenden, Wolmar and Walk, claimed as belonging to the State of Latvia, contain 413 estates with a total forest area of 1,166,024 acres. The total area of private forests in the country, bearing in mind the inevitable depreciation due to long years of war and German occupation would be about 2,160,000 acres.

"South Russia is not, however, so fortunate. Virgin forests of high-class timber, including oak, beech, pine, birch and the renowned walnut of Caucasia cover wide expanses of the Black Sea province of Georgia and the Terek and Kuban countries. But bands of the "Green Army", called "green" because its members make the forests their habitation, have rendered the timber resources of South Russia practically inaccessible since the earliest months of the revolution. Parties of woodcutters were organized (by an American furniture company) and sent to the walnut forests. Box cars were procured to bring the logs down to the harbor. Hardly had the actual work of hewing started, however, when brigand bands made their appearance upon the scene armed to the teeth. The lumbermen fled to Batum and returned next day provided with shot guns, rifles, automatics and supplies of ammunition. From then on, their days were spent in fighting off the "green guards" instead of cutting wood. Then one by one they deserted. No workmen could be found to replace them."

"Before the war", according to the "FURNITURE MANUFACTURER", "there were in the neighborhood of 18,000 small cabinet making or carpentering workshops in the Caucasus, employing about 127,000 people.

Ivy Covered?—Nay



Here is a white elm 100 feet high, and its trunk is completely covered with short slender branches from a distance of four feet above the ground to the top, where the large limbs branch out. These small branches are fully leaved and so closely resemble a vine that the remark: "Oh! look at that tall tree with the vine running clear up to the top," has been made hundreds of times. The small branches are the *natural* growth. Odd-shaped trees are quite common, but this growth is a curiosity.

—Julia I. Geisregen, Michigan, *in Farm Journal, 7th and Washington Square, Phila., Pa.*

The Green Sawyer

Gen. Marlborough Churchill was talking in Washington about the work of the intelligence department, of which he is the head.

"It is delicate work," Gen. Marlborough Churchill said, "work that requires experience. The inexperienced intelligence officer—and we had a lot of him during the war—is apt to be about as useful as the young college man in the lumber camp.

"This college man was set to work on a cross-saw with an old-stager. He sawed pretty well for an hour or so, and then his strength gave out. Still he kept on, or tried to keep on, but all of a sudden the old-stager stopped.

" 'Son,' he said, 'I don't mind yer ridin' on the saw, but if it's jest the same to you, I'll ast ye to keep your feet off the ground.' "

Fuel Values of Woods

The fuel value of any substance depends not alone upon the heating power of that substance, but upon rapidity of burning, ease of ignition, minimum smoke, and uniformity in heat. All these factors should be taken into account in considering the heat values of woods, a writer in the SCIENTIFIC AMERICAN tells us, and continuing further says that:

"A ton of coal may be taken as the equivalent in heating value of one cord of heavy wood, such as hickory, ash, oak, elm, beech, locust, birch, cherry, long-leaf pine, and hard maple. One and a half cords are required of short-leaf pine, Douglas fir, red gum, sycamore, soft maple, and western hemlock to equal a ton of coal, while in the case of cedar, cypress, catalpa, basswood, redwood, poplar, spruce, and white pine, two cords are equivalent to one ton of coal. Resin in wood gives twice as much heat as the wood itself, which accounts for the fact that the pines and firs have more heating power per ton then non-resinous wood."—*The Houghton Industrial Digest.*

Illustrations Acknowledged

For several months past we have been enabled to present to our readers scenes of unusual and historic trees in Pennsylvania, through the courtesy of Professor Joseph S. Illick, Chief, Office Research, Pennsylvania Department of Forestry.

"A Mighty Monarch" (white pine), and "One of the Largest White Oaks in Pennsylvania", which appeared in the January issue of the Crucible, as well as the "Pennsylvania Tree Nominated for the Hall of Fame", in the February issue, has attracted much attention.

The scenes — "Forest Fire" and "Students Planting Trees", in the February issue of the Crucible, and the "Camp Site" in this issue were taken from the Pennsylvania Forestry Department's book—"Pennsylvania Trees".

SAWDUST

APROPOS

"I think I should have named my baby 'Flannel'," said Mrs. Binks.

"Why?" asked Miss Jinks.

"Because," answered Mrs. Binks, "he shrinks from washing."

AMBIGUOUS

Tarzan Jones was sitting down to breakfast one morning when he was astounded to see in the paper an announcement of his own death.

He rang up friend Howard Smith at once. "Halloa, Smith!" he said, "Have you seen the announcement of my death in the paper?"

"Yes," replied Smith. "Where are you speaking from?"

HORTICULTURAL

A teacher in an Englewood school asked the other day. "How many kinds of flowers are there?"

Three pupils held up their hands. She chose one to reply.

"Well, Isidore, how many kinds of flowers are there?"

"Three, teacher."

"Indeed? And what are they?"

"Wild, tame an' collie."—*Philadelphia Lutheran.*

COMMERCIALLY SPEAKING

Japanese advertisers believe in a lavish use of similes.

"Step inside!" is the invocation of a big multiple shop in Tokio. "You will be welcomed as fondly as a ray of sunshine after a rainy day. Each one of our assistants is as amiable as a father seeking a husband for a dowerless daughter. Goods are dispatched to customers' houses with the rapidity of a shot from the cannon's mouth."

A grocer proclaims that his "superfine vinegar is more acid than the tongue of the most fiendish mother-in-law."—*Edinburgh Scotsman.*

HOW TO SAVE MONEY

Wife (at breakfast): "Could I have a little money for shopping today, dear?"

Husband: "Certainly. Would you rather have an old five or a new one?"

Wife: "A new one, of course."

Husband: "Here's the one—and I'm four dollars to the good!"—*Stray Shots.*

LOST

This little advertisement from the Florida Times-Union will be appreciated by many absent-minded people:

Mrs. M. L. Simons left suit case and child at some one house and unable to find where she left them, a little boy by the name of Dris Simon, her grandchild. Please let her know if anyone see it at 1202 W. Ashley.

A MYSTERY EXPLAINED.

It is said that Scotland is the only country in the world where Jews do not grow wealthy. The following story seems to explain the situation:

A wealthy Hebrew left all his property to his three sons on condition that each should place a hundred dollars in his coffin. After the funeral the three brothers compared notes. "I put in a hundred dollars in gold," said Isaac. "I put in the same amount in greenbacks," declared Jacob. Abraham was silent and the others demanded to know what he had deposited in the coffin. Finally he said: "Vell, I puts in a check for three hundred and took out der change."

That is the story in its original form. Dave Thaw, of the Coke Plant, has a sequel, however. He says that when Abraham had his bank book balanced he found that some one had cashed his check for $300. On investigation he found that the undertaker was a Scotchman.

The DISSTON CRUCIBLE

APRIL 1921

A List of What Disston Makes

And in these Saws, Tools, and Files is that quality found in

"The Saw Most Carpenters Use"

Back Saws
Band Saws for Wood and Metal

Bevels
Buck Saws
Butcher Saws and Blades
Cabinet Scrapers
Chisel Tooth Circular Saws
Circular Saws for Wood, Metal, and Slate
Compass Saws
Concave Saws, Circular
Cross-cut Saws
Cut-off Saws
Cylinder Saws
Dovetail Saws
Drag Saw Blades
Edger Saws
Files and Rasps
Filing Guides
Gang Saws

Gauges, Carpenters' Marking
Grooving Saws
Hack Saw Blades
Hack Saw Frames
Hand, Panel, and Rip Saws
Hedge Shears

Ice Saws
Inserted Tooth Circular Saws
Keyhole Saws
Kitchen Saws
Knives—Cane, Corn, Hedge
Knives—Circular—for Cork, Cloth, Leather, Paper, etc.
Knives—Machine
Levels—Carpenters' and Masons'
Lock Corner Cutters
Machetes
Mandrels
Metal-slitting Saws

Milling Saws for Metal
Mitre-box Saws
Mitre Rods
Nest of Saws
One-man Cross-cut Saws
Pattern Maker Saws
Plumbs and Levels
Plumber Saws
Post Hole Diggers
Pruning Saws
Rail Hack Saws
Re-saws
Saw Clamps and Filing Guides
Saw Gummers

Saw-sets
Saw Screws
Screw Drivers
Screw-slotting Saws
Scroll Saws
Segment Saws
Shingle Saws
Siding Saws
Slate Saws, Circular

Squares, Try and Mitre
Stair Builder Saws
Stave Saws
Straight Edges
Sugar Beet Knives
Swages
Tools for Repairing Saws
Tool Steel
Trowels—Brick, Plastering, Pointing, etc.
Veneering Saws
Webs—Turning, Felloe, etc.

This is a partial list. There are thousands of items in the complete Disston line.

HENRY DISSTON & SONS, Inc.

Philadelphia, U. S. A.

THE DISSTON CRUCIBLE

PRICE 10c PER COPY **$1.00 YEARLY IN ADVANCE**

TABLE OF CONTENTS

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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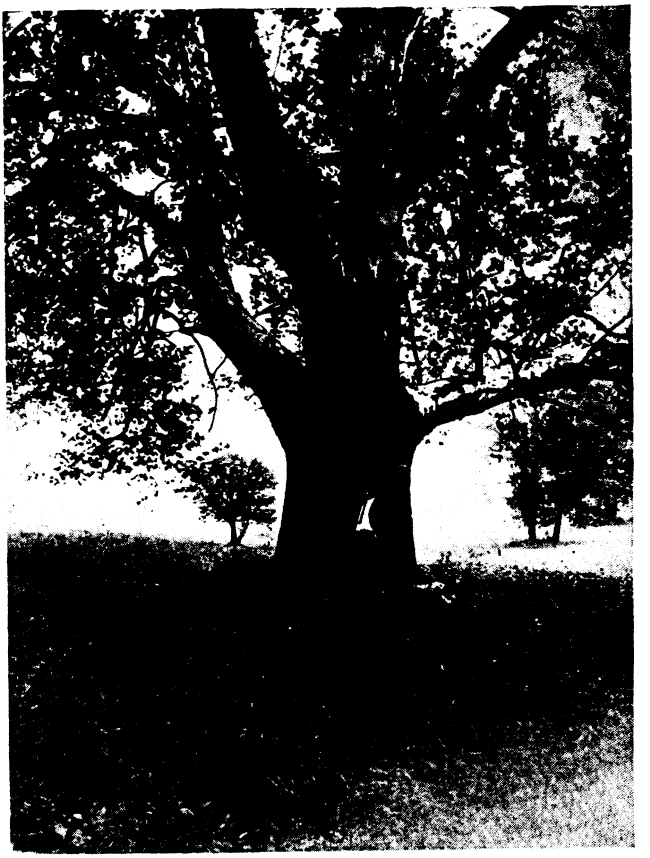
Canadian Works: - Toronto, Canada



A MASSIVE SYCAMORE

Over twenty-five feet in circumference at the base. Dauphin County, Pennsylvania.

By Courtesy of Penna. Dept. State Forestry

THE DISSTON CRUCIBLE
A MAGAZINE FOR THE MILLMAN

VOL. X APRIL, 1921 No. 3

Men and Merchandise

"Management and machinery can go only so far to insure efficient production. Back of each machine, and woven into every operation, is human nature, human merit, human wisdom."

Merchandise—the stuff we eat, and wear, and work with—is not the product of cold-blooded, changeless machines; it is the product of the folks back of these machines who guide and control them. Nothing can be made by a process that is so "automatic" that something of the character and ideals of the men back of it cannot be found in the product.

The House of Disston realizes the importance of "men" in keeping up the quality of its product. It is because of this, we so often speak of the service record of the men in our plant.

In the Disston factory

21	men	have served	50	to 60	years.
80	"	"	40	to 50	"
180	"	"	30	to 40	"
330	"	"	20	to 30	"
609	"	"	10	to 20	"

It is only reasonable to suppose that the ideals and experience of these men who have worked all their lives for the betterment of Disston products will be reflected in the quality of the finished Disston Saws, Tools, and Files.

Quality Tells

PARSONS PULP AND LUMBER COMPANY

Operates Mills at Ravensford, North Carolina and Horton, West Virginia

Both Mills Equipped With Disston Saws

THE Parsons Pulp and Lumber Company, whose general offices are located in the Finance Building, Philadelphia, Pa., operates two up-to-date Saw Mills, one of them at Ravensford, Swain County, N. C., the other at Horton, West Virginia.

The Ravensford Mill

is located on the Appalachian Railway. This road connects with the Southern Railway at Ela, North Carolina, thus affording the mill good transportation facilities.

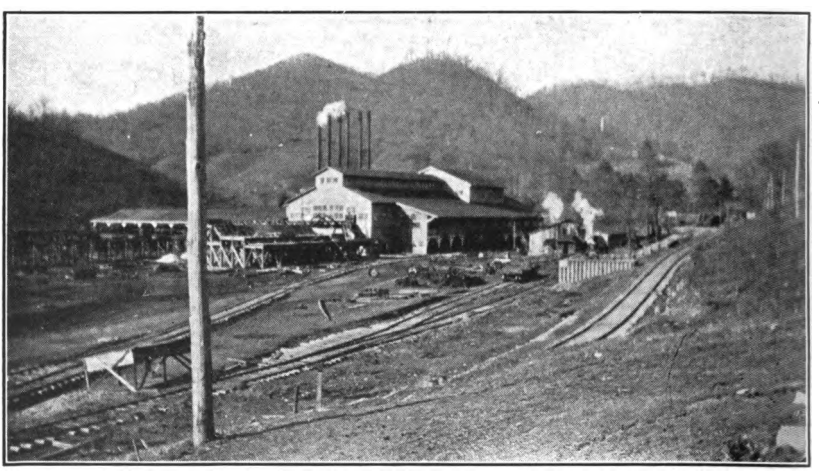
The tract upon which the mill is located, and from which the logs are secured to feed it, consists of approximately 35,000 acres of virgin timber, containing 600,000,000 feet of merchantable timber, about half of which is Spruce, and the balance hardwoods and Hemlock. The hardwood timber is of exceptional quality. The trees are very large and develop widths far above the average.

This tract was originally a part of the Qualla Indian Reserve, and the surrounding country is still occupied by several thousand Cherokee Indians.

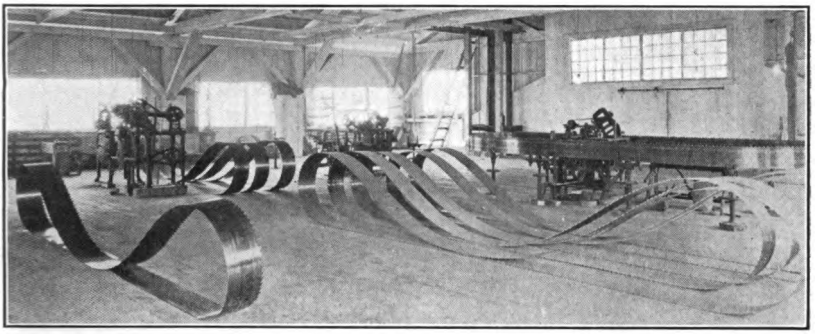
The equipment consists of two band mills, and a resaw. Recently a planing mill has been added, which gives ample facilities for resawing and surfacing stock to order.

The band saws in this mill are all Disston, and also practically all of the circular saws. The mill started sawing December, 1919, and since that time has been cutting Hardwood and Hemlock. Its capacity is approximately 85,000 feet hard and 110,000 feet soft woods.

Mr. James Green is foreman of the mill, and Mr. T. A. Johnson is the filer.



Parsons Pulp and Lumber Co.'s Mill, Ravensford, North Carolina.



Filing Room of the Parsons Pulp and Lumber Co's Mill, Ravensford, North Carolina

The Horton Plant

which has been in operation for a number of years, is located at Horton, West Virginia, on the Central West Virgina and Southern Railroad. Its equipment consist of one band mill, resaw, and a modern planing mill for resawing, surfacing and reworking lumber to order.

At present the mill is producing about equal quantities of Hemlock and Hardwoods, and also prepares Pulpwood for shipment to the company's pulp mill at Parsons, West Virginia.

In the Parsons Pulp and Lumber Co's Horton plant Disston Saws are used exclusively.

Strength of Southern Pine and Douglas Fir Compared

There is little difference between the strength of the Southern Pines and that of Douglas Fir from the Pacific Northwest, tests made at the United States Forest Products Laboratory show. True Longleaf Yellow Pine averages heavier, stronger, and tougher than Douglas Fir. True shortleaf pine averages heavier and tougher than the Fir, but is equal to it in strength as a beam or post. Loblolly Pine, though averaging heavier than the Fir, is somewhat weaker. The difference in strength between any of these pines and Douglas Fir, however, is not so great but that low density pieces of the one species are weaker than the average for the other species.

As far as strength properties are concerned, the choice between any two lots of Southern Pine and Douglas Fir will depend upon the grade and density of the timber composing each lot. The Rocky Mountain type of Douglas Fir averages considerably weaker than the Pacific Coast type.

Man a Tool-using Animal

"Man is a Tool-using Animal. Weak in himself, and of small stature, he stands on a basis, at most for the flattest-soled, of some half-square foot, insecurely enough; has to straddle out his legs lest the very wind supplant him. Feeblest of bipeds! Three quintals are a crushing load for him; the steer of the meadow tosses him aloft, like a waste rag. Nevertheless he can use Tools, can devise Tools: with these the granite mountain melts into light dust before him; he kneads glowing iron as if it were soft paste; seas are his smooth highway, winds and fire his unwearying steeds. Nowhere do you find him without Tools; without Tools he is nothing, with Tools he is all."—Carlyle: "Sartor Resartus," chapter V.

WALT MASONRY

By G. A. Slack

A sawyer hot was bawling—
"Who taught you how to file?
You surely missed your calling
by ten quarters of a mile.
Your saws run hot, they snake
a lot, the teeth are split,
they do not fit. And when those
blades begin to rattle I think
of some enormous battle.
You think you are a filer
great, but I can say you
are a fake."
The filer first was much
surprised, but soon became
quite dignified, and roared in
tones that terrified. "You saw
up knees, instead of trees. You
think a log is made of cheese
the way that carriage hits the
breeze. The carriage riders cling
like death, and half the time
they have no breath. They bow
their backs and bend their knees
and hang on like
fermented fleas. You must be
full of Jack Ass Brandy; a sober
man would be more handy.
Those saws were made for
cutting logs instead of spikes
and guides and dogs.
If we don't soon a sawyer
get, this old saw mill be
to let."

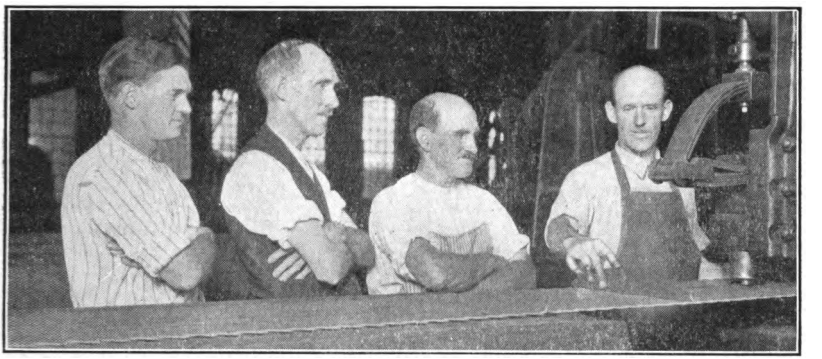
Forest wealth is community wealth and the suppression of forest fires is the first step to enable the public to reap the benefits that will result from a rational development of the forest resources.

Magnitude of the Lumber Industry

THE manufacture of lumber has attained the rank of the second largest manufacturing industry in America, because forest products—wood in all its countless forms—are absolutely essential to our daily life. Wood for shelter, wood for fuel, wood for implements, and weapons, wood for furniture, wood for vehicles of transportation on land and water—every moment of our lives, we are using necessities or conveniences of wood. From lead pencils to dwellings, from matches to railroad trestles, from tooth picks to giant factories, from shoe-pegs to ships, wood is constantly ministering to our needs.

It is impossible for the human mind to comprehend the magnitude of the lumber industry today. Only a vague understanding is conveyed by the statement that the total production of lumber in this country amounts to nearly 40,000,000,000 board feet annually — approximately 1,600,000 capacity carloads. Of this stupendous quantity of lumber, something like 15,000,000,000 board feet, or 660,000 carloads, is of one variety alone—Southern Pine, a most useful and most adaptable of woods. One-third of the total population of the South is directly or indirectly employed in the production and merchandising of Southern Pine lumber, and 5,400 saw mills were engaged in manufacturing that material last year. In addition to some 30,000 saw mills in the United States engaged in converting the raw material—sawlogs—into various forms, there are more than 75,000 kindred industries employed in converting saw mill products into more highly manufactured articles for innumerable uses.—*From Tree to Trade by Long-Bell.*

ONE OF THE REASONS FOR DISSTON QUALITY



These Four Brothers—Harry, Charles, William, and George Kinkead Have Aggregated 125 Years of Service for the House of Disston

Robert H. Kinkead, Father of These Men also Worked for Disston 54 Years

When Henry Disston was asked how he made such fine saws, he answered, "Good steel, and honest work."

While "honest work" covers almost every element entering the manufactured product, other than the raw material, yet it may be well to emphasize the element of skill; the inherent skill of men following in the work of their fathers and their grandfathers; skill developed by proper training and application; skill reduced to a science by many years of practical experience.

There is probably no other firm in the country that can boast of a larger number of long-term, skilled employees than the House of Disston. The Kinkead family is only one of many who has chosen the Disston Works as a desirable place to learn and ply their trade. As many as four generations of the same family have been on their pay roll at the same time. These men have had Disston quality impressed on them from childhood, until it has become their creed. These are the men who add stability to the works and maintain the high standard set by the founder. Hence the cause of Disston quality.

First Things in America

Pins were first made here in 1832.

The first daily was the *Penny Packet*, 1781.

The first Bible was printed in Germantown, by Dr. Saur, in 1743.

The first lightning rods were put up in 1752.

The first public lighting by electricty was in 1878.

The first theatre was built in Williamsburg, Virginia, 1752.

The first stove was invented and made by Benjamin Franklin, in 1741.

The first Disston saws were made in 1840.

PENNSYLVANIA'S LUMBER INDUSTRY—SIXTY YEARS AGO AND NOW

Williamsport, Lock Haven and Jersey Shore, Centers of Lumbering Activities Sixty Years Ago; Now the Industry is a Memory, Only, in These Sections

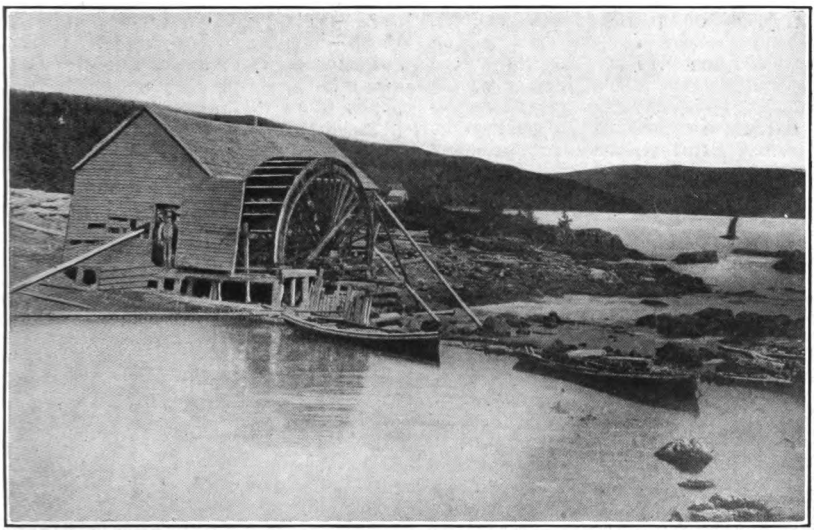
Virgin Forests Reduced to "Acres of Desolation"

MANY of us are familiar with a few at least, of the various local histories, issued for the most part years ago. These usually sombrely-bound volumes cover the history of several counties, a single county, or perhaps a town situated in one of the older settled portions of the Union. After narrating the long unwearying battle waged by our ancestors in winning for us an empire from the wilderness, the wild beast, and the savage, the history often briefly describes the wonderful state of progress and civilization attained by its subject at the time of publication, usually in the fifties. Such a book is J. F. Meginness' "History of the West Branch Valley of the Susquehanna"—1856.

In that year this valley was the heart of one of the greatest timber producing regions in the country and it is possible that some extracts from Meginness' book, descriptive of the lumber industry of that day, followed by recent accounts of the havoc wrought since in Pennsylvania by reckless methods of lumbering, of which we now see the folly and fortunately the cure, may prove of interest.

Says Meginness, "Muncy Creek,"

A Familiar Scene in Pennsylvania's Lumbering Centers in the "Balmy Days."



A Typical Pennsylvania Saw Mill in the Early Days

about three miles from its junction with the Susquehanna, separates into two branches, called Big and Little Muncy. Both branches extend into some of the best timber lands of the State, where numerous saw mills have been erected, and it is estimated by those capable of judging, that from 12 to 15 millions of feet of lumber are manufactured annually.

Williamsport is the center of extensive lumber trade, and the facilities for its manufacture in the vicinity are unrivaled. Within three miles of the borough are nine stream saw mills; and just above and within the borough limits, are two mammoth water mills, one containing 88 and the other 100 saws. The latter is capable of manufacturing 60,000 feet per day. Some idea of this heavy interest may be formed from the raw materials annually lodged in the boom, some 3 miles above the town. It is estimated that over 200,000 logs were lodged therein at the last spring freshet, and that to convey the same to several mills, manufacture and deposit it upon the bank of the canal ready for transportation, will give employment to 1000 men during the whole year. At the usual estimate of population this would give support to 5000 persons and produce from 40 to 50 millions feet of lumber for the market.

A large amount of lumber is manufactured annually on Larry's Creek. The number of saw mills on the creek and its tributaries amount to over 30. Several of them are driven by steam. The first sawmill was erected in 1785. All the lumber is hauled to the canal and piled there, where it is loaded into boats and conveyed to Baltimore, Philadelphia, and Reading. It is estimated that from 10 to 15 million feet are manufactured annually.

Two miles west of Jersey shore, we come to Phelp's Mills on Pine Creek. Operations were commenced here in 1847, and the following year a large saw mill was started. In the spring of 1865, the company put in operation a large steam saw mill for manufacturing boards, shingles, lath, palings, etc. The two mills number in aggregate, 64 gang and English saws, with 8 circulars. They are capable of making 8,000,000 feet of lumber per annum. This is the most extensive lumbering establishment on Pine Creek, and the

site is one of the best in the county.

Since the starting of their first mill in 1848, to the present time, they have sent 22,000,000 feet of lumber to the market. These works give employment to upwards of 70 men. One mile below this establishment is another large mill, owned by McEldry, Trump & Co. of Baltimore. They run about 38 saws, with a capacity of about 4,000,000 feet per annum. Pine Creek is a great lumbering region, and is

"The men who cut the trees and the men who sawed the logs into lumber have left. The country is the poorer because they have gone; for they were industrious, strong-armed, brave-hearted men."

dotted with saw mills. The total number on the Creek, and its various tributaries is about 134 and not less than 60,000,000 feet of lumber including boards and logs are run out to market annually. A few miles above the First Fork is another extensiye mill owned by Stoddard, Magraw & Company, with a run of 38 saws and a capacity of 4,000,000 feet per annum. There are other good mills on the stream of a less capacity.

Lock Haven in 1856

"There are now four large steam saw mills—exclusive of the one at Reed's Basin—in successful operation. There are also two large steam mills on the canal below Lock Haven, which depends upon the Boom, at the latter place, for their supplies, and are capable of manufacturing 5,000,000 feet per annum. For a hundred miles west of Lock Haven, there is but little tillable land along the West Branch, or its tributaries; but this mountainous district is well covered with a great variety of the finest timber. The principal business of the lumbering operations is transacted at Lock Haven. Immense quantities of timber are floated into the pool of the Dunnstown Dam, on which the town is located, by every flood. In consequence of the demand of rafting hands at such periods, and the comparative certainty of obtaining a market at or from this point, the rafts are usually tied up here until all or nearly all the lumber from above is brought down. Being at the head of the market, where

such immense quantities are landed on every flood, lumber dealers could name no better place for making advantageous purchases."

In 1856 the boom at Lock Haven was sold to a stock company and is now valued at $100,000. At some periods it contained nearly 200,000 saw logs—35 to 40 millions of feet of timber.

We will turn from these scenes of industry to a far different picture and endeavor to show by a few brief extracts from recent publications something of the present condition of lumber in Pennsylvania, incidentally demonstrating anew the truth of the old adage that one cannot "eat ones cake and have it," but that, nevertheless, the quota of confectionery may be assured by keeping the oven full of a maturing supply.

"Report on Senate Resolution 311" by the Forest Service, U. S. Department of Agriculture—1920, says in part, "Once practically covered with a heavy timber stand, Pennsylvania, for many years exported large quantities of lumber. In 1860 it stood first among the states in lumber production. As early as 1870, however, the stand of White Pine, the most valuable species in the State, and formerly one of its principal export woods, had diminished to such an extent that imports from Michigan began. The depletion of the White Pine was followed by an increasing cut of Hemlock and later of hard woods, and the State reached its maximum lumber production of 2440 million board feet in 1889. Today it occupies twentieth place in lumber production, and its annual cut of 530 million B. feet constitutes less than 2 per cent of the cut of the country.

Depletion in Pennsylvania has already progressed so far that the complete cessation of large scale logging operations, of which only a few are now left, may be anticipated within a decade. It has reached a point where the annual lumber production is only 60 board feet per capita, or about one-fifth of the average per capita consumption for the United States. The Pittsburgh district alone uses more lumber than is cut in the whole State. Williamsport which once had an annual output of 300,000,000 board feet of lumber, now has not a single saw mill. In those parts of the State where the forest constituted the sole resource, the trail of the lumber industry is marked by abandoned mills and practically deserted villages. The steady decrease in the amount of standing timber has been accompanied by a deteriation in quality. Virgin stands are practically gone; old-growth White Pine, for example, being reduced to some 10,000 acres, practically all in a single tract which will be cut out in the next five years. Nearly one-seventh of the State once richly wooded is said to be practically barren. Several counties that were once rich in forest and prosperous are now almost bankrupt because the timber is gone."

From a graphic pamphlet by Dr. Rothrock entitled "Areas of Desolation in Pa." we have but space for a short passage, speaking of his early recollections of 60 years back. Dr. Rothrock says, "From the mouth of the Sinnemahoning, northwest to the Allegheny River at Warren, 75 miles as the crow flies, was an almost unbroken forest. There was no house where the town of Kane now stands. Ridgway and Johnsonbury were just lifting their heads out of the woods. I walked from Clearfield to St. Mary's and thence to Smethport—60 miles, most of the way through glorious White Pine and Hemlock forests, of which hardly a vestige now remains. These forests are but a memory. Do not misunderstand me. I have no contention with the lumberman of those days. The timber was there. It was nature. It was thought to be needed as fast as it was cut. At least there was a market for it—and such timber! Soft White Pine, the cutting of which was a luxury; no knot to dull the knife or axe! Who could blame the purchaser for refusing all but the best, when it could be had at a reasonable rate. No one wanted inferior grades! The lumberman could hardly be expected to handle them at a loss to himself. There was so much White Pine that there was no market for Hemlock; when it (the Hemlock) was cut, the bark was stripped and sold

Continued on page 47

THE PHILIPPINES

THE Philippines are vastly richer in natural resources than both Cuba and Porto Rico combined," says the Commercial Agency of the Government of the Philippines at San Francisco. "The total area of the Philippines is about three times that of Cuba and almost thirty times that of Porto Rico. She is 7000 square miles larger than Great Britain, slightly smaller than Japan, and 5000 miles larger than Italy. The combined area of Belgium, Bulgaria, Denmark, Greece and the Netherlands, in Europe, is slightly larger than that of the Philippines, and the total area of the Central American countries of Nicaragua, Honduras, Costa Rica, and Salvador, is equal to that of the Philippine Islands."

The Philippine Bureau of Forestry in speaking of the great timber wealth of the Islands tells us that, "the virgin forests of the Philippines cover approximately 40,000 square miles, about equal to the area of the State of Kentucky. This is about one-third of the total area of the Archipelago. In addition, there are estimated to be about 20,000 square miles of second-growth forest which will yield large quantities of firewood and some small-sized timber. Taken together, the virgin and second-growth forests of the Philippines cover an area about equal to that of the State of New Mexico.

More than 99 per cent of the timber belongs to the Philippine Government and is under the administrative control of the Bureau of Forestry. Less than 1 per cent of the timber is held under sure title of private ownership. The Philippines possess a much greater supply of wood than will ever be used for local demands. The wood consumers of other countries can, therefore, find here a market that will furnish them a large and varied supply for practically all uses to which wood is put; large, because of the immense amount of certain widely useful species which can be obtained by the millions of board feet; varied, because the woods of few countries of equal size, if indeed any at all, can show a wider range of color, grain, hardness, strength, and other qualities demanded by special uses. It is no exaggeration to say that some species of wood can be found in the Philippine forests to suit almost any imaginable purpose the user may have in mind. Export timbers fall roughly into four principal classes: woods for interior finish and furniture, cabinet woods, woods for special uses, and heavy construction timbers."

Woods suitable for all these uses are found in great variety in the Islands. A brief description of some of the most important timbers includes 30 different kinds of trees. Among the publications of the Philippine Bureau of Forestry is a very valuable pamphlet, "Commercial Woods of the Philippines, Their Preparation and Uses." This work will doubtless long remain a principal authority on the subject.

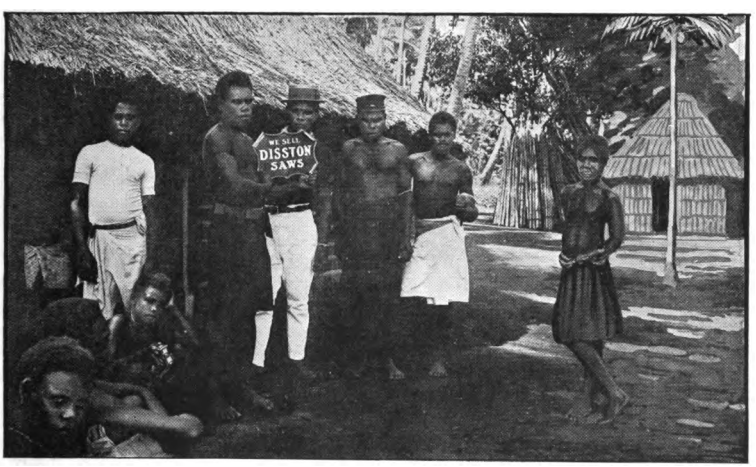
According to this book, "the commercial forests are found in Luzon, Mindoro, Samar, Leyte, Negros, Mindanao, Palawan, and numerous small islands; in fact, in all the principal islands of the archipelago, except Bohol and Cebu. The territory is often rough, but no more so, and generally less, than in some of the greatest lumbering regions of North

America. There are few large water courses, but no point anywhere, even in the largest islands, is more than 50 or 75 miles from tidewater, and the character of the country is rarely such as to present insuperable obstacles to the construction of railways.

Though the composition of the forests, from the botanist's point of view, is very complex, it is less so from the point of view of the forester, and still less from that of the lumberman. About three-fourths of the total volume of the virgin forest is composed principally of trees of the dipterocarp or Lauan family, which furnish all of the very abundant export timbers of the Islands. In these forests which contain stands ranging from 10,000 up to 50,000 feet B.M. per acre, 75 to 90 per cent of the total bulk belongs to a group of different botanical species that enter the market under about half a dozen trade names.

The methods of lumbering in pre-American days were very primitive. Lumbering on a large scale was unknown. Individual trees were selected, felled, stripped of bark and sapwood, or else squared, and the resulting poles or logs hauled out with teams of carabao (water buffalo). The hauling was done on crude carts or timber wheels, sledges or, perhaps in a majority of cases, by dragging the log over the ground with no more apparatus than an occasional skid or roller. The smaller operators still use these methods with very few improvements. Logging engines and railroads have been introduced only in the past ten years by a few of the largest operators. At present, boss loggers, superintendents of logging railways, sawyers and saw filers, and yard bosses are generally Americans. Track layers, locomotive and stationary engineers, fellers, skidders and loaders, setters, operators of edgers, trimmers, resaws, planers, and matchers, are all Filipinos; and they are beginning to learn such trades as sawing and saw filing, and otherwise to fit themselves for more exacting positions."

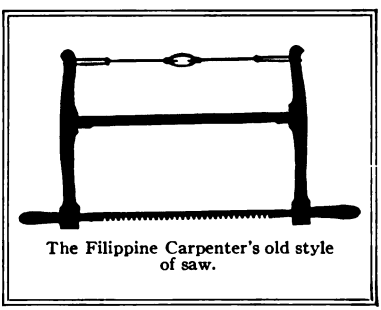
In its volume, *Trading With the Far East*, the Irving National Bank says of Philippine lumber: "The trees of the Philippines are rich in fine varieties of lumber. Of a forest area of more than 38 million acres, 25 million are nearly virgin. In them are hardwoods of enormous value, suitable for the finest cabinet work, for veneering and for artistic purposes. It has been estimated that the stand of merchantable timber is 200 billion board feet.



The sign held by the native "huskie" is evidence that the Disston Saws are favorites on the Islands.

Notwithstanding this, the islands, because of practical difficulties in using the timber commercially, import more lumber than they export. Lack of navigable streams hampers its transportation from the forest to the market."

The *Yearbook of the Philippine Islands*, published by the Philippine Chamber of Commerce is an elaborately illustrated volume containing a great deal of useful information in regard to the Islands. In this book, after quoting the timber cut from 1911 to 1918, it is said, "This timber output could be trebled and even quadrupled without exhausting the actual forest stand in several hundred years. The development of lumbering in the Philippines offers many advantages. The forest charges are almost nominal, ranging simply from 2 pesos to 10 pesos per 1000 feet, board measure, according to class. Logging and sawmill equipment and machinery are free of duty, if imported from the United States, and are charged with only 15 per cent if brought from other countries. As to fuel, sawmill waste can be utilized. Some coal deposits are present, and the government is developing several of them. Water power can be taken from streams in a number of places. There are several tracts of lumber which are accessible to the coasts. Considerable economies may be accomplished with the presence of all these advantages."



The Filippine Carpenter's old style of saw.

"At the present time there are ten modern sawmills using the latest machinery and thirty smaller mills which will gradually install logging machinery. There was practically nothing resembling a lumber schooner in the Islands; today ships equipped to handle lumber cargoes are gradually being acquired. With the assured increase in production and with an insatiable market at our doors, lumber schooners will undoubtedly become a fixed part of the transportation facilities. In connection with the increase in production many wood-using industires are bound to develop. Many industries using Philippine woods in foreign countries can be established here, for instance, the manufacture of veneered boxes for the rubber and tea trades alone, if supplied from the Philippines, would use up practically our present total annual production of sawn timber, and this box market is right at our doors. The market for cigar boxes in Manila alone cannot be supplied, and boxes are imported from Europe. The wood coming from the West Indies and Caribbean Islands to Europe, manufactured there and re-exported to the Philippines, can still compete with the local product because of the still primitive methods of manufacture here. This condition can be utilized to the advantage of the Islands by proper logging and manufacturing methods."

"Forty lumber mills operating in the Philippines have a total daily capacity of 648,000 board feet," states the *Trans-Pacific Magazine*. "This production is barely above the local demand, which is constantly increasing. The mills in operation are far from adequate to take care of the annual growth, aside from making inroads into the forests which are said to cover approximately one-third of the area of the archipelago."

Mr. Arthur F. Fischer, director of the Bureau of Forestry, Manila, is an authority on our subject and has written largely about it. In the January issue of the *Timberman* he tells us, "The production of lumber in the Philippines is growing. About 250,000,000 feet of lumber were cut in 1920. An increase may be expected in 1921. Eighty per cent of the operations on the Islands are in the hands of Americans, the remainder being divided

among Scotch, Japanese, Chinese and Filipinos. It is quite possible to increase the cut of timber in the Philippines to 500,000,000 feet annually and still not exceed the normal growth. The lumber finds a ready market on the Islands and in China, Japan, India, Europe, the United States, Australia and New Zealand. The demand increases steadily. Every known method of logging is employed from the simple contrivances of the natives to the high speed ground yarders, skyline and Lidgerwood systems. The tractor is beginning to be used with good results.

Touching on the subject of saws and sawmill methods in the Philippines the previously quoted *Commercial Woods of the Philippines* tells us, "Previous to the American occupation, there were in the Philippines only a few small water power and steam saw mills. Probably 99 per cent of all timber was whipsawn. In spite of the fact that there are now a number of large American steam saw mills, a very great amount of lumber is still sawn by hand, not only in those inaccessible parts of the provinces that machine-sawn lumber has not yet reached, but in Manilla itself. The most skillful sawyers as a rule, are Chinese. That they are still able to compete with machinery is due to two causes; First, that they can easily supply small lots of material in odd sizes for special jobs; and second, the extremely close utilization practiced by both sawyers and consumers. In the Filipino and Chinese hand-power sawmills, there is almost no waste except end trimmings and sawdust; extremely thin saws are used (the writer found in Chinese lumber yards whipsaws that cut a kerf of only 0.075, less than 1/13 of an inch, whereas the kerf of various vertical gang saws, band saws and circular saws ranged from 0.14 to over 0.3 of an inch) and slabs and edgings utilized to such an extent that the average yard rarely has any firewood for sale.

In the power sawmills, on the other hand, there has been up to the present, little or no utilization of slabs, edgings, and other so-called "waste." In very large part, of course, this is due to the fact that the industry is comparatively new, and channels have not yet been developed through which quantities of small-dimension stuff of special shapes and sizes can be disposed of. There is no doubt that, as the uses of Philippine woods become better known and as the lumbermen learn better to sort them out in the mill, many species will be used more closely than at present, both as to selection for special purposes and as to more complete utilization of the whole contents of the log.

Hand saws were little known and less used before the American occupation and even now more than nine-tenths of all saws used by Filipino and Chinese carpenters are frame saws with blades ranging from ½ to 3 centimeters in width. For the frames mangachapuy, narra, and yacal are commonly used. For the long whipsaws used in sawing logs, guijo and yacal are much used; occasionally a frame is seen with the central strut of Oregon pine, but the Chinese sawyers sometimes use such very heavy woods as bansalagin and dungon."

Pennsylvania Lumber Industry—Sixty Years Ago and Now

Continued from page 43

to the tanner, but the logs were left to bleach and rot where the tree fell. No end of timber; no end of prosperity. Those were great times!

But an end did come. Those hillsides—black with forest wealth, the State sold, timber and all, for 26⅔ cents an acre—are for the most part bare now. Fire has swept over them and destroyed the new growth, such as it was, and the snows of the winter and the rains of summer have washed the soil away, until many farms that were started where the forests stood have been abandoned because of the impoverished soil.

'The men who cut the trees and the men who sawed the logs into lumber have left. The country is the poorer because they have gone; for they were industrious, strong-armed, brave-hearted men.'

SAWDUST

THE BRITISH HOBO

The Lady—"So you're really one of the strikers?"

The Loafer—"Yus, lidy, I'm wot they call one o' the pioneers o' the movement. I went on strike twenty-three years ago, lidy, and I ain't never give in yet."—*Ex.*

POLITE HINT

Customer: "I say, do you ever play anything by request?"

Delighted Musician: "Certainly, sir."

Customer: "Then I wonder if you'd be so good as to play a game of dominoes until I've finished my lunch?"—*Ex.*

WANTED TO SAVE IT

"My hair is falling out," admitted the timid man to the druggist's assistant. "Can you recommend something to keep it in?"

"Certainly," replied the obliging young man, who had only recently left school. "Here is a nice cardboard box."—*Ex.*

MAGNETIC!

A young man from the country called on a certain great manufacturer in his workshop, and the man of metals and machinery picked up a powerful magnet and said:—"That magnet will draw 3 lb. of iron from a distance of two feet. There is no natural object on the face of the earth that has more power." "I dunno about that," said the young countryman thoughtfully. "I know a natural object, wrapped in muslin and frills, that is drawing me every Sunday evening over three miles of ploughed fields!"—*Hardware and Machinery.*

BABY'S WORDS

"Yes," remarked Billy, "baby can say some words quite well."

"How nice!" exclaimed his aunt. "And what words are they?"

"I don't know," confessed Billy. "I never heard any of them before!"—*Trade Union News.*

HARD TIMES

"The sausages you sent me had meat at one end and bread crumbs at the other," said the lady in the butcher shop.

"Yes, ma'am," replied the butcher; "these hard times it is very difficult to make both ends meat."—*Yonkers Statesman.*

A FAITHFUL HOUND

An Irishman wanted to sell a dog, but the prospective buyer was suspicious, and finally decided not to buy. The man then told him why he was so anxious to sell. "You see," he said, "I bought the dog and thrained him myself. I got him so he'd bark all the toime if a person stepped inside the gate, and thought I was safe from burglars. Then me woife wanted me to thrain him to carry bundles—and I did. If you put anything into his mouth, the spalpeen'd keep it there till someone took it away. Well, one night I woke up and heard someone in the next room. I got up and grabbed me gun. There were there, three of the blaygards and the dog."

"Didn't he bark?" interrupted the other.

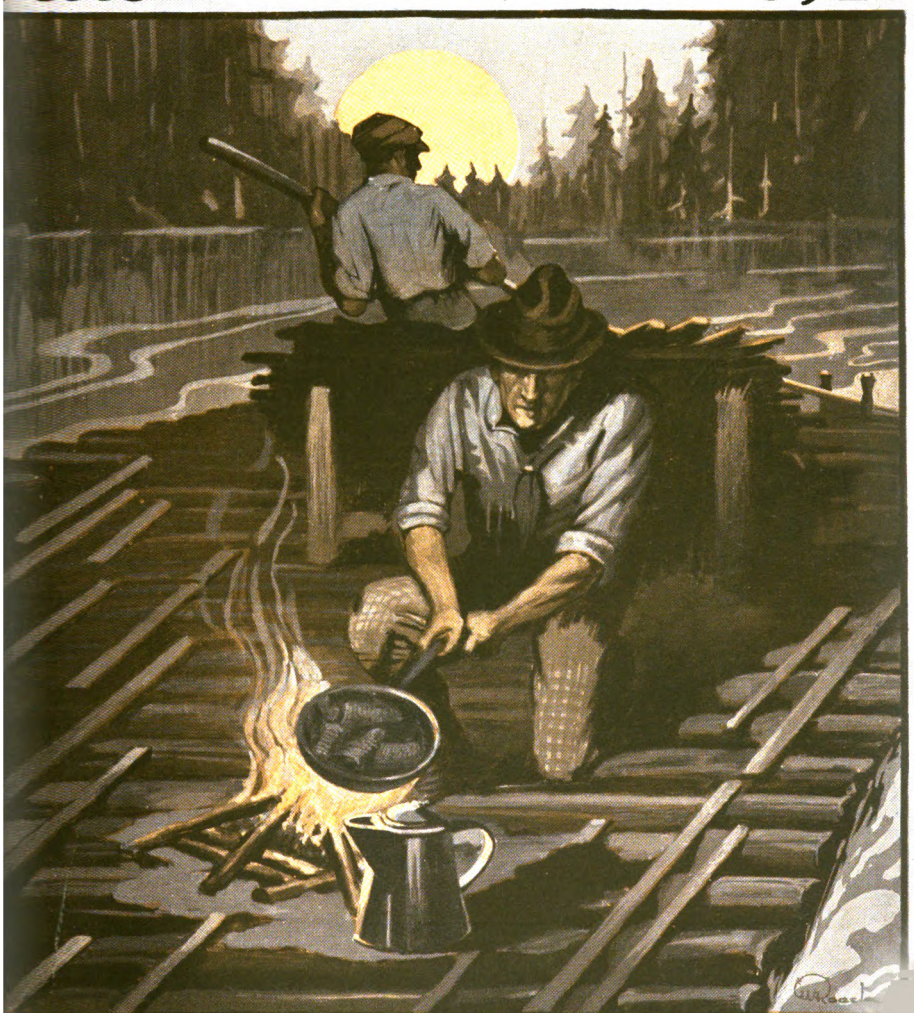
"Sorra a bark," was the reply, "he was too busy."

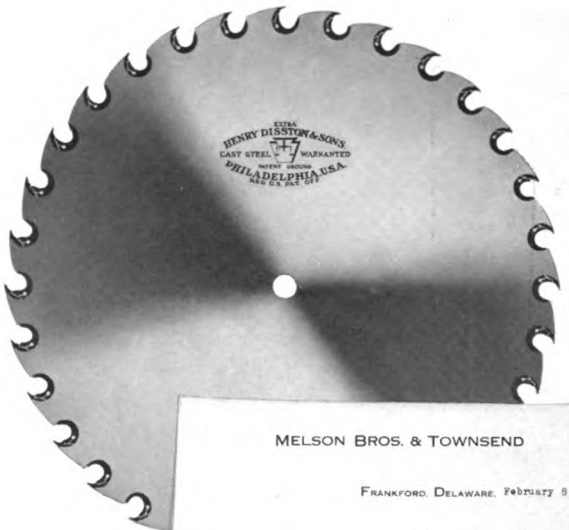
"Busy," asked the other, "what doing?"

"Carrying the lantern for the burglars," answered the Irishman.

The DISSTON CRUCIBLE

MAY 1921





MELSON BROS. & TOWNSEND

FRANKFORD, DELAWARE, February 8, 1921

Messrs. Henry Disston & Sons, Inc.,
Philadelphia, Pa.
Gentlemen:-

I feel that we owe you this brief acknowledgement of the merit of your saws. We have been in the lumber business for sixty years and have used your saws exclusively, and we have never had a bad one yet. They have given perfect satisfaction. We are running four (4) of your saws at present and one of them has been running twenty-one years and is a good saw now.

Melson Bros. & Townsend,
Per - William H. Melson,
Frankford, Delaware.

Perfect Satisfaction For *Sixty* Years!

THE DISSTON CRUCIBLE

PRICE 10c PER COPY **$1.00 YEARLY IN ADVANCE**

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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.; New York; Boston, Mass.: Cincinnati, Ohio; Seattle, Wash.; Portland, Ore.; New Orleans, La.; Memphis, Tenn.; San Francisco, Cal.; Bangor, Me.; Sydney, Aus.; Vancouver, B. C.
Canadian Works: - Toronto, Canada

OUR SEATTLE BRANCH WAS ESTABLISHED IN FEBRUARY, 1909

Carries Large and Well-Assorted Stock of the Saws, Saw Tools, and Files, Required by Mills in That Territory

Has First-Class Repair Shop Operated by Skilled Workmen; also Spacious Sales Rooms

IN February of the year 1909, Henry Disston and Sons established a Branch House in Seattle, Washington, under their own name and their own management. Previous to that date the business of Henry Disston and Sons on the West Coast had been conducted through the California Saw Works, whose headquarters were in San Francisco, California, with established branches in Portland, Oregon, and Seattle, Washington.

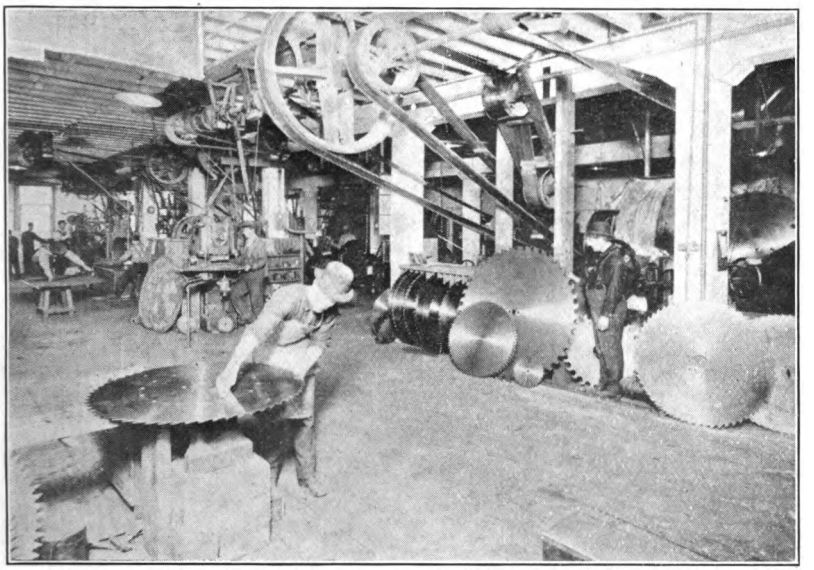
About this time the House of Disston decided the field demanded more attention on their part than could possibly be given through a second party. They, therefore, made an arrangement with the California Saw Works and took over Oregon, Washington, Idaho, and Montana territory. This arrangement was made amicably, so that under it the California Saw Works retired as saw factors from this upper territory, and confined their saw distribution to California and adjacent territory to the south. The city of Seattle very naturally became headquarters in the Northern territory for Henry Disston and Sons, Inc., with a branch house at Portland, Oregon. The Seattle office is located on the corner of Occidental Avenue and Jackson Street.

Mr. D. W. Jenkins was sent out from Philadelphia as General Manager for the Coast, and has managed the Branch ever since.

Skilled workmen are employed in a first class repair shop. This shop also carries a full stock of saw plates in blank form, and any manufacturing emergency that may arise can be taken care of. In fact the Branch at Seattle has almost everything that is necessary in a complete saw factory. Also, the shop is equipped for making and tempering Planer Knives and Bits.

Seattle Branch, Henry Disston & Sons, Inc.

The territory covered by the Seattle house consists of the State of Washington on the west side of the Cascade Mountains, from Willapa Harbor



Section of Shop, Seattle Branch, Henry Disston & Sons, Inc.

to the British Columbia line north, and south and east to Idaho and Montana.

Mr. Jenkins calls our West Coast branches, "rapid service" branches—and he and his salesmen work hard to live up to the name. Any mill in Seattle's territory will find our branch a live-wire organization conducted by men who are anxious to give real service in supplying the needs of users of Disston products.

Losing Wood-Using Industries

The accessible supply of raw material for the wood-products industries of the Empire State has become so nearly exhausted by the rapid disappearance of the forests that many manufacturers are scrapping their plants and prosperous towns in some parts of the state are losing their vitality on account of the discontinuance of these establishments.

To relieve this situation, to some extent at least, the New York State College of Forestry, co-operating with the United States Forest Service, is making a survey of the wood-using industries and the remaining available sources of supplies of raw material in the state.

Because of the lack of information, about the raw material needed, and which in many cases is still procurable in the state, particularly beech, birch and maple, extensive purchases have been made elsewhere, and there has been heavy loss on account of the excessive freight costs on shipments of distant lumber. The investigation shows that freight expenditures of $10,000 to $15,000 are often made in securing pine from the South, gum from the Mississippi Valley, and hardwood from the West.

Appreciating that this survey is being made to assist them in finding cheaper and closer sources of supply than they have had in the recent past, the manufacturers are making prompt response to the request for statistics of their establishments and require-

Continued on Page 56

DISSTON CROSS-CUT SAW SUPPLANTS THE AXE IN NEWFOUNDLAND FORESTS

Until Recently there were Sixty-five Camps Located on the Red Indian Lake, and Victoria River, Employing 2000 Men who used Axes Exclusively in Felling Trees

Saw Now Does Work of Axe in One-third Less Time

IN these days of modern invention and progressive methods it seems almost unbelievable that until about one year ago, there were located on the Red Indian Lake, Victoria River, and Harpoon Brook, Newfoundland, sixty-five lumber camps, employing 2000 men, in which not a single cross-cut saw was used for felling trees.

But when one considers the remarkable skill of the Newfoundland axemen, and the large number of trees felled by them in a day, it is little wonder that the Lumber Companies were satisfied with their work, and that the men themselves were not in a hurry to part with a tool in the use of which they had become expert, through years of continual experience.

Mr. J. W. MacKenzie, of Henry Disston & Sons, Ltd., Toronto Office, as he appeared in the lumber camps.

The House of Disston felt certain that, even against the competition of these expert axemen, Disston Cross-cut Saws would greatly increase production and cut down expenses. So Mr. J. W. MacKenzie, of the Toronto Branch, was delegated to Newfoundland to introduce modern Disston Cross-cut Saws to the lumbermen in these camps.

After a long trip by railway and steamship, Mr. MacKenzie reached Millertown, on the Red Indian Lake, logging headquarters of the Anglo-Newfoundland Development Co. Here he was met by Mr. H. S. Crowe, who manages forty-five camps for the Company, and who kindly entertained Mr. MacKenzie in his own home, during his stay of about six weeks in this section, as there were no hotels or boarding houses in the town.

Mr. MacKenzie was conveyed by horse cart and boat to the various camps, where he received a hearty welcome and courteous treatment by the lumbermen. They were quite anxious to see the saws at work, and readily fell in with Mr. Mac's plan to prove that the saw was superior to the axe in felling trees.

A crew of five men were selected to use axes during the morning hours, then the same crew would substitute the saw in the afternoon.

The result surprised the lumbermen, and were most gratifying to Mr. MacKenzie.

While the men were experts in wielding the axe and inexperienced in handling cross-cut saws, yet, in the same time and with less energy, they did one-third more work with the saw, and also eliminated the 7% waste caused by the axe.

After these tests, and an explanation of the design, material, temper, and

workmanship of Disston Saws, the Company and lumbermen considered that it was to their mutual benefit to adopt the more effective tool, and now each camp is equipped with two sets of Disston Cross-cut Saws.

After the Saws had been in use about four weeks, the first installment of them was sent to headquarters to be resharpened. Mr. MacKenzie then set about to instruct a man in the art of filing. He coached him for about ten days. During this time the man developed quite some skill and could file a saw satisfactorily. This man has since developed two other filers, and now the A. N. D. Co. has filing rooms at Harmsworth, Harpoon Brook, and Castigan Lake.

Mr. H. S. Crowe, Manager at Millertown for the Anglo-Newfoundland Development Company, on his way to the logging camps.

Mr. MacKenzie greatly appreciates the courtesy shown by the Company officials and men in the Camps, during his stay among them, and, through the CRUCIBLE wishes to thank all of them, especially Messrs. Crowe, Morgan, Sparks, Kelly and Gilmore.

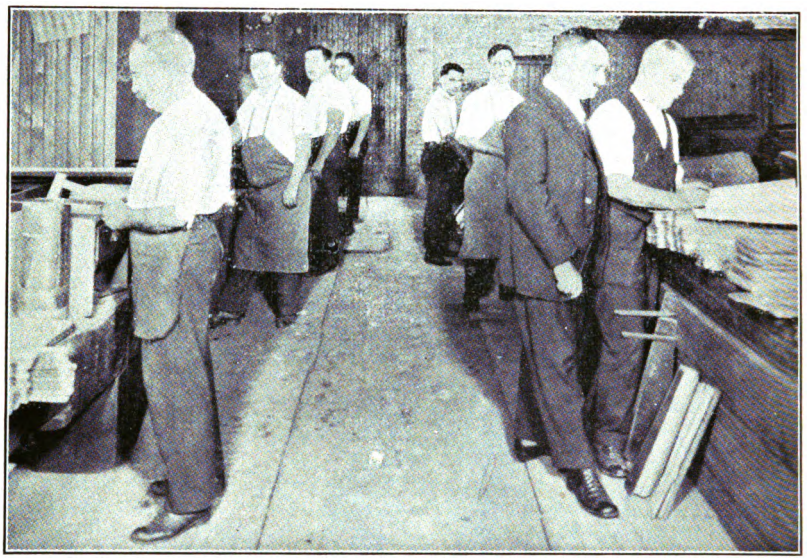
Be Careful with Fire While in Forests

The danger from forest fires cannot be eliminated without the co-operation of every citizen of the U. S.

The inherent principal of efficient fire protection is quick and accurate location of all fires started from whatsoever cause.

Isaac Collimore, the "smiling" cook with plate and knife. The saw is a Disston one-man Cross-cut; each A. N. D. Co. Camp is equipped with one.

ANOTHER REASON FOR DISSTON QUALITY



Three Brothers—John, George, and James Arnold, and Their Sons, Have Been Disston Saw-Makers for an Aggregate of 256 Years

WHEN one considers that there is no trade which requires more skill and personal judgment than saw-making, the old saying, "that it takes seven years to make a saw-maker," seems well founded. Even after seven years of careful training and practical experience, there frequently arise problems and conditions which only skill and mature judgment can master.

In the Arnold families we have nine men who have plied the saw-making trade for the House of Disston more than twice the stipulated seven years, with the exception of the youngest Arnold, and he has passed his eleventh year at the trade. (One of the Arnold men was not present when above picture was made.)

The length of service of these men range from 11 years to 53 years—an average of 28½ years.

The Arnold family is only one of the many Disston families, and only a few of the hundreds of Disston mechanics who have from ten to sixty years to their credit at the saw-making trade.

Visitors who have been through the plant were impressed with the many grey-haired men in every department, and also with the intense interest these men take in their work.

These men started in youth to make saws and have worked at their trade, honestly, and intelligently ever since, and they always strive with jealous care, as do also the younger saw-makers, to maintain the quality and workmanship which has made Disston Saws the standard of the industry **for the past 81 years.**

PHILADELPHIA BUSINESS DIRECTORY—SEVENTY-ONE YEARS AGO

IT may be predicted that if a copy of one of our bulky Business Directories survives to the year 1992, it will be viewed by our descendants of that distant day with the same mixture of curiosity and amusement with which we of the present examine a diminutive volume, "Bywater's Philadelphia Business Directory" for 1850, from which we propose to extract a few items regarding the lumber and related industries of that day.

Before doing this we may recall that in 1850 Zachary Taylor was President of the United States, soon to be succeeded owing to his untimely death, by the Vice-President, Millard Fillmore. In the cabinet, Philadelphia had a representative in Wm. M. Meredith, Secretary of the Treasury. The name of Meredith has lately been resurrected in rather a peculiar way. Mr. Meredith, a man of very careful and methodical habits, preserved all of his voluminous correspondence; this great mass of letters was recently discovered in the attic of an old house on Walnut Street, and, aside from the interest of their contents, the letters were of even more absorbing interest to the stamp collector, due to the exceedingly rare, and in many cases, unique stamps affixed to them.

The very modest figure of $64,704,893.71 covered the debt of the United States, while Philadelphia acknowledged an indebtedness of $3,449,800. Philadelphia's Mayor, Joel Jones, was assisted in upholding the laws by four High Constables, two Special Constables, four Captains of the Watch, four Lieutenants, four Clerks of the Markets, and thirty-four day and two hundred and four night policemen.

In 1850 the House of Disston had been established 10 years.

Telegraph companies bore the prefix of "Magnetic" and in Philadelphia, the railroads were still supplemented or eked out by a long list of stages to places near at hand and towns as far distant as Bethlehem and Hazelton.

Like the dealers and tradesmen in the cities of the Orient who confine themselves, each guild to a separate street or quarter, every jobber listed was to be found ready for business on Commerce Street, a condition which continues in a measure to the present day. There is a list of 110 retail hardware dealers. There are four "tool stores" listed separately; two of these dealt in saddler and shoe awls, but C. Hammond, 29 Commerce, sold hammers and hatchets; and Johnson and Conaway, saws, which they are previously listed as manufacturing also.

The classification "wood" apparently included the wholesale lumber dealers of whom there were 34, all located on the river front. "Lumber" comprised the retail merchants of the more finished article, and there were 61 of them scattered throughout the city.

Of Steam Sawing and Planing Mills including those sawing stone, there were 19 only.

The list of "Carpenters" contains about 100 names of individuals and firms, doubtless all of whom we would now call "Builders."

The cabinet makers numbered 79; chair dealers and manufacturers 50; coopers and gaugers (of whom 4 were named Cooper), 59; and packing box makers, 13 respectively. These trades conclude all that our Directory contains of those engaged in the lumber and wood-using industries in 1850, but we may be allowed to express an antiquarian interest in the manufacturers of "Botanic Medicines", the cuppers and bleeders, and the makers of Daguerreotype portraits and other businesses of an old time flavor. Also to speculate if the proprietors of "Vinegar Stores" and "Needle Stores" dealt in no other commodities. Or to congratulate the solitary "Bow Maker", the "Herb Store;" proprietor, or the man who operated the very singular combination of "Shower Bath and Swing," on the pleasing lack of competition in their respective businesses.

SAWDUST

SHE KNEW THE SYMPTOMS

"Madam," announced the new maid, "your husband is lying unconscious in the reception hall, with a large box beside him and crushing a paper in his hand."

"Ah," cried her mistress in ecstacy, "my new hat has come."—*Exc.*

A CASE OF RECIPROCITY

Kitty, aged four, had been naughty and her father had had to administer vigorous correction before going to business. That an impression had been made was apparent when, on his return from business in the evening, Kitty called up stairs with frigid politeness: "Mother, your husband's home."—*Argonaut.*

ESSAY ON THE WELL

A well is a deep, narrow hole, shoved into the ground until the bottom gets wet. There are several kinds of wells, but the ones that give pure water are best. A well always has a pump attachment run by hand, foot, gas engine or windmill. In some places they use cisterns for wells. Wells have come into greater demand since July 1, 1919, than they ever were before. Some wells are like some people—they need encouragement. In the case of wells this is called priming, but in the case of people it isn't.

"Well" is also a word used in conversation to mean the speaker is searchin' for somethin' to say next. When he hasn't got a ghost of an idea, but has to say somethin', he says: "W—e—l—l."

Once a doctor on a rush call fell in a well. He arrived, very late, to make his call, and the irate patient told him that from henceforth and forever he should "tend to the sick and let the well alone."

WILL GRANDDAD PLEASE EXPLAIN?

A little girl who had been beseiging her grandfather with an endless succession of questions during the evening had still one more question to ask before she went to bed. "Granddad," she said, "were you in the ark?" "Why, no," he exclaimed smilingly. "Then," she said, regarding him with innocent wonder, "why weren't you drowned?"

PROFUGHSLY U-U-SE

"There isn't much I don't know about the English language," boasted a young graduate to my friend Palmer Holmes, Manager Lalance & Grosjean Manufacturing Company, Chicago, Illinois.

"I'll test you," friend Palmer picked him up quickly. "I'll dictate a paragraph to you."

With an assured air the boaster seized his pencil, but his jaw dropped as he heard:

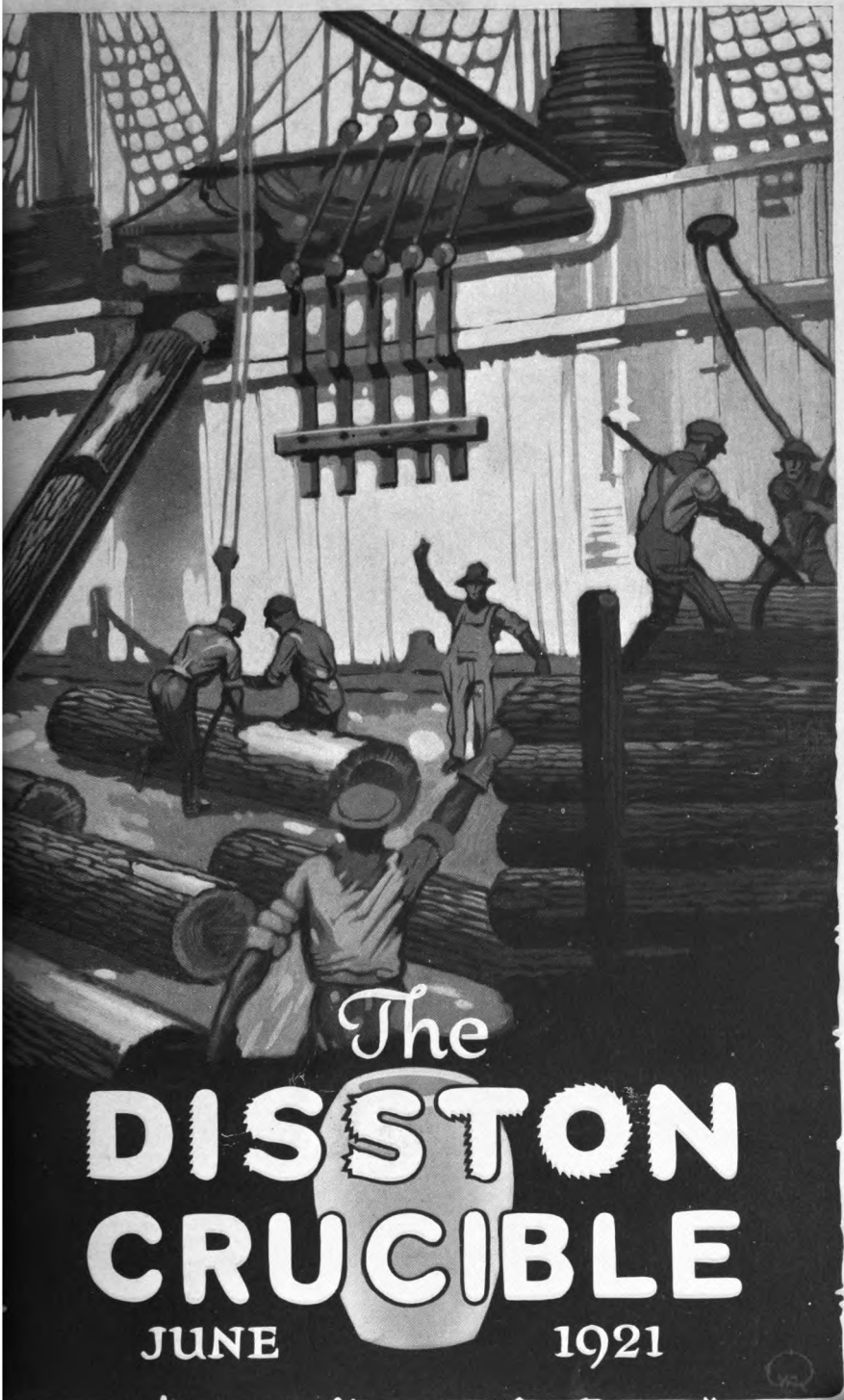
"As Hugh Hughes was hewing a yule log from a yew tree a man dressed in clothes of a dark hue came up to Hugh and said: 'Have you seen my ewes?'

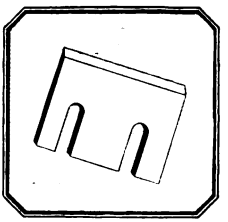
" 'If you will wait until I hew this yew tree I will go with you anywhere in Europe to look for your ewes'," said Hugh.

Losing Wood-Using Industries

Continued from Page 51

ments. With the co-operation of these manufacturers the college of forestry and the forest service expect to establish closer contact between the owner of growing woodlands and the user of raw material, thus preventing failure of the market for woodland products in the farming regions.—*The Southern Lumberman.*





Hog Knives that are Made to Stand Up to the Work

The important thing required of a hog knife is—*strength*. It is unusual strength and toughness that has made Disston Hog Knives popular in so many mills. They can be depended on. They are made of a special Disston Steel. They are especially hardened and tempered for this particular work.

Disston Hog Knives are made of solid or laid steel to fit all styles of machines. In the laid steel knives, the steel face is fastened in the back with the Disston Dove-Tail Weld which makes the knife absolutely rigid and fast, and at the same time allows for use of more of the steel cutting edge.

If you have never used Disston Hog Knives, a trial order will demonstrate to you the advantages of Disston Quality Knives in *your* mill.

DISSTON

SAWS TOOLS FILES

DISSTON CRUCIBLE

A MAGAZINE FOR MILLMEN

VOL X. JUNE, 1921 No. 5

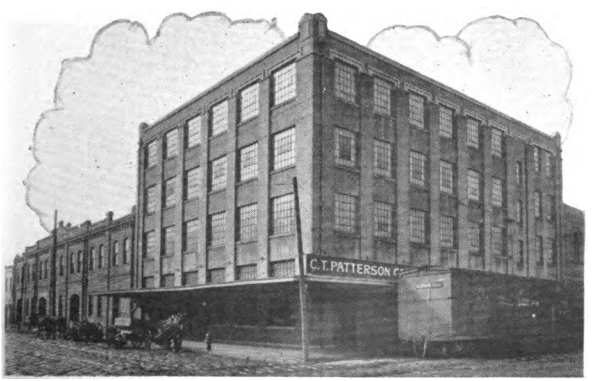
THE DISSTON NEW ORLEANS BRANCH

Established September, 1893. Conducted by the C. T. Patterson Company, Ltd., since 1898.

Carries a Full Line of Saws—Band, Circular, Mill, Drag, Gang, Metal, Hack; also Files.

THE New Orleans branch of Henry Disston & Sons was opened in September, 1893 and was continued as Henry Disston & Sons, of New Orleans, until December 1, 1898. At that time the C. T. Patterson Company was organized by Mr. Charles T. Patterson, President, and Wendell P. Simpson, Secretary and Treasurer. The Disston New Orleans branch was then merged into the C. T. Patterson Company, but has been operated ever since as a practical branch of Henry Disston & Sons, for the distribution of mill goods, such as band saws, circular saws, mill saws, drag and gang saws, metal cutting saws, hack saws, and files.

The offices and warehouses are located at Julia and Tchoupitoulas Streets in the center of the business district, not far from the wharves on the Mississippi River.



The Disston New Orleans Branch, conducted by the C. T. Patterson Co., Ltd.

This branch serves the timber section of the Gulf States as far east as the Appalachicola River and carries a complete stock of saws of all kinds, suitable for saw mills and for the woods operations.

A well trained corps of salesmen visit, approximately once or twice a month, every saw mill, large and small,

in this section, and a great many Disston saws are distributed through the C. T. Patterson Company, Ltd.

Since the death of Mr. C. T. Patterson in 1915, this business has been owned and managed by Mr. Wendell P. Simpson, President, and Mr. Robert E. Kelleher, Secretary and Treasurer.

The wide experience of these gentlemen in the mill line, and particularly in the distribution of saws of all kinds; the care and attention given to every order, and the quality of service rendered by this house has placed them high in the estimation of saw mill men throughout that country. We can confidently say, that no order in that section for a saw of any kind is ever placed without the claims of the Disston quality being first considered.

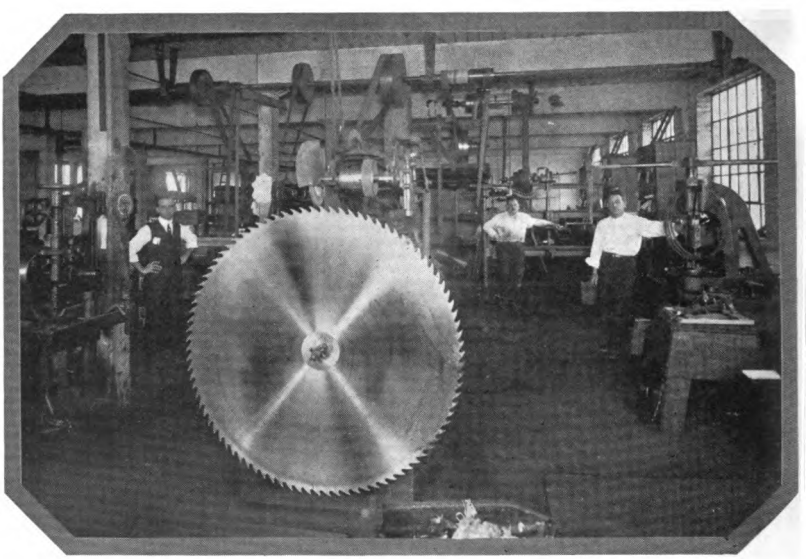
The C. T. Patterson Company recently purchased a large warehouse, in addition to their present extensive quarters, which will enable them to carry still greater stocks for the accommodation of the saw mill public and this additional warehouse they expect to put into service sometime during the current year.

Every salesman on the force has been chosen for his knowledge of saw mill requirements, and many of them have been on the force for a great many years.

The C. T. Patterson Company also maintains a special department for the handling of saw mill machinery of all kinds, and saw mill machine shop equipment. They also carry a very complete line of Disston Tool Steel, for all saw mill purposes, including nigger bar steel and tong steel, which they sell in quantities, so that the C. T. Patterson Company is fitted to supply and give the promptest service on any of the Disston products that go into the equipment of a saw mill.

Our illustrations show the building containing the office and warehouse and also a glimpse of their saw shop, in which they take care of all ordinary repairs of circular saws and narrow bands.

"Service" is the watch-word of this branch, and we are certain that our friends among the mill men will agree that our New Orleans branch, in its present hands, is most efficiently managed.

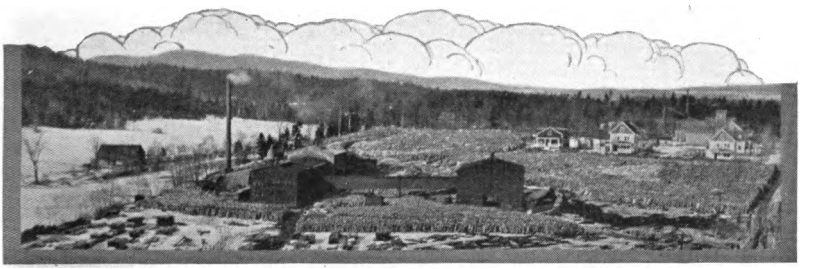


Section of Shop, New Orleans Branch, conducted by the C. T. Patterson Company, Ltd.

CLOTHES-PIN FACTORY OF THE BERST-FORSTER-DIXFIELD CO., AT DIXFIELD, MAINE

This Firm Manufactures Clothes Pins, Toothpicks, Butter Dishes and Wooden Novelties.

Their Plants are Equipped with Disston Saws. Have 5000 to 6000 Cords of Hardwood in their Yards.



Clothes-Pin Factory of the Berst-Forster-Dixfield Co., at Dixfield, Maine.

THE above is a photograph of the clothes-pin factory of the Berst-Forster-Dixfield Co. at Dixfield, Maine, and shows their stock of lumber on hand at the present time, between 5000 and 6000 cords of hard wood, which will be later manufactured into clothes-pins. The Berst-Forster-Dixfield Co. are manufacturers of clothes-pins, toothpicks, and butter dishes, also wooden novelties of several kinds. Besides the clothes-pin factory shown in the photograph, they have a toothpick factory also at Dixfield. This company in the fall of 1919 acquired the Dixfield Toothpick Co. and the Forster Manufacturing Company. These companies formerly operated these same plants at Dixfield. Both of the mills at Dixfield are running full time, with full crews, and no shut downs. The headquarters of this company are in New York City.

These plants are the largest of this kind in the State of Maine, and are located in two of Maine's most beautiful villages. The plant at Dixfield is the larger and is under the management of F. W. Smith, Assistant Manager, and W. I. Heckman, Supt. The latter has worked at the manufacture of clothes pins, since he was a mere boy, with the Dodge Clothespin Company, at Lincoln, N. H. Mr. George P. Stanley is Superintendent of the toothpick factory, and Mr. N. B. Woodson, Manager of the Oakland plant. The Oakland plant is new, and is one of the most modern plants in the United States. Both of these plants are equipped with Disston Saws, both bands and circulars. They also have a large plant at Colgcut, Minnesota.

DAVE W. BARTRAN

Filer for the

Wausau Southern Lumber Company, Laurel, Miss.

We here see our friend, Mr. Dave W. Bartran, holding the first two saw hammers used by him for tensioning saws. They are priceless possessions and nothing could induce Dave to part with them. It was in Michigan, that pioneer lumbering state, which has turned into the world so many good mill men, where his father operated a circular saw mill, (moved down from Ontario when Dave was a boy,) that his first work as a saw filer began.

This was about 1885—long before band saws had been inrtoduced into that section, for in those early days the band mill was only being experimented with in a limited way.

The popular saw mill at that time used circular saws, 72″ in diameter, with a top saw to boot, and the high feeds which kept the big rotary rushing through the white pine logs, kept the filer on his toes to tension the saws properly to stand the strain.

The veteran Disston salesman and saw maker—our own Sam Southern, of our Chicago branch, was the first man to give Dave fundamental ideas of proper expansion of metals by hammering, to give a saw the requisite tension to make it stand up to the work and cut rapidly.

These ideas Dave put into practical daily use and adding to them the results of his own experience, as times and conditions changed, put Dave into the first rank of saw filers, where he knows, and does not merely think, what attention a saw needs to make it give good service.

His varied experience has carried him through leading mills in Wisconsin, Louisiana and Mississippi, for he has filed the fastest and best mills in these states, and it has finally landed him in charge of the filing room in the mill of the Wausau Southern Lumber Co. at Laurel, Miss., where above photograph was taken.

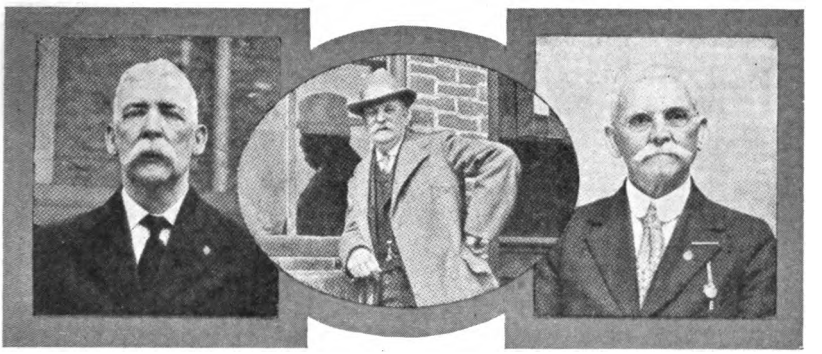
He exhibits with just pride Disston saws which have been worn from 13″ to 7¼″ without rebrazing and without a crack. As a matter of fact, Dave tells us that he has in the last eight years worn out fifty-three 13″ Disston saws in the same manner.

Dave Bartran has two sons who are successful filers, and who are following carefully in their father's footsteps, both being trained by him—Clarence D. Bartran is filer for the Ingram-Day Lumber Co., Lyman, Miss., and Roy H. Bartran, filer for the Sumrall Mill of the J. J. Newman Lumber Company.

Our friend combines with his qualifications of a high grade saw filer a genial disposition that has made him known to almost every man, woman and child in Laurel, Miss. It gives us pleasure to congratulate him on his success in the saw filing line.

THREE REASONS FOR DISSTON QUALITY

Venerable Brass Screw Makers Who Have Aggregated One Hundred and Fifty Years of Faithful Service for the House of Disston



William D. King.
Worked 52 years.
Is now 68 years old.

John Mansfield.
Worked 48 years.
Is now 64 years old.

Isaac P. H. King.
Worked 50 years.
Is now 64 years old.

These Men Were Master Mechanics before the U. S. Centennial—1876.

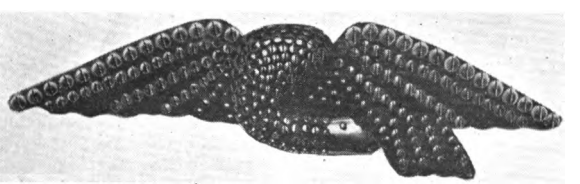
At this time, when plans are being considered for appropriate observance of the Sesqui-Centennial of the United States of America, it is interesting to know that the three men shown above were working for the House of Disston, and were already master mechanics before the celebration of the Centennial of the U. S. in Philadelphia, 1876.

Even in those early days the Disston Saw had attained world-wide fame and the imposing display of these saws at the Centennial Exhibition was one of the big attractions.

Immediately above the hand saw section of this display there "soared' an American Eagle, made of brass screws inserted in wood, indicating Disston Saw pre-eminence. The screws in the appropriate design were made by the Messrs. King, Mansfield and their fellow workmen.

It is interesting to note the pride these "youngsters" take in their work; a pride that is characteristic of the Disston workmen—a pride that is father of the long-time service and high efficiency of so many Disston mechanics.

1876



1921

This eagle design appeared above the Disston display at the Centennial Exhibition in Philadelphia 1876. The bright spots are brass screw heads. The screws were made by Disston mechanics, including the three men shown above.

Alaska Separate Forest District

Tongass and Chugach National Forests, Comprising 25,000,000 Acres, Included.

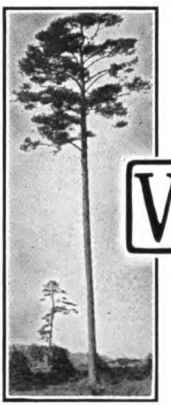
Alaska was made a separate district of the Forest Service on January 1st, having previously been a part of the sixth district, with Washington and Oregon, under the supervision of a district forester with headquarters at Portland, Oregon. The new district, the eighth, will include the Tongass National Forest covering an area of 20,000,000 acres in Southeastern Alaska and the Chugach National Forest, with an area of 5,000,000 acres in southwestern Alaska. This area would make 20 national forests of the size of those found within the states of Oregon and Washington.

On July 1st the headquarters will be moved from Portland to Juneau, and Charles Flory, who has been superintendent for several years, will be district forester. He is now in Juneau making arrangements for moving his office, and later will go to Portland, Oregon, to confer with Col. W. B. Greeley, Chief Forester, who is taking an active interest in the National Forest Service in Alaska.—*"The Christian Science Monitor," May* 19, 1921.

Spruce

Spruce at one time was employed only for the meanest uses of wood; railroad ties, fence posts; framework, and paper pulp. Along comes the war, and suddenly it is sought after by corps of experts for use in aeroplane construction. It was found to be light and strong, easy to glue and not unduly affected by climatic conditions. The trees rise to great height with little taper, thus giving the great lengths required for the wing spans. *Overnight the humble spruce was crowned king of lumber.—Ex.*

Exercise the same care with fire in the woods that you would take in your own home or in the city.



U. S. Virgin Forests Are Being Rapidly Depleted

VIRGIN forests of the United States at one time covered 822 millionacres,according to the American Forestry Association. They are now shrunk to one-sixth of that area. All classes of forest land, including culled, burned, and cut-over areas, now aggregate 463 million acres, or a little more than one-half of our original forests. Of the forest land remaining and not utilized for farming or any other purpose, approximately 81 million acres have been so severely cut and burned as to become an unproductive waste. This area is equivalent to the combined forests of Germany, Holland, Denmark, Belgium, France, Switzerland, Spain and Portugal.

There is consumed or destroyed every year, 56 billion board feet of material of saw timber size. The total yearly consumption of all classes of timber is about 28 billion cubic feet. Our depleted forests are growing less than one-fourth of this amount. The United States is not only cutting heavily into its remaining virgin forests every year, but is also using up the smaller material, upon which the future supply of saw timber depends, much more rapidly than it is being replaced. The problem is one for the present as well as for the future.

The Night Before Payday

Christopher Morley

Twas the night before payday, and all through my jeans I hunted in vain for the price of some beans. Not a quarter was stirring, not even a jit; the kale was off duty, milled edges had quit. Forward, turn forward, O Time, in thy flight—Make it tomorrow, just for tonight!

HORSE SENSE

If you work for a man, in heaven's name work for him. If he pays wages that supply you your bread and butter, work for him, speak well of him, think well of him, stand by him, and stand by the institution he represents. I think if I worked for a man, I would work for him. I would not work for him a part of his time, but all of his time, I would give an undivided service or none. If put to a pinch, an ounce of loyalty is worth a pound of cleverness. If you must vilify, condemn and eternally disparage, why, resign your position, and when you are outside, damn to your heart's content. But, I pray you, so long as you are part of an institution, do not condemn it. Not that you will injure the institution—not that—but when you disparage the concern of which you are a part, you disparge yourself. And don't forget, "I forgot" won't do in business.—Elbert Hubbard.

"Tall Oaks From Little Acorns Grow."

At the close of the first chapel exercises after the opening of Admiral Peary's College, Bowdoin, Brunswick, Maine, George Thorndike, one of the students, stuck an acorn in the ground and, half in jest, remarked that a great tree would flourish there long after he was gone and forgotten. This happened in September, 1802, and though Thorndike passed away in 1811, he is not forgotten, for the oak has been named after him and under it shade the graduates receive their iplomas to this day.

"The man who once so wisely said,
Be sure you're right, then go ahead;
Might likewise have added this, to-wit:
Be sure you're wrong before you quit."

"Never forget that if we fail to provide for our own needs in forest products no one else will do it for us. The very solemn fact is that if we fail to do so, neither in the States of the Union, nor elsewhere in the whole world shall we be able to secure what we need."—*Governor William C. Sproul.*

A Sign Board erected on the Bedford, Pa., State Forest. An effective way the Pennsylvania State Forest Association has of welcoming the Public to the state forests, and at the same time warning them against the forests' worst enemy—fire.

SAWDUST

FELLOW ARTISTS

Mr. Pedalbass—I am a musician. I give recitals on the pipe organ.

Mr. Proudfather—That so I wish you could meet my son. He plays the mouth organ in vaudeville. You organists might be able to help each other.—*Columbia State.*

STRICTLY COMMERICAL

"We have a mummy in this museum," said the guide, "that has had some wheat in his hand since the days of the Pharoahs."

"Well," rejoined Mr. Dustin Stax, "I'd advise him not to hold on any longer. Wheat'll never be any higher."—*Washington Star.*

THEY WILL DO IT.

A safety director tells this one apropos the difficulty of teaching some people to observe the rudimentary principles of "safety first".

Wash White got a job in a sawmill. The boss put him in charge of a buzz saw, showed him how the saw worked warned him of its dangers, and then went away.

Wash was fascinated by the shining whirling saw. But was it, truly as sharp and terrible as the boss had said? To test it he touched it gently with his finger. Bzz! and the finger was no more.

As Wash was ruefully tying up his hand in his bandana the boss came back.

"Hullo there, Washington. What's the matter?"

"Buzz saw done cut off my finger, sah."

"How the dickens did that happen?"

"Ah dunno, sah," said Wash. "Ah just touched de darn contraption like this an'—Fo' de land's sake, der's anudder gone!"

THAT'S WHAT IT'S FOR

Lady—"What is that peculiar odor I get from that field?"

Farmer—"That's fertilizer."

Lady—"Oh, for the land's sake."

Farmer—"Yes, lady."

SOME WARM RETORT

"I don't like these photos at all," he said. "I look like like an ape."

But the photographer was above the base human passion of anger.

He favored the dissatisfied one with a glance of lofty disdain and said, as he turned back to his work:

"You should have thought of that before you had them taken."

NON-UNION.

While an Irishman was gazing in the window of a Toronto book store, the following sign caught his eye:"Dickens's works all this week for only $4."

"The divil he does," exclaimed Pat in disgust. "The dirty scab."

Aunty explaining an illustrated Bible story: "Lot was told to take his wife and daughters and flee. There's Lot; there is his wife; and there are his daughters, a small way behind."

The Small Nephew: "Yes, but where is the flea?"

CAUGHT

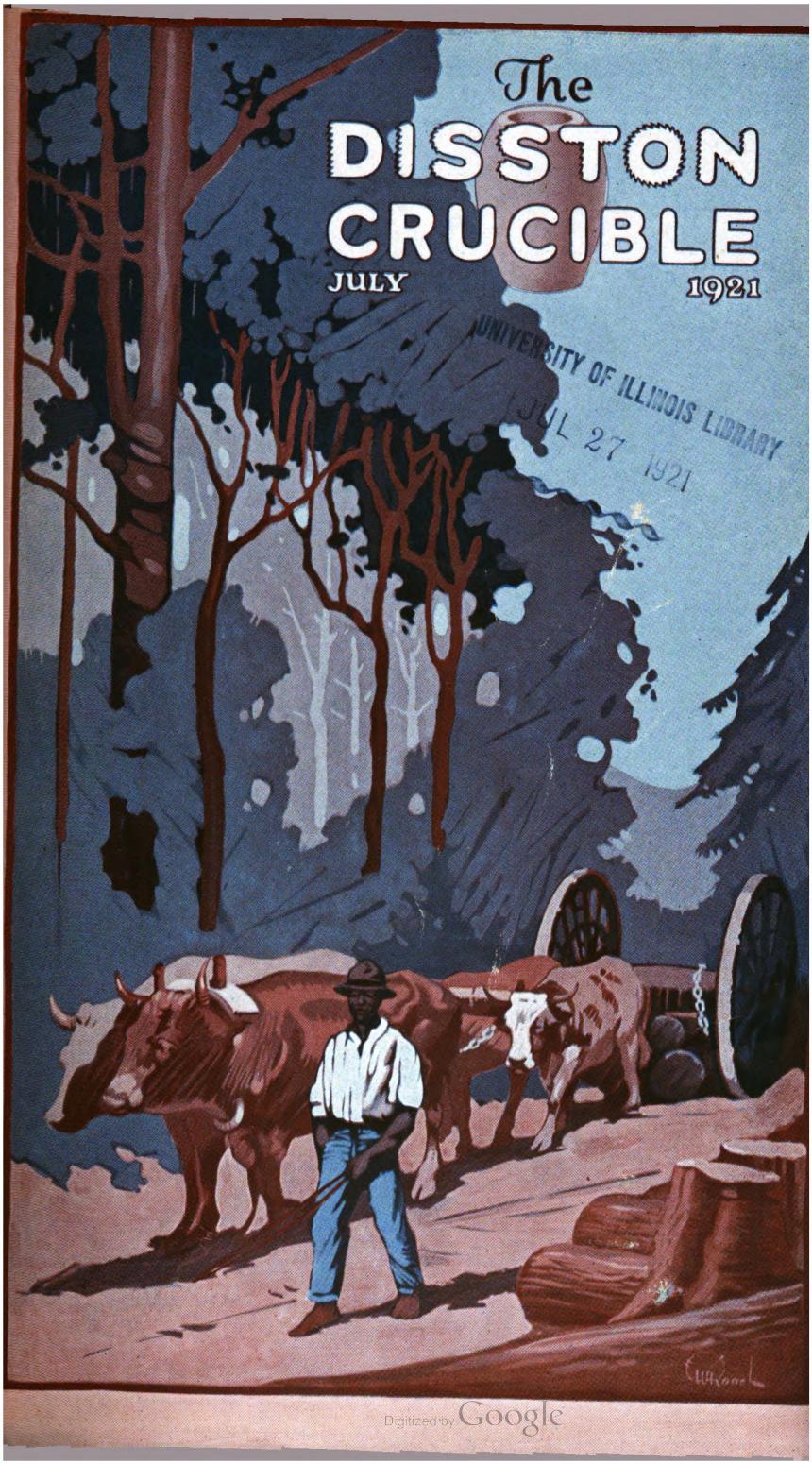
"Emma," asked father, "do you practice on the piano while I am away at work?"

"Yes, father, every day," replied the girl.

"How long did you practice today "

"Three hours."

"Well, I'm glad to hear that you are so regular, and the next time you practice be sure to unlock the piano; here is the key. I locked the instrument last week and have been carrying the key in my pocket ever since."—*Ex.*



DISSTON

FILES

THE MOST DURABLE FILE ON THE MARKET

DISSTON FILES cut readily and quickly, and leave a smooth surface.

We make the steel from which Disston Files are produced, and therefore, secure uniformity of quality. In our own works we use annually 35,000 dozen Disston Files. We know what a good file should do, and make the Disston Files so they will do it.

REG. U.S. PAT. OFF.

HENRY DISSTON & SONS, Inc.
Philadelphia, U. S. A.

DISSTON CRUCIBLE

A MAGAZINE FOR MILLMEN

VOL X. JULY, 1921 No. 6

MR. E. F. COOPER HAS FATAL ATTACK OF ACUTE INDIGESTION, FRIDAY, JUNE 10, 1921

Was Mill Goods Sales Manager for Henry Disston and Sons, Inc.; with the Company Almost Fifty Years.

Death came suddenly and unexpectedly to Mr. E. F. Cooper, aged 63 years, Mill Goods Sales Manager for Henry Disston and Sons, Inc., about eight o'clock Friday Morning, June 10th, 1921. Acute indigestion was the cause.

The evening before, Mr. Cooper had attended the banquet of the Twenty-fourth National Hardwood Lumber Association, held in the Bellevue Stratford Hotel.

Mr. E. F. Cooper

To avoid a long trip home after the banquet, and an early start the following morning so as to be on hand for the last day's session of the convention, in which he was much interested, Mr. Cooper engaged a room at the Manufacturers' Club. Immediately upon arising Friday morning, he must have felt destressed, as he telephoned for a doctor. When the doctor arrived he found Mr. Cooper partly dressed, sitting in a chair, past human aid.

Mr. Cooper was a man of strong physique and had unusual energy and vitality for one his age. He was apparently in good health and spirits during the banquet. Before retiring he held a telephone conversation with his wife, to whom he gave no indication of feeling ill. Consequently his death was quite a shock to his relatives and friends.

Mr. Cooper started to work for the House of Disston at the old plant, Front and Laurel Streets, Philadelphia, Pa., October 1, 1871, as an apprentice to his father, at the millwright trade.

About this time Henry Disston purchased the first six acres of ground of the present site of the Saw, Tool, Steel, and File Works. Upon this tract was an old saw mill. Mr. Edward W. Cooper, father of Mr. E. F. Cooper,

was designated to rebuild and operate this mill, primarily for the purpose of making tests and experimenting with Circular Saws made by Disston. It was, as a lad, in this mill, assisting his father, that Mr. Cooper started his successful career as a mill man.

Both his grandfather and father were mill men. Besides having the benefit of the mill experience of his forbears, Mr. Cooper gained practical knowledge and useful ideas from visiting men, who came from all parts of the country to witness saw tests in the old mill.

Ambitious to perfect his knowledge of the business, and possessed of a capacity to grasp and absorb detail, Mr. Cooper set about to familiarize himself with all the saws, tools, and machines of the progressive lumberman.

For the next six years he engaged in sawmilling and millwright work in various states. Then for five years he traveled, selling the Disston line. At this time Mr. Cooper entered the mill business, and spent two years with his own mill. Then he returned to the Disston organization in 1892. He became Northern Mill Goods Sales Manager, and was appointed Mill Goods Sales Manager in 1908.

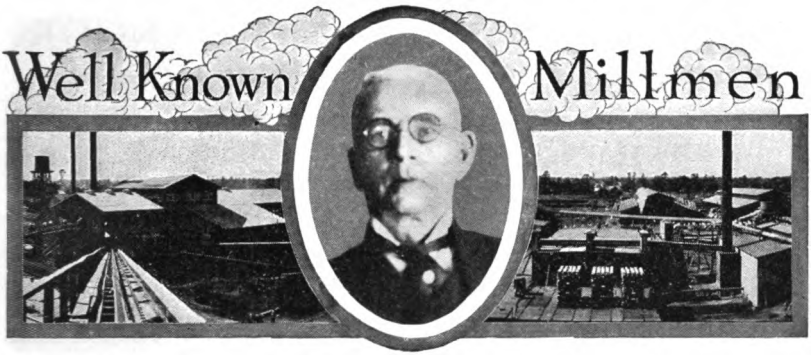
Always keeping abreast of the times, Mr. Cooper was considered one of the most thorough mill men of the day, and he will be a great loss, not only to the House of Disston, but to the trade in general.

That loss is small, however, compared to the feeling of the host of his friends. His amiable character, his integrity and justice in dealings—both business and personal—his ability to give himself in service won for him the respect and admiration of those who came in close contact with him.

He is survived by his wife, two sisters —Mrs. Burkholder, Mrs. Carter, both of Philadelphia, and three brothers, John L. and Charles H., both Disston Salesmen, and Geo. M., assistant superintendent in charge of the Disston Band Saw Department.

Funeral service was held at his late residence, Wayne Avenue, Germantown, Monday, June 13, 1921. Interment in Magnolia Cemetery.

America's youngest Lumber Jacks, working near Summer Camp of The New York State College of Forestry at Cranberry Lake, N. Y. Boy at left, Almeron P. Belanger, aged 11; boy at right, Ronald H. Belanger, aged 9. These two boys do every day the work of an adult man. Here they are cutting up a big spruce for pulp wood.—*American Forestry.*



JOHN D. C. McCLURE
Gates Lumber Company, Wilmar, Ark.

TWENTY-THREE years ago when John D. C. McClure came to Wilmar, Ark., the mill of the Gates Lumber Company was surrounded by one of the finest forests of yellow pine in that section, and logs three feet in diameter were as common as grasshoppers in summer.

The mill at that time was a rotary saw mill, combined with a gang, and had a daily capacity of 100,000 feet.

About nine years ago the old mill burned and a band mill was then erected in its place. Now that pine is becoming scarcer, the company is going over its old cuttings and bringing in the oak trees that they left in the original logging operations. About half of the capacity of the mill is now devoted to the manufacture of hardwood.

Mr. McClure began his career as a saw filer in the spring of 1869, at the age of 16. He began with C. Lamb & Son, at Clinton, Iowa, at a time when the science of saw filing was in its infancy.

The band saw in those days was unknown and unthought of for cutting logs. The 66-inch circular saws which were kept in order with a hammer and a swage bar, slabbed for the gang and cut "bill-stuff." It was a record day when 64,000 feet of white pine was cut at the "Bon Ton" mill. The boys celebrated the event by placing a couple of new brooms at the top of the mill, and disposing of several kegs of beer that night.

The first band mill filed by Mr. McClure carried 8-inch saws, which were run on wooden wheels. This was about 1880; Mr. McClure at that time was a full fledged filer, progressive in his ideas, and readily accepted the new method of sawing.

Some of the early experiments of Mr. Henry Disston on band saws were carried on in the Lamb mill, at Clinton, so it is evident Mr. McClure has been in close touch with the progress made in saw milling for fifty-two years. During all of this period Disston saws, both circular and band, have been Mr. McClure's favorites. He has from time to time tried out saws of other makes, but he assures us that he always has found that the Disston saw gave the best results, with the least effort. Today the mill at Wilmar is equipped with Disston saws throughout. The machinery, including the new billet mill, is thoroughly up-to-date, which is evidence that Mr. McClure is keeping abreast of the times.

He is now acting in the capacity of superintendent of manufacturing, after having filed saws for fifty years.

Mr. McClure is still hale and hearty, ready for a good laugh or to tell a good story, and we hope he has before him many years of active service.

Good-will means more business—more profits, less trouble—more happiness.—H. L. Doherty.

DISSTON BOSTON AND BANGOR BRANCHES ARE OPERATED BY R. B. McKIM CO., INC.

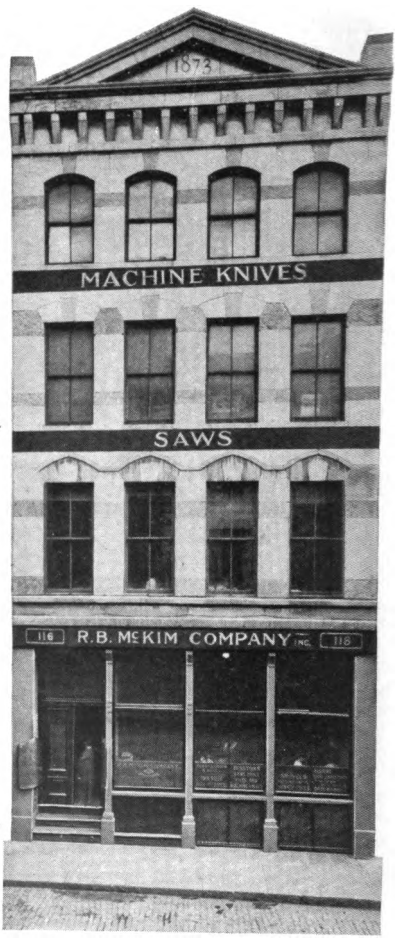
Carry a Complete Line of Saws and Tools for the Wood-working and Metal Trades.

OUR New England Branches are operated by R. B. McKim Company, Incorporated, one at 116-118 Pearl Street, Boston, Mass., the other at 120-122 Exchange Street, Bangor, Maine.

Previous to the Boston fire, November 9, 1872, our products were handled by Stratton, Corey & Company, at 74 Federal Street, Boston, who were then the leading hardware jobbers in New England. The first shipment of Disston Hand Saws in New England was made to these people, and it will be interesting to know that the young man in charge of this shipment is still in active business, being president of a large hardware and mill supply house located at Amesbury, Mass.

Stratton, Corey & Company retired from business after the Boston fire. At that time, Mr. H. O. Stratton, senior member of the firm, was given the agency for our mill saw products in the New England states, and portion of New York state. Mr. Stratton opened headquarters at 33 Oliver Street, Boston, and successive locations have been 159 Franklin Street, 224 Franklin Street, 112 Pearl Street. In 1897 the business was moved to the present location.

Mr. Robert B. McKim associated himself with Mr. Stratton in 1886 as bookkeeper, and later as traveling salesman. At the death of the latter, July 1894, he bought the business and continued it until 1909, when the business was incorporated. Mr. McKim served as president until his death, November 1, 1914. He was succeeded by Mr. Charles D. Woodman, who came to the business in 1892, as traveling salesman. Mr. Woodman continued in this position until his death, May 10, 1920.



Disston Boston Branch,
operated by R. B. McKim Co., Inc.

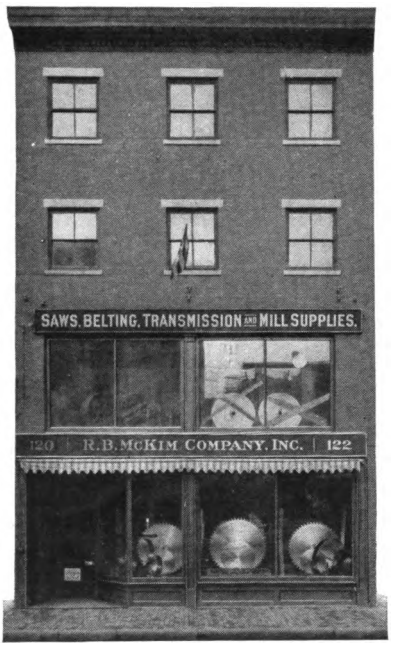
The present officers of the Company are J. A. McKay, president, and Albert E. Martin, secretary and treasurer, who have been connected with the business for thirty years, and W. H. Banks, vice-president, who came to the company in 1905.

The history of the Boston and Bangor branches spans a period of fifty-four years, dating back to 1867. It was then Gibson, Kimball & Sanford established a saw business at Bangor, under the name of the Dirigo Saw Works, and the business was continued until 1874, when the plant was lost by fire.

After the fire the business was carried on by R. W. Kimball, until his death in 1885. At this time, Mr. Abner Taylor, who was connected with Mr. Kimball as salesman, bought the business. He was given the agency for our products in the northern Maine territory.

After representing the House of Disston for thirty-one years, Mr. Taylor sold the business, in 1916, to the R. B. McKim Company, Inc. Both Boston and Bangor Branches carry a complete line of our saws and tools for the wood-working and metal working trades in their territories.

The Boston and Bangor Branches are well organized and efficiently managed, and the twelve wide awake, energetic salesmen who cover the New England territory thoroughly, give proper attention to every interest of the trade.



Disston Bangor Branch,
operated by R. B. McKim Co., Inc.

I BELIEVE

I believe in the stuff I am handing out, in the firm I am working for, in my ability to get results.

I believe in working, not weeping; in boosting, not knocking; and in the pleasure of my job.

I believe that a man gets what he honestly goes after, that one deed done today is worth two deeds tomorrow, and that no man is "down and out" until he has lost faith in himself.

I believe in today and the work I am doing; in tomorrow and the work I hope to do, and the sure reward the future holds.

I believe in courtesy, kindness, in generosity, in good cheer, in friendship and in honest competition.

I believe there is something doing somewhere, for every man ready to do it.

I believe I'm ready—right now.

—Elbert Hubbard.

HOW MANY KINDS OF TREES DO YOU KNOW?

Prizes Will Be Given for the Best Answers in This "Tree Puzzle."

Each of the 23 questions below can be answered with the name of a tree. A great many CRUCIBLE readers can call by name almost any tree they see, and it will be interesting to notice how many can answer correctly these questions.

We will give three prizes—**1st. A Disston High-Grade Cross-cut Saw. 2nd. A Disston Hand Saw. 3rd. A Disston Plumb and Level**—to the *persons sending the first three correct answers received at this office.* If no one answers all 23 questions correctly—and it is doubtful if anyone will—the three persons sending the nearest correct answers will be given the prizes. Therefore, send in *your* answer, even if you cannot answer *all* the questions, you may get one of the prizes.

Every CRUCIBLE reader, excepting employees of the House of Disston, and branches, is eligible to receive a prize.

Send your answers today! Remember the *first correct ones received at this office* get the prizes.

All answers, to be considered, must be received before August 6, 1921.

Address answers to "Crucible Editor, Henry Disston & Sons, Inc., Philadelphia, Pa."

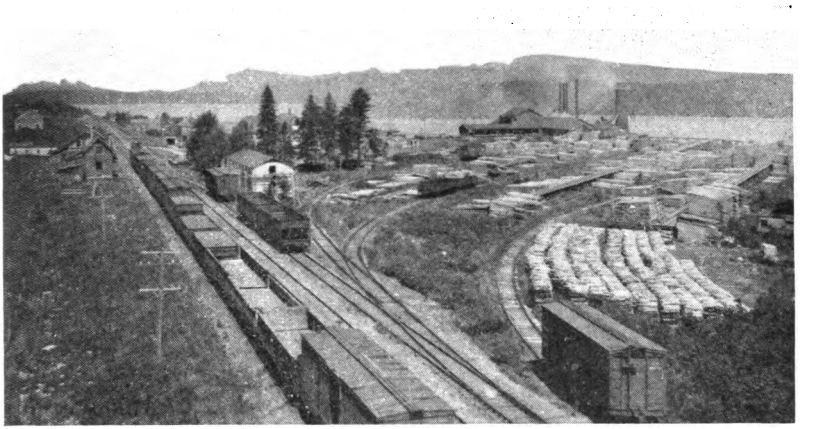
ANSWER THESE QUESTIONS

1. Which tree a kissing game could play?
2. And which its father's name could say?
3. Which shall we wear to keep us warm?
4. And which do ships prefer in storm?
5. Which shows what lovelorn maidens do?
6. And in your hand which carry you?
7. And which is it that the fruit men fear
   Which makes a call each seventeenth year?
8. And from their pipes men shake which tree?
9. Which tree does a bad boy hate to see?
10. Which like a man bright, dapper, neat?
11. Which is a girl both young and sweet?
12. And to which tree shall we now turn
    For goods to wear and stuff to burn?
13. And now divide you one tree more
    You've part of a dress and part of a door?
14. Which tree is never seen alone?
15. And which in church doth office hold?
16. And which is a town in Ireland old?
17. For this one do not look so far
    Which tells what charming people are?
18. The carpenter doth use which tree
    To make his wall as straight as can be?
19. And to which tree do urchins call
    To show you shouldn't have looked at all?
20. Which tree on calendars find you?
21. Which is a joke told times not few?
22. And on our feet we'll wear which tree?
23. And which our hero's crown shall be?

The correct answers and winners will be announced in the August issue of CRUCIBLE. **Send your answers now.**

THE KELLOGG LUMBER COMPANY, LONG POND, ME., USE DISSTON SAWS EXCLUSIVELY

Mill Has Daily Capacity of 90,000 Feet



The Kellogg Lumber Company, Long Pond, Me.

The Kellogg Lumber Company, of Long Pond, Maine, shown in the above illustration, is one of the very large companies operating in the "Pine Tree" State.

It is the policy of this Company to have the best of equipment throughout the plant. Their saw mill has a daily capacity of 90,000 feet with a season's capacity of from thirteen to fourteen million feet. Disston Saws are used exclusively.

This company also operates a planing mill in connection with their saw mill, the product of which is sold by their selling agents, T. C. Kellogg and Son Company, Utica, N. Y., and the Frederick Cleveland Co., Albany, N. Y.

Mr. A. J. McIntire is the general manager of the Kellogg Lumber Company, and Mr. C. H. Bloxom is superintendent and treasurer. To these two gentlemen belong much of the credit for the Company's success.

Camping Suggestions

Be careful with fire. Fire in Pennsylvania has destroyed more timber than lumbermen have cut. Game and fish suffer from fire. You pay the price.

Make and keep your camp fire safe. Build it in a pit surrounded by earth or stone, and keep it small.

Be sure the last spark of your camp fire is extinguished before leaving it. The last spark can start a fire.

A fire should never be built on a run way.

Dead and down timber may be used if permission is first obtained from a forest officer.

Destructive forest fires are frequently started by burning matches, cigarettes, cigars, and tobacco. Use the same care with them in the woods that you do in your home; the forest contains more inflammable material.

SAWDUST

YOW!

"For sale, a large dog, two years old; will eat anything; very fond of children."

PLEASE BE EXPLICIT

Night Owl—"Set the alarm for two, will you?"

Roomie — "You and who else?"—*Cornell Widow.*

QUITE A BARGAIN

"I'm not surprised that Jack finally married Beth; he spent so much on her."

"Yes. They say he married her for his money."—*Harvard Lampoon.*

A man sat in a fashionable coiffeur's shop with his little daughter while his wife was having a marcel wave put in her hair. Stroking her father's gleaming head, the child suddenly piped:

"No waves for you, daddy. You're all beach."

BLESSED ARE THE MEEK

They were enjoying a motor ride and had just entered a country road. "May I kiss your hand?" he asked, a little confusedly. She removed her motor veil. "No," she replied, "I have my gloves on."

SEVERAL LIFE SAVERS, PLEASE!

A country housewife of good intentions, but with little culinary knowledge, decided to try her hand at cake-making. The result was somewhat on the heavy side, and after offering it to the various members of her household, she threw it to the ducks in disgust. A short time afterwards two urchins tapped at her door. "I say, missus," they shouted, "your ducks have sunk!"—*Argonaut.*

AH, GWAN!

"This is a wicked world," said the pious old lady.

"Yes, ma'am," agreed the Irishman, "and we will be lucky if we ever get out of it alive."

Deacon—"Do you know anything about parts?"

Choir Leader (formerly automobile mechanic)—"Sure. The soprano needs a new valve, and the bass ought to have his exhaust fixed."—*Judge.*

"Do Englishmen understand American slang?"

"Some of them do. Why?"

"My daughter is to be married in London and the earl has cabled me to 'come across.'"

"Well?"

"Does he want me or my wad?"

KEENLY OBSERVANT

"I can tell you one thing," said Mrs. Umson, "and that is, Mrs. Amsley isn't much of a housekeeper."

"I thought her place looked all right," Mr. Umson defended.

"Well, I noticed one thing you didn't. The papers on her pantry shelves were dated 1915."—*Youngstown Telegram.*

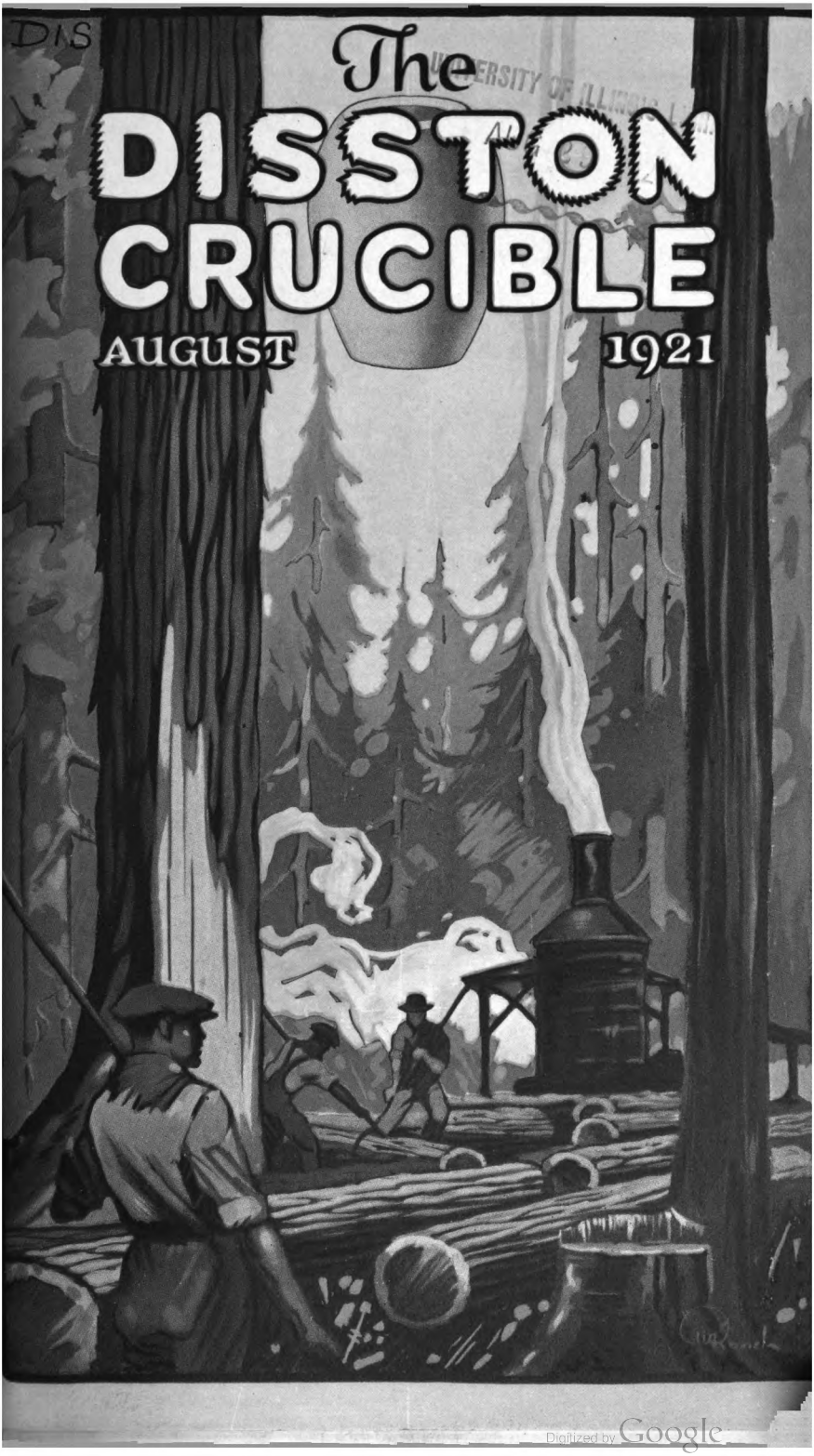
"IT ALLUS HAS"

The rain it poured,
The sea it roared,
The sky was draped in black.
The old ship rolled,
She pitched and bowled
And lost her charted track!

"Oh dear, oh dear!
Sir, will it clear?"
Loud wailed a dame on deck.
As they heaved the lead
The skipper said,
"It allus has, by heck!"—*Exc.*

The DISSTON CRUCIBLE

AUGUST 1921

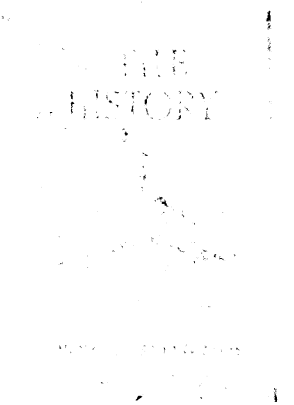


The Development of
THE FILE

A story of the history, making, and uses of this important tool

THERE are hundreds of different kinds of files. Each kind was developed for some particular use. There are mill files, cant files, round files, taper files, warding files, and so on. There are round, square, three-square, half-round, and flat files. There are rough-cut files, middle-cut files, smooth-cut files, etc., — hundreds of different kinds. Do you know what they are used for?

Our booklet, "The File In History," tells about these different kinds of files and their uses. It tells how files are made and how the file has developed thru the ages from the primitive abrading tools of the ancients.



A new edition of "The File In History" is ready for distribution. We will be very glad to send you a copy without cost.

Write for it. Address your letter to
Department O
Henry Disston & Sons, Inc.
Philadelphia, U. S. A.

DISSTON CRUCIBLE

A MAGAZINE FOR MILLMEN

VOL X. AUGUST, 1921 No. 7

DISSTON BRANCH AT SYDNEY, N. S. W.

Carries a Full Line of Mill Saws and Accessories, Machine Knives, Etc.

Maintains Well-equipped Repair Shop.

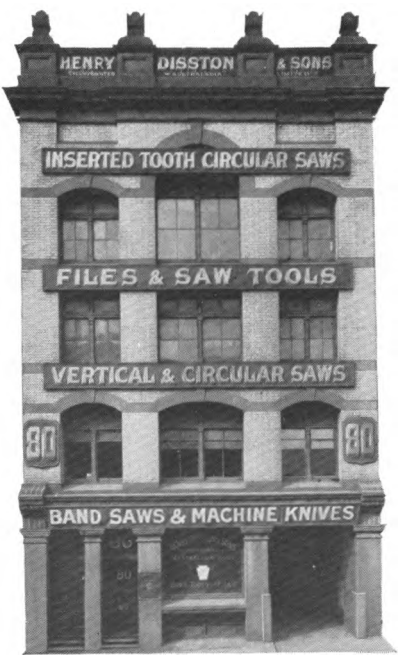
THE timber industry of Australia is one of its greatest national assets. It is estimated that all forest area of New South Wales is 15,000,000 acres; Victoria, 11,797,000 acres; Queenland, 40,000,000 acres; South Australia, 3,840,000 acres; Western Australia 20,400,000 acres; and Tasmania 11,000,000 acres. Total 102,037,000 acres.

Near these forests are hundreds of well-equipped sawmills, employing many men who are kept busy supplying the home demand for lumber, as well as the export trade, which runs into millions of dollars annually.

This industry uses a great many saws. The peculiar character and hardness of some of the woods in Australia necessitate special forms of both saws and teeth, of exceptional efficiency and durability. The Disston Saw meets all the requirements.

To better accommodate our sawmill trade in Australia, the House of Disston, in 1910, opened a sales room in Sydney. The business grew rapidly with the firm in close touch with the mills, and in a few years time it became apparent that to give our trade the very best facilities, it was necessary to establish a branch, and carry a full line of sawmill goods and accessories, machine knives, etc.

Accordingly, on May 21, 1914, "Henry Disston & Sons, Inc., (Austra-



Disston Branch at Sydney, N.S.W.

lia) Ltd.," was incorporated and registered under the "Companies Act" of New South Wales. They then moved into their present commodious quarters at No. 80 Sussex Street, in one of the busy parts of Sydney, and on one of the main thoroughfares, to and from the wharves. From here Australian and New Zealand mill goods business is handled. As the Branch always has in stock a full line of mill saws and, saw mill supplies, knives, etc., orders are readily filled, much to the trade's advantage.

The Sydney Branch also has a well-equipped repair shop which takes care of the special requirements of the trade. Thus the mill men of this section have access to, and the benefit of, experienced mechanics and up-to-date machinery, in helping to solve their saw problems, which arise from time to time.

Mr. Sydney W. Batty, the manager, is well qualified for his position, having had considerable shop and selling experience. Besides, as far as the saw business is concerned, "Syd" "was to the manner born." His father, Mr. Harry Batty, is an expert saw maker, having been associated with the House of Disston, in Philadelphia, Pa., continuously for the past fifty-three years. He is at present one of the Assistant Superintendents of the home works.

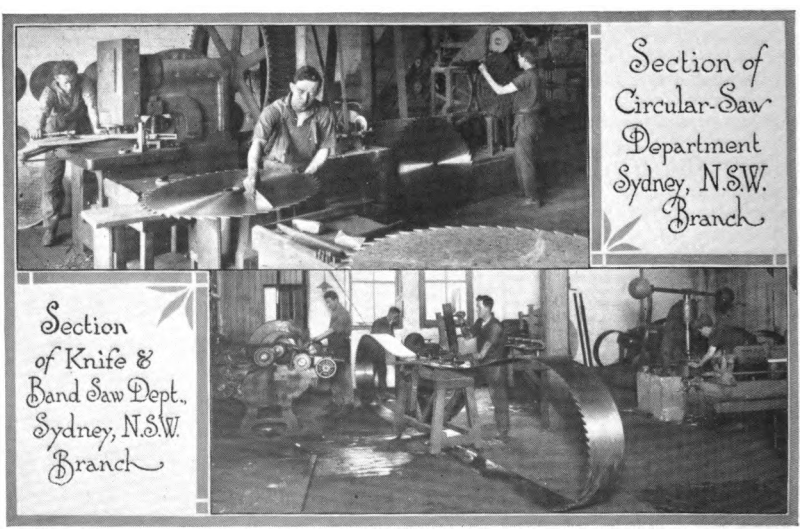
Mr. Batty, his hustling salesmen, master mechanics, and efficient office force, give the trade every possible attention, with the result that the Sydney branch is enjoying a constantly increasing volume of business.

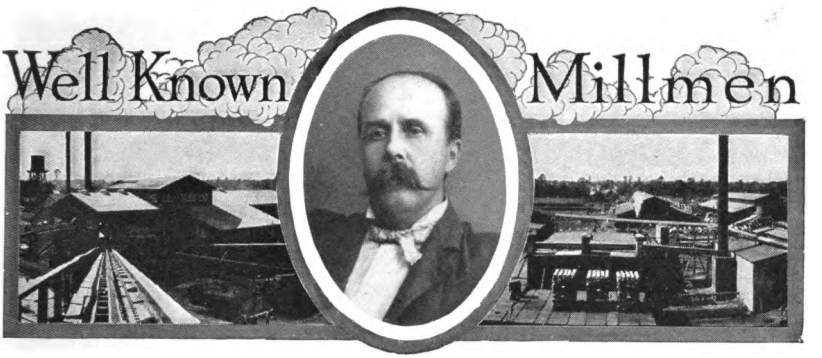
Lumber Industry Second in Value of Output in U. S.

The value of the public property now controlled by the Forest Service is estimated at over $2,000,000,000. The total stand of timber on the National Forests is estimated at nearly 600 billion board feet.

With over $600,000,000 invested in saw-mills and standing timber; with 735,000 men employed at wages of $367,000,000 a year, supporting 3,500,000 dependents, and an annual production of over one and a quarter billion dollars, the lumber industry ranks second in value of output and third in number of employees, among the industries of the United States.

—*The Wealth of America.*





FRED REGENOLD, Sr., Memphis, Tenn.

THE history of saw milling in Arkansas, Mississippi, and Tennessee, covering the past 35 or 40 years would not be complete without a record of the life and activities of Fred Regenold, Sr., of Memphis, Tenn.

This estimable gentleman has a remarkably successful record as a saw filer, and in the territory covering the afore mentioned states he is considered an expert in his line.

He was born at Nashville, Tenn., in 1851. His earliest saw-milling experience was in the early '80's, in the employ of that master millman, Mr. J. D. Allen, now connected with the Riechman-Crosby Company, who at that time was manager of what was known as Langham's sawmill at Nashville, Tenn.

Some sage has written that "a man is never successful at his work unless he enjoys it." We have Mr. Regenold's assurance that he has always enjoyed saw milling very much, and hopes to serve in the capacity of filer for years to come.

During his many years as a filer, he has worked on all makes of band saws, and he assures us that according to his experience, the Disston saw has always kept up to the pace, and that his greatest success was with the Disston Saw.

Mr. Regenold some years ago invented and put on the market an automatic swage and shaper. One of these machines is in use in the Disston factory at the present time, doing very satisfactory work in swaging wide band saws.

Three of Mr. Regenold's sons are successfully filling positions as filer with the following firms: Mr. Ed. Regenold is at Wilson, Ark., with the Kansas City Shook and Mfg. Co.; Fred Regenold is with the Desha Lumber Co., Lake Providence, La., and his youngest son, "Charley" is with the Tschudy Lumber Company, Weona, Ark. These men follow their father's footsteps as to ability and their preference in saw as well as to exemplary character.

Mr. Regenold also has a wonderful family of girls, of whom he is very proud.

There is some contention among those who know the Regenolds as to which of them is the best filer, but the boys themselves concede that their father is the "daddy" of them all.

We are glad to number Mr. Regenold among our friends and we wish him many years of profitable service along his chosen line.

"One great, strong, unselfish soul in every community would actually redeem the world".—E. L.

Power house, saw mill and kilns, store and administration building of the Red River Lumber Co., Westwood, Cal.

THE RED RIVER LUMBER CO., WESTWOOD, CAL., HAS GREAT TIMBER-PRODUCTS PLANT

Saw Mill and Box Factory has Daily Capacity of 700,000 Feet and 300,000 Feet, Respectively.

Well-planned, Modern Town Built to Accommodate Employees and Their Families.

IN the Summer of 1912 The Red River Lumber Company commenced building its timber-products plant at Westwood, Cal. From a small portable sawmill in the heart of a virgin forest consisting of sugar pine, white pine, incense cedar and white fir, it grew to one of the largest plants of its kind in existence today.

The mill is equipped with four double-cut band mills, 36 feet and 18 feet; and two horizontal resaws. The daily capacity of the mill is 700,000 feet. Twenty-five hundred logs are required daily to keep the saws busy. The logging pond covers eighty acres, a section of which, known as the "hot pond" is heated in winter by steam so as to have access to logs in freezing weather.

A box factory with a daily capacity of 300,000 feet; a molding factory, planing mill, sash and door factory finish much of the sawmill's product before it is ready for the market. Numerous innovations characterize this mill, and must be seen to be appreciated, while most all of their machines were built according to the Company's own designs.

The plant is situated at a vantage point on a tract of 800,000 acres, and at an altitude of 5000 feet. It is a long distance from any town, and during its first years was one hundred miles from the nearest railroad.

The officers of the company are: T. B. Walker, President; Willis J. Walker, Vice President; Gilbert M. Walker, Vice President; Archie D. Walker, Secretary; Fletcher L. Walker, Treasurer; R. F. Pray, Resident Manager.

The Department heads are as follows: Plant Supt., Walter Luff; Sawmill Supt. and Master Mechanic, E. A. Ferris; Yard Supt., C. R. Parker; Dry Kilns, Frank E. Graham; Box Factory Supt., C. C. Watkins; Shipping Clerk, Floyd C. Ranker; Plan. Mill Supt., H. A. Smith; Chief Electrician, L. P. McKinley; Office Manager, F. L. Cleaves; Mercantile Dept., Claude Hunter; Chief Engineer, Perry Lofsted;

Civil Engineer, J. H. Hunter; Railroads, A. Fisher; Woods Supt., Geo. W. Wolfe.

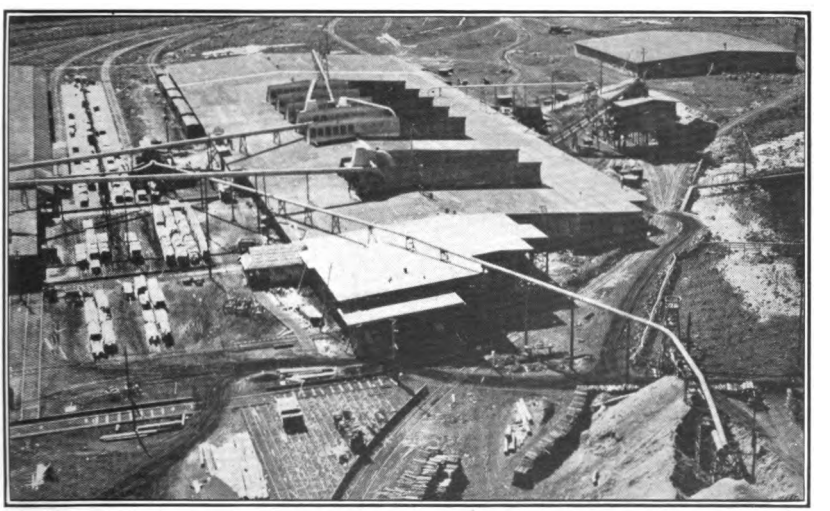
For the accommodation, convenience, and comfort of its employees and their families, the company built a well-planned, modern town, on a tract of about 300 acres. The houses are substantially built and contain the latest conveniences. Most of them are connected with the town's electric, water, telephone, telegraph, steam heat and sewerage systems. Dormitories are built for the single men.

Section of 80-acre pond of the Red River Lumber Co., Westwood, Calif. The huge pile of logs, decked for winter, supply, are from one to four feet in diameter.

The "Westwood Club," equipped with pool and billiard tables, bowling alleys, reading room, etc., also a moving picture house, have been provided for recreation and amusement.

The employees have the advantage of a well-equipped hospital, modern department store, and excellent school facilities, from kindergarten to high school.

To avoid fire, the company recently contracted with the U. S. Government to have their great timber tract patrolled by aeroplanes and forest rangers.

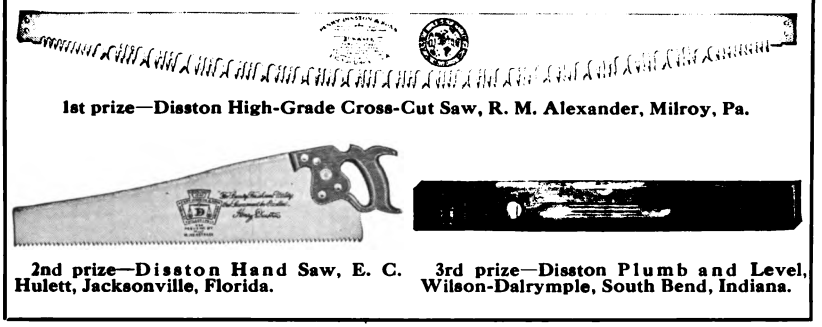


Blow-pipe system of the Red River Lumber Co., Westwood, Calif., extending from saw mill and box factory to saw dust pile.

"TREE PUZZLE" CONTEST AROUSES LIVELY INTEREST AMONG "CRUCIBLE" READERS

Answers Received From All Parts of the Country.

Messrs. Alexander, Hulett, Wilson and Dalrymple, Are Prize Winners.



1st prize—Disston High-Grade Cross-Cut Saw, R. M. Alexander, Milroy, Pa.

2nd prize—Disston Hand Saw, E. C. Hulett, Jacksonville, Florida.

3rd prize—Disston Plumb and Level, Wilson-Dalrymple, South Bend, Indiana.

The big contest is over! In announcing the "Tree Puzzle" in the July Crucible we made the statement that a great many readers can call by name almost any tree they see. The large number of correct, or nearly correct, answers to our puzzle that have been received indicate that we were right.

According to the terms of the contest published last month, the *first three correct* answers received at this office would be given the prizes. The prize winners are:

First, R. M. Alexander of Milroy, Pa.; receives a Disston Cross-Cut Saw.

Second, E. C. Hulett of Jacksonville, Florida; receives a Disston "D-8" Hand Saw.

Third, Messrs. Wilson and Dalrymple of South Bend, Indiana; receive a Disston Plumb and Level.

In all, 23 *correct* answers were received. To each of these twenty-three people sending a correct answer (which arrived too late to get one of the three capital prizes), we are sending a Disston Memorandum Book. They are:

Rufus T. Strohm, 1719 Mulberry St., Scranton, Pa.

James F. Tatum, Bordentown, N. J.

Burke Edwards,1800 K.St.,Washington, D.C.

W. I. Hutchinson, 930 F. St., N. W., Washington, D. C.

Miss Henrietta Allen, 1681 Dyre St., Frankford, Pa.

F. W. Buddle, Jr., Buddle & Weis Mfg. Co. Jackson, Tenn.

Philip O. Foley, Paris, Ill.

C. C. Bell, c/o Gamble Bros., Inc., Highland Park, Ky.

C. R. Johnson, 118 S. West St., Madison,Wis.

J. H. Kitchen, W. J. Fell Co., Ashland, Ky.

J.L.Thomason,2101 Holbrook Ave.,Cairo,Ill.

James Margedant, B. & Millikin St., Hamilton, O.

W.H.Morton, 101 Concord St., Portland, Me.

Miss Alice Trogdon, 419 W. Chestnut St., Paris, Ill.

F. A. Le Vasseur, Moss Point, Miss.

Fred. W. Phillips, 317 Pleasant St., Bennington, Vt.

H. L. Rossire, Lowerre Summit Park, Yonkers, N. Y.

M. Otto, c/o Wm. B. Mershon & Co., Saginaw, Mich.

N. C. Shafer, Box 757, El Centro, Cal.

Virginia V. Warren, Mayesville, S. C.

John Holmes, Loomis & Hart Furn. Co., Chattanooga, Tenn.

John F. Wolff, Jr., The Schwarz Wheel Co., Margaret St. & P.R.R., Frankford, Phila., Pa.

A. M. Lawrence, 221 W. Broadway, N. Y.

Mrs. F. C. Barrett, Keene, N. H.

It was surprising to see how many of the hundreds of answers received were correct or nearly correct. Few persons made mistakes with the names of more than two trees. Many had the right idea but expressed it with the name of the wrong tree, as, for instance, "gum" instead of "rubber."

The prizes and the memorandum books have all been sent. If anyone, having sent the correct answers has not yet received his award and our letter, please notify us *at once.*

So the contest is ended. We congratulate the winners and wish "better luck next time" to the losers. We only hope that everyone who participated enjoyed it as much as we did!

CORRECT ANSWERS TO "TREE PUZZLE"

1. **Which tree a kissing game could play?—Tulip.**
2. **And which its father's name could say?—Paw-Paw.**
3. **Which shall we wear to keep us warm?—Fir.**
4. **And which do ships prefer in storm?—Bay.**
5. **Which shows what lovelorn maidens do?—Pine.**
6. **And in your hand which carry you?—Palm.**
7. **And which is it that the fruit men fear**
   Which makes a call each seventeenth year?—Locust.
8. **And from their pipes men shake which tree?—Ash.**
9. **Which tree does a bad boy hate to see?—Birch.**
10. **Which like a man bright, dapper, neat?—Spruce.**
11. **Which is a girl both young and sweet?—Peach.**
12. **And to which tree shall we now turn**
    For goods to wear and stuff to burn?—Cottonwood.
13. **And now divide you one tree more**
    You've part of a dress and part of a door?—Hemlock.
14. **Which tree is never seen alone?—Pear.**
15. **And which in church doth office hold?—Elder.**
16. **And which is a town in Ireland old?—Cork.**
17. **For this one do not look so far**
    Which tells what charming people are?—Poplar.
18. **The carpenter doth use which tree**
    To make his wall as straight as can be?—Plum.
19. **And to which tree do urchins call?**
    To show you shouldn't have looked at all?—Rubber.
20. **Which tree on calendars find you?—Date.**
21. **Which is a joke told times not few?—Chestnut.**
22. **And on our feet we'll wear which tree?—Sandalwood.**
23. **And which our hero's crown shall be?—Laurel.**

Through courtesy of the American Forestry Association we were privileged to present this "tree puzzle" to the Crucible readers. It appeared originally in their magazine, *American Forestry*—(Editor).

SAWDUST

STICK TO IT.

Plan for more than you can do,
Then do it.
Bite off more than you can chew,
Then chew it.
Hitch your wagon to a star,
Keep your seat, and there you are."

NOT DRESSED FOR THE OCCASION

Edwin—Which'll we see? There's an awfully funny Charley Chaplin at the Bijou. You'll split your sides. Then there's "Shrieking Souls" at the Scarehead. It'll make your hair stand on end.

Angelin—Can't you think of something else? I'm wearing my new Georgette waist and I've just had a permament wave.—*Houston Post.*

AMBIGIOUS

A clergyman about to enter a bus noticed a gentleman seated in the corner who had celebrated peace rather too well.

"Do you allow drunkards in your bus?" he asked the conductor.

"Well, not as a rule," said the conductor, "but slip in quietly."—*Cottonyarns.*

A WISE PROVISION

Hicks was a tall, angular lad from the backwoods who had never before seen a train. As he stood with his city cousin in the long station shed and watched the puffing engine and the long line of cars roar in, his face turned ashen.

"What's the matter, Bill?" asked the cousin.

"My gosh!" gasped Hicks. "If that durn thing had of come in sideways it would of wiped us all out."—*Cottonyarns.*

Man—"Is New York the next stop?"

Porter—"Yes, sah; brush you off suh?"

Man—"No, I'l get off myself."—*Banter.*

MAKING IT HOMELIKE

On Dolly's birthday she was presented with a baby bulldog, and her delight was delicious to behold.

It was very young, and she insisted upon taking it to bed with her, but the next morning she was looking very tired.

"Haven't you slept well, darling?" asked her mother.

"No, mummy," said Dolly. "Nelson was crying in the night for his mumsey, so I kept awake with him for company, and I made awful faces all night to make him fink I was his bulldog muvver to comfy him!"—*London Answers.*

ALL IN THE GOOD BOOK

Bishop Hoss said at a Nashville picnic:

"The religious knowledge of too many adults resembles, I am afraid, the religious knowledge of little Eve.

" 'So you attend Sunday-school regularly?' the minister said to little Eve.

" 'Oh, yes, sir.'

" 'And you know your Bible?'

" 'Oh, yes, sir.'

" 'Could you perhaps tell me something that is in it?'

" 'I could tell you everything that's in it.'

" 'Indeed,' and the minister smiled. 'Do tell me, then.'

" 'Sister's beau's photo is in it,' said little Eve, promptly, 'and ma's recipe for vanishin' cream is in it, and a lock of my hair cut off when I was a baby is in it, and the ticket for pa's watch is in it.' "—*Los Angeles Times.*

The DISSTON CRUCIBLE

SEPTEMBER 1921

Hints to Sawyers Booklet

A Book of Information

For the Users of Circular Saws

THE new "Hints to Sawyers" booklet is just what the name implies—a compilation of useful hints for men who are operating circular saws. Some of the chapter headings are:

"Saws Out of Round"
"Setting the Carriage Track and Husk or Saw Frame"
"Lining the Saw With the Carriage"
"Saw Guides"
"Proper Speed of Saws"
"Fitting Saws and Maintaining Them in Proper Condition"—Etc.

Real brass-tack information that should be of value to all users of circular saws. We will be glad to send the book free of charge.

Write for it. Address your letter to

HENRY DISSTON & SONS, INC.
DEPARTMENT O
PHILADELPHIA, U. S. A.

DISSTON CRUCIBLE

A MAGAZINE FOR MILLMEN

VOL X. SEPTEMBER, 1921 No. 8

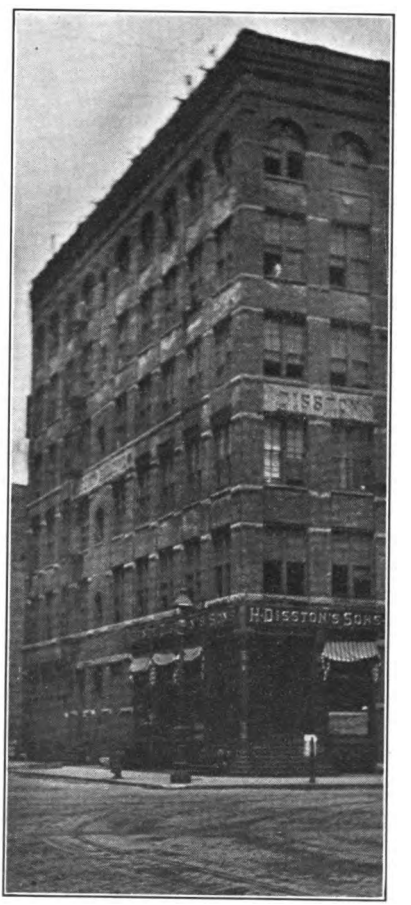
DISSTON CHICAGO BRANCH

Carries a Full Line of Mill Saws, Metal Cutting Saws, Tools, Files, Etc.

Located at No. 570 Washington Boulevard

SHORTLY after the Civil War, it was found that the lumbering industry of the United States had gradually moved westward, and that Ohio, Indiana, Michigan, Illinois, Iowa, Wisconsin, and Minnesota had become the principal lumber producing states.

About this time Mr. Henry Disston, founder of the House of Disston who was then actively engaged in the management of his large works at Front and Laurel Streets, Philadelphia, Pa., began to realize that he could handle his trade in that section to better advantage by being in closer touch with it. Chicago, then a city of about 100,000 population, was pretty centrally located in the lumbering regions of the middle west, and it was estimated that there were more sawmills built within a radius of about 300 miles from Chicago than in any other section of the same size in the United States. Consequently Mr. Disston concluded that Chicago was the logical place to establish a branch. So, in 1870, he located at 210 Lake Street, where he carried a full line of mill saws and accessories, and maintained a



Disston Chicago Branch.

repair shop. His nephew, Mr. Harry D. Nichols, was placed in charge and continued to be manager of the Branch until 1898.

This branch was burned in the great fire in 1871, which destroyed almost the entire city. New quarters were then acquired at the corner of Randolph and Market Streets by the purchase of one of the few buildings which remained intact after the fire. Mr. Henry Disston personally negotiated the deal, having carried the money in his pocket from Philadelphia to Chicago for the purpose, according to statements of old employees.

Prior to the World's Fair in 1893, the branch was moved to the present site, No. 570 Washington Boulevard, upon which a commodious six-story building had been erected. Here, in addition to a convenient stock of sawmill supplies, the trade has the advantage of a well-equipped shop for the repairing of all kinds of mill saws. A very large business is also done in sheet steel and jobbing work, the shop having excellent facilities for all kinds of shearing, punching and grinding.

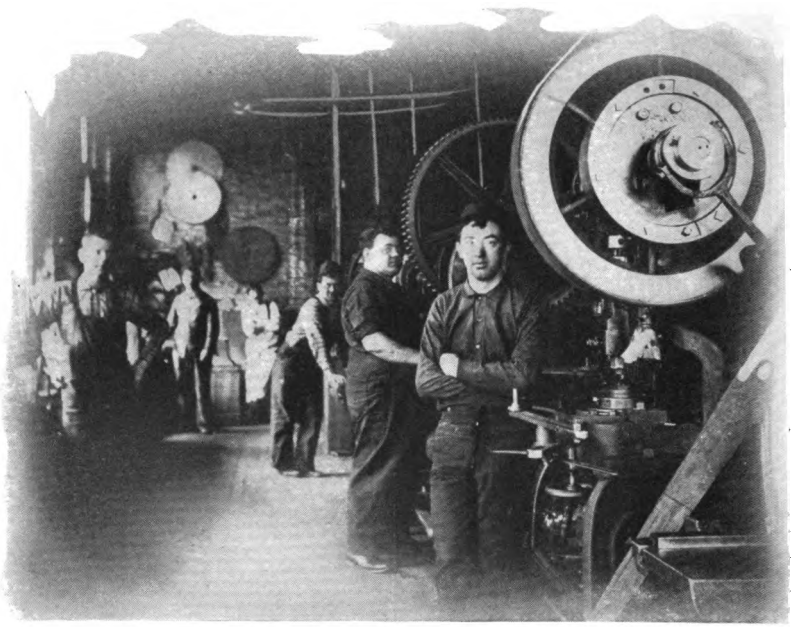
Circular saws of special design or dimensions which cannot be obtained from stock at the Philadelphia Works, as well as standard saws for rush shipment, are made here, but all of them are from Disston-made plates and Disston standard of workmanship. These saws are of the most modern types and finely finished. Many of them are for special machinery and special work, which is to be expected in a large city like Chicago, the home of more than 20,000 factories.

The shop is manned by experienced mechanics, some of whom have been in our employ for more than thirty-five years.

Mr. L. L. Mather has been manager of the branch since May, 1915.

Efficiency and loyalty characterize his corps of workers, both in factory and office. His well-organized sales force is

(Continued on Page 86)



Section of Shop, Disston Chicago Branch.

EDWARD BYNUM RUSSELL

(Deceased)

More than eight months have elapsed since the death of Edward Bynum Russell occurred, yet his exemplary life, congenial disposition, and ability as a workman, remain fresh in the memory of his many friends.

"Ed" Russell, as he was familiarly known, was born October 20, 1875, and died at his home in Moorehead City, N. C., January 6, 1921. While comparatively a young man, he had had ripe experience, and was considered a thoroughly competent Band Saw Filer. He was widely known along the Atlantic Coast—in fact throughout the entire lumber sections of the south.

As millwright for the Minden Lumber Company, Minden, La., Mr. Russell gained his first experience at filing. Progressive and ambitious, he kept abreast of the times and improved every opportunity to become a master of the filing trade. Until shortly before his death, he had been employed by the Lamb-Fish Lumber Company, at Charleston, Miss.

A marked characteristic was his fondness for children, and "Ed" was never happier than when associated with the little folks.

He is survived by two brothers, Messrs. Mark and Dan Russell, both of whom are filers; also two sisters who reside at Moorehead City, N. C.

Only recently have we learned of Mr. Russell's death, and we felt it justly due to one so well and widely known to the readers of the Crucible to publish this little tribute to his memory, even though it is belated.

Please Consider That—

The area of Pennsylvania forests burned over in 1917 is equal to the combined area of Montour, Philadelphia and Delaware counties.

The primeval forests were our heritage. Will coming generations be proud of the forest heritage we are leaving them?

At the present rate of forest tree planting in Pennsylvania it would require 50 years to restock the area burned over in 1918.

Low-brows match pennies because it requires little mental concentration; high-brows match wits for the opposite reason.

Unless the greatest care is exercised by every man, woman and child who goes into the woods, you and your neighbors may be the victims of a forest fire.

The Department of Forestry is doing its best to prevent forest fires. It needs the help of every person who goes into the forests for business or pleasure to make it more effective.

CRACKS IN BAND SAWS

By J. D. ALLEN

FIFTEEN or twenty years ago—and perhaps more recently for some of them—cracks appearing in band saws were the bane of the band filer's life, causing worry all day and sleepless nights. But happily this trouble has been practically eliminated by improved methods of manufacture of steel, in the first place, and on through the various processes to the finished saw.

The principal element, however, in overcoming this trouble has been in the improvement in skill of the filers. It used to be thought that when the filer's helper could "put up" a saw to stand the feed and make good lumber, he was a finished filer. But if he has not, in the meantime, acquired the knowledge and skill necessary to line up the mill and track, adjust the guides, offset and set-works, "face" the saw wheels, in fact keep the mill in perfect running order, and in addition to this, be able to step in and relieve the sawyer, he has not finished "learning" his trade.

From my own experience and observation, extending over a long period of years, in the operation and use of band saws, I am thoroughly convinced that in the past sixteen years there has been no occasion or cause for cracks in band saws, under proper skill and care of the filer and sawyer from inferior steel or make-up of the saw. I have on my list several filers who will bear me out in this opinion. From personal experience each is partial to a certain make of saw, but one of them at least claims that he has used three different brands in the past fouteen years, wearing some of them down from 12 to 8-in. in width, without a crack in any of them, and he has several now in the racks to show for proof of this.

Another filer—the above man's son—is using 14 gauge, 12-in. saws on a 7-ft. mill, running 11,000 ft. per minute, and runs them down to 10-in. with not a crack. It took a visit to the mill to fully convince me of this fact.

As to the causes for cracks (allowable only with beginners), they are various, and occasionally somewhat mysterious, but a remedy is always found if the fault is other than in the steel of the blade. Front cracks come from the following causes: Allowing the wheels to wear off rounding at the front, or tracking the blade too far off the front, in either case leaving the tooth edge unsupported; casehardening the throats of teeth by using emery wheel too hard or at too high speed, or too rank feed-down; cross-lining the wheels—never necessary or allowable; improper tension, either too "open" or "fast" just under the teeth.

Center cracks, in line 2 to 3-in. back from points of teeth, are usually caused by tracking the saw too far forward, or by rounded front edge of wheels, or both. Other causes for center cracks are, spots too open, or the blade too open all around, causing the blade to vibrate through every time it goes on and off the wheels—four times every revolution of the blade—also a lumpy or too "open" blade passing through hard guide liners, especially if the

guides are adjusted closely. If the tension is even throughout the blade it will not crack either at edge or center, even if it is not open enough to stand strong feed, and not "snake." The filer, however, who is competent, must know when he has the proper amount of tension to stand the feed, and the sawyer should have judgment to know when the power, tension and feed are at the best to produce the quality first, and then the quantity, up to the reasonable capacity of the mill.

Now I will give my reason for claiming that the steel and make-up of the band saw (and circular saws, too, for that matter) are seldom if ever blamable for cracks. Three years ago, on invitation from an officer of Henry Disston & Sons, Inc., the largest saw works, I had the pleasure of visiting their factory, from the steel works up through the various processes of manufacture, to the finished product.

An Expert Mill Man of 57 Years Experience, with Riechman & Crosby, Memphis, Tenn.

The steel ingot is first examined by an expert (with diamond-point chisel and hammer in hand) for seams and flaws; if the slightest flaw is found the casting must go back to the furnace and be recast. If the ingot is passed by the two inspections, it then goes to the rolling mill to be shaped into sheets or bars for the purpose intended, and is closely examined again for faults of any kind. Then if passed as perfect, it goes to the next stage of manufacture, and so on through the various processes, being examined each time it changes size, shape or form, up to the finished saw, tool, or file, as the case may be. If the part is a band saw blade, it goes to the filing room, where it is joined, tensioned, swaged, shaped and ground; the three latter operations being automatically performed.

After seeing the close scrutiny and care taken after each operation, up to placing band saws in the case for shipment, at the factory, I have concluded that it is next to an impossibility for an imperfect Disston band saw to "get by" in the way of temper or flaws, and I have formulated the following rule of practice to determine the quality and temper of the steel of a saw:

The teeth must stand the swage (properly adjusted); must hold the corners (when shaper is used) in all kinds of timber, and hold the edge for a reasonable amount of work. The blade must hold the tension against a reasonable strain, indefinitely, and against the grinding a reasonable time, as the grinding in the throats will "let down" the tension eventually, even if carefully and properly done.

And these are my reasons for "the faith that is in me:" If the teeth stand the swaging and hold the corners—that is, do not crumble—the steel is evidently not too hard. If the teeth hold the edge, and the blade the tension under reasonable service and conditions, it is evident that the blade is not too soft, and, barring accidents and incompetency, a 12-in., 14-gauge band, on 8-ft. or over wheels, should never crack within a reasonable lifetime. That is, it should stand to wear down to at least 10 or even 8-in., in width, or until it becomes too narrow to stand the feed, up to the capacity of the mill.

It is not good practice to put a narrow 14-gauge blade, that has been used

on 8-ft. or over wheels, onto smaller wheels, but if the blade is ground down to 15-gauge for 7-ft. wheels, or 17-gauge for 6-ft. wheels, it will again give good service.

I base the above claims on the assumption that the sawmaker must first have the technical knowledge as to the qualities of steel required for the class of saws and the work they are intended to perform, followed up by the skill and care to finish it, ready for use. This knowledge and experience is only acquired by years of experiment and study to bring the product to perfection.—*The Woodworker.*

Two ways of breaking a friendship: strike a man on the bean or touch his pocket-book. But for safety's sake, choose the lesser course, and leave his pocket-book alone.

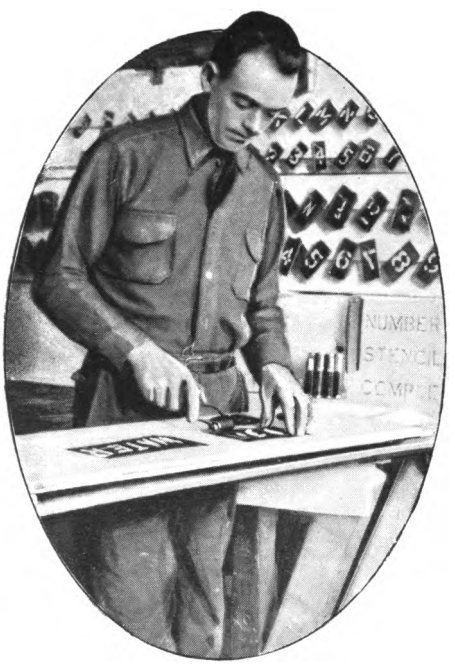
Disston Chicago Branch

(Continued from Page 82)

ever on the alert to present Disston quality when ever and where ever, in Chicago territory, sales are to be made.

Mr. Sam Southern, the veteran sawmaker and salesman who is associated with the Branch, makes occasional trips in nearby territory. "Sam," as he is familiarly known, has been in the employ of the House of Disston for almost forty years, having served both in factory and on the road. He has a great many friends in the lumber trade, not only in Chicago territory, but throughout the country.

The first fire company, called the "Union," a volunteer company, was established at Philadelphia, 1736. The fire engine was sent from England.

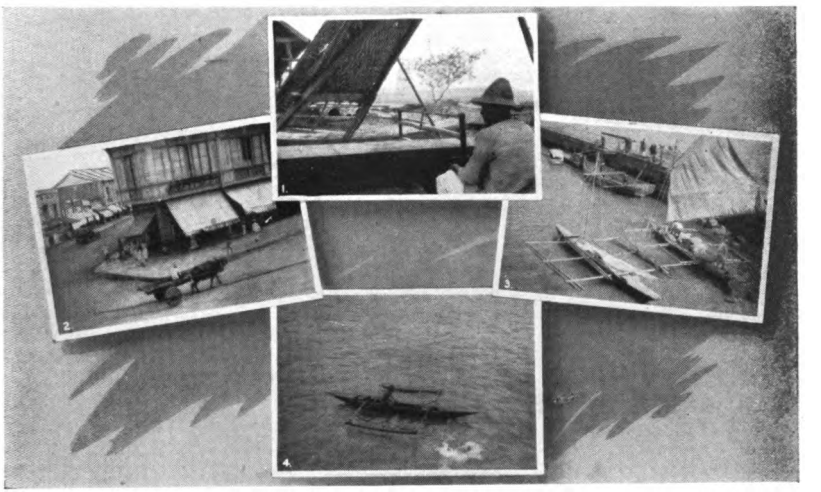


Making Forest Guide-Posts

When spring comes, the foresters connected with the United States Forest Service go forth into the woods and plant guide-posts along the highways and forest trails.

Throughout the winter, when there is little work to be done in the forests, the men spend their time stenciling the names of towns and the number of miles between on seasoned boards. The boards are then given a preservative treatment to prevent them from deteriorating under severe weather conditions.

In the opposite picture you see a Western forester at work on one of the boards that later on he will plant on some trail.



THE FILIPINO, IN CEBU, USES QUAINT TOOLS AND METHODS

The illustrations in this article are from photographs taken at Cebu, Philippine Islands, by Mr. A. S. Hunt, a representative of the House of Disston. Cebu is the third city of importance in the Philippines, and capital of the Island of that name. The city of Cebu has fairly good streets and is connected with adjacent villages by good roads. It is the great shipping point for hemp. Sugar, salt cocoanut wine, silk and cotton fabrics, and cheese are also exported. A comparison of the methods and tools used by the Filipino in performing his tasks (as shown in the views above), with those used by the American mechanics, is quite interesting.

Scene 1 shows a Filipino at work on a huge log with a web saw. The frame of this saw is made by hand. The teeth in the blade are oftentimes filed by the native sawyers, and most of the blades are from 62 to 96 inches long. All of them are 2 inches wide. Filing these saws takes lots of time, but neither time nor the cost of the file is taken into consideration by the Filipino. When blades with teeth are furnished the teeth, beginning in the centre of the blade, run in opposite directions.

The natives are adepts with their saws, and it is not unusual for them to saw boards only $\frac{3}{8}$ inch thick. Many sawmills are not equipped with machinery. No circular or band saws,—all sawing is done by hand.

In scene No. 2 we have a caribou drawing a cart, the wheels of which are made of solid wood. A load consists of a "good handful of lumber," and it takes the old caribou all day to deliver it. What a contrast to a high-power truck!

Scene No. 3 shows the native outriggers loading peculiarly-constructed sail boats with cargo for some place not touched by steamers. The frame extensions on either side of the boat are intended to prevent capsizing.

In scene No. 4 we have one of the diversions of the Filipino—diving from a canoe in search for coin.

Many men are misers with their deeds and spendthrifts with their conversation.
—Henry L. Doherty

SAWDUST

NOTHING ELSE

Mr. Meane—I have nothing but praise for the new minister.

Brown—So I noticed when the plate went around.

BOOKS ARE NOT DRY

Card from a local station agent to a studious citizen:

"Sir—Please send, without delay, for the case of books directed to you, which is lying at this station and is leaking badly."

CONSTITUTIONAL SUPPLIES

One day as President Harding was leaving the Executive Mansion, he was accosted by an old negro dressed in tatters and carrying an empty basket.

"Am you de President, sah?"

"Yes," said Mr. Harding, "what can I do for you?"

"Well, you see, Missah Harding, I'se from Virginia, an' I'se a mighty poor man. I hear dat dere is some pervisions in de Constitution for de cullud man, an' I'se here to get some ob dem, sah."—*Ex.*

THE WRONG GUESS

One morning an old man was busy in the back yard with a saw and hatchet when the next door neighbor came to inquire after the health of his wife. The wife, it seems, had taken a severe cold.

"Good mornin', Mr. Smith," said the neighbor; "how is Mrs. Smith this mornin'?"

"Just about the same," answered old Mr. Smith. "She didn't sleep very well last night."

"Poor dear," said the neighbor, sympathetically; "I s'pose that's her coughin', ain't it?"

"No, it ain't her coffin," said Mr. Smith, keeping his eyes on his work. "It's a new hen house."—*Armstrong Circulator.*

A SURE REMEDY

When a young man's eyesight becomes so poor that he thinks a certain young lady has pearly white wings, he doesn't need to see an optician, but a parson.

NOT SO ROMANTIC

When mother entered the nursery she found Muriel in tears, and in response to her inquiry the child explained:

"We were playing at weddings, and Paul threw rice all over me."

"You shouldn't cry for a small thing like that. It's to bring luck to the bride."

"But," protested Muriel, still sniffing, "what he used was in the pudding."

HOW SHOULD HE KNOW?

"Where were you yesterday? Tommy Cribbs?" asked the teacher.

"Please, mum, I had a tootache," answered Tommy.

"Has it stopped?" asked the teacher sympathetically.

"I don't know," said Tommy.

"What do you mean, boy? You don't know if your tooth has stopped aching?"

"No, mum, the dentist kept it."—*Los Angeles Times.*

A NEW ONE ON THE COP

Shortly after Detroit's Motor Ordinance went into effect a motor cop hailed a lady driving a limousine on the boulevard and ordered her to report at 9 o'clock.

"The very idea, why?" exclaimed the lady.

"I'm sorry, ma'am," insisted the bluecoat, "you were going 40 miles an hour."

"Impossible," exclaimed the lady indignantly, "why I haven't been out an hour yet."

The cop said it was a new one on him and marked it off his tab.—*Ex.*

The DISSTON CRUCIBLE

OCTOBER 1921

WHEREVER THERE ARE WORKERS THERE ARE DISSTON TOOLS—

For cutting shoring lumber for mine shafts hundreds of feet under ground.

For cutting steel supports for building girders hundreds of feet above ground.

In the manufacture of ships that sail under water, on top of the water, and above the water.

Always Disston Saws, Tools, and Files are in demand.

Disston quality can help with your production problems.

DISSTON

SAWS TOOLS FILES

DISSTON CRUCIBLE

A MAGAZINE FOR MILLMEN

VOL X. OCTOBER, 1921 No. 9

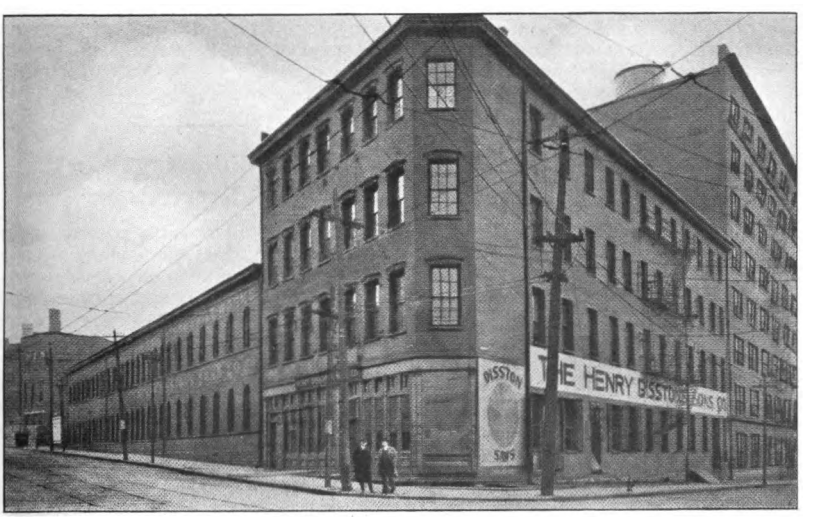
OUR CINCINNATI BRANCH

Was Established January 1, 1902—Is Located at Sixth and Baymiller Streets.

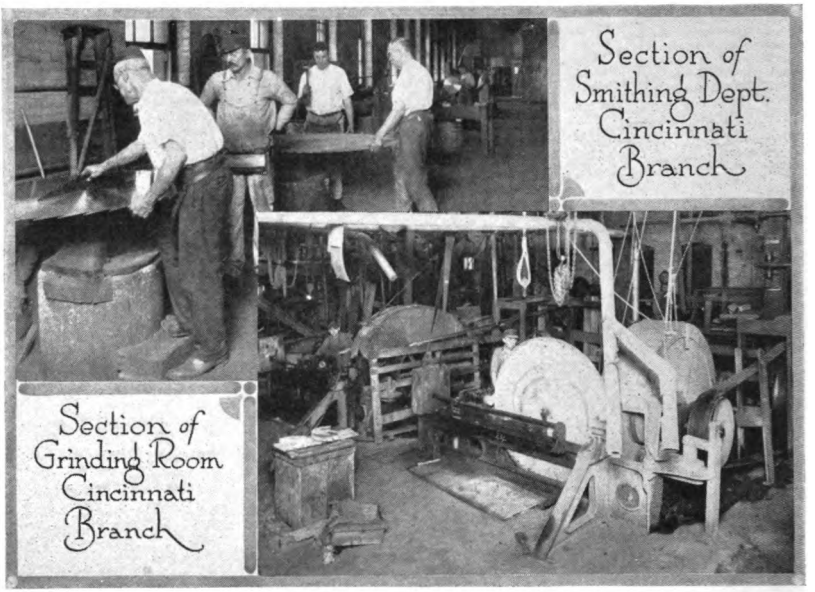
Carries Stock of Wide and Narrow Band Saws, Circular, Long and Metal Saws, Points and Holders, Hack Saws, Machine Knives, Mandrels, Saw Tools, Etc.

IN 1883 there was established at Louisville, Ky., the second branch house of Henry Disston and Sons, Inc. This branch continued to function in the Blue Grass state, to the advantage of our many patrons, for nineteen years. Conditions changing in the meantime, it was thought well to move the branch farther north. Hence Cincinnati was chosen as the logical location, and on January first, 1902, the transfer was made.

Our commodious headquarters at



Disston Branch, Cincinnati, Ohio



Sixth and Baymiller Streets, is a hive of industry. The shop—manned with mechanics of long experience; adequate office force, and the corps of salesmen, under the management of Mr. L. L. Mather, make indeed an efficient organization, the several departments co-operating to give the rapidly increasing number of customers better and faster service on all Disston mill products.

The Cincinnati branch handles mill goods only, and carries a complete stock of large band saws, large chisel point circular saws, large and small solid tooth circular saws, long or cross-cut saws, circular metal saws, points and holders, files, hack saw blades, narrow band saws for both wood and metal, and saw tools.

The shop manufactures from plates shipped from the main works at Philadelphia, solid tooth circular saws, narrow band saws, and segment saws. Special articles from sheet steel are also made. In addition to repairs of all kinds of circular saws, the branch specializes in the manufacture and repair of segment saws.

The territory covered by the Cincinnati branch consists of the Central Western section, comprised of West Virginia, Ohio, Kentucky, Southern Indiana, Southern Illinois, Missouri, except extreme southeastern portions, Tennessee, Northern Alabama, Northern Georgia, Western North Carolina, and Western Virginia.

Ohio Forestry Work Started

The three Silver bills, passed at the last session of the Ohio General Assembly which provides a program for reforestation in Ohio, became laws August 15, 1921. Edmund Secrest, who has been state forester under the Ohio Experiment Station, at Wooster, has been named state forester under the three laws, and he will be charged with their enforcement. The laws provide funds for purchasing land for reforestation, forest preservation, and fire patrols; also for the distribution of forest trees to residents of the state, free of charge. —*Wood Construction.*

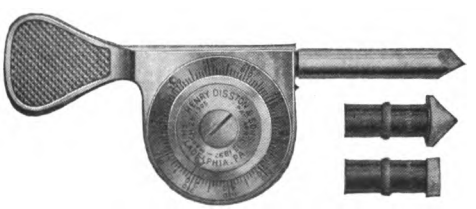
SPEED OF CIRCULAR SAWS

Regularity in Speed Important in Obtaining Best Results.

Rules for Calculating Speed, Etc.

This article is reproduced from our booklet—"Hints To Sawyers," copy of which will be mailed free to anyone interested, upon request.

Speed is a very important point for consideration, as a hundred revolutions, more or less, will always make a great difference in the running of the saw. We can adjust the tension of saws to overcome a slight variation in speed provided full instructions are given when ordering, though we would advise a regular speed at all times. Our experience has been that saws work better when run at a regular speed even if it is necessary to reduce materially the number of revolutions below that given in the following table, than to have a variable speed. If the power is too light to maintain the standard speed, run the engine at a higher *regular* speed, put a larger diameter receiving pulley on the mandrel, and the results will be better both as to quality and capacity. This will be much better than wide variation in speeds, even if the speed, as previously stated, does fall below that given in the table; the regularity is the most important point to look after. Following is a table of speeds:



DISSTON SPEED INDICATOR

Speed of Saws Running 10,000 Feet per Minute on the Rim.

72 in.....	530	revolutions	per	min.
68 in.....	560	"	"	"
64 in.....	600	"	"	"
60 in.....	640	"	"	"
56 in.....	700	"	"	"
52 in.....	750	"	"	"
48 in.....	815	"	"	"
44 in.....	890	"	"	"
40 in.....	980	"	"	"
36 in.....	1,080	"	"	"
32 in.....	1,225	revolutions	per	min.
28 in.....	1,400	"	"	"
24 in.....	1,630	"	"	"
20 in.....	1,960	"	"	"
16 in.....	2,450	"	"	"
12 in.....	3,260	"	"	"
10 in.....	3,920	"	"	"
8 in.....	4,600	"	"	"

Portable mills, of limited capacity, are usually run at a speed about one-third less than given above.

RULES FOR CALCULATING SPEED, ETC.

Problem 1. The diameter of driving and driven pulleys and the speed of driver being given, find the speed of driven.

Rule. Multiply the diameter of driver by its number of revolutions, and divide the product by the diameter of the driven; the quotient will be the number of revolutions of driven.

Problem 2. The diameter and revolutions of the driven pulley being given, find the diameter of the driver.

Rule. Multiply the revolutions of driven by its diameter and divide the product by the revolutions of the driving shaft; the quotient will be the diameter of driver.

Millmen and Sawyers should know the correct speed of all saws and machinery operated by them. It is very important that exact speeds be given with all orders for large circular saws

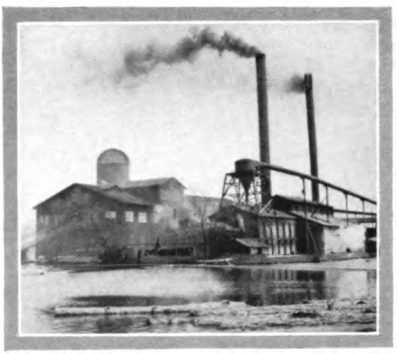
We guarantee the accuracy of the indicator illustrated above and advocate its use. Its working parts are encased.

EAGLE LUMBER COMPANY, EAGLE MILLS, ARK.

Capacity per ten-hour day, 100,000 feet of Lumber and 16,000 Lath.

Use Disston Saws Exclusively.

The Eagle Lumber Company of Eagle Mills, Arkansas, has been cutting timber at their present location for the past thirty-four years and will likely continue operations on the same site for several years longer. They cut short-leaf yellow pine only. Their capacity is 100,000 feet of lumber per day of ten hours. In the same time they cut 16,000 lath.



Eagle Lumber Company, Eagle Mills, Ark.

The equipment of the mill consists of two single bands. The company also operates a planing mill in which resaws are used.

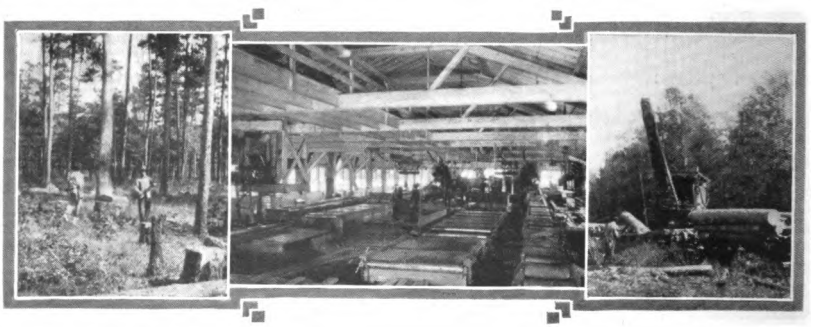
The company's manager is Mr. Edward Bamer. Mr. J. C. Hurst has been superintendent for the past twenty-one years. Mr. C. H. Williamson, the filer, has been associated with the company for four years.

The Eagle Lumber Company has the well wishes of the House of Disston for continued success.

Early Lumbering

American lumbering began when the first settlers arrived on the shores of the New World. These hardy men were obliged to hew trees for their log cabins, and openings for their gardens in the eastern fringe of the great primeval forests.

Every settler was at first a woodsman by sheer necessity. Timber and plank were not sawn, but rived with wedges, then hewn with the axe and finished by dubbing with the adze. About 1623 the first saw mill was built.



Eagle Lumber Company Operations—Left, Felling Trees; Centre, Interior View of Mill; Right, Loader in Operation.

MR. C. H. WILLIAMSON,
Filer.
With the Eagle Lumber Company, Eagle Mills, Ark.

Mr. C. H. Williamson, the subject of our sketch, first saw the light of day thirty-three years ago. On July 12, 1907, he started to learn the filing trade. He then accepted a position as filer's helper on gang saws in the Bodcow Lumber Company's No. 1 Saw Mill at Stamps, Ark. Four months later he was promoted to helper on double-cutting band saws in the Company's No. 2 Mill, which is also located at Stamp, Ark. He held this position for four years.

Mr. Williamson's first experience as filer was with the America Forest Co., Portland, Ark. His position with this company was short-lived due to a break in a levee on the Mississippi River, which caused the mill to suspend operations for ten months. For the next two years he assisted in several mills, and then accepted a position as gang saw filer with the Stout Lumber Company, at Thornton, Ark., which position he held for fifteen months when (in 1915) the Company was forced to shut down the gang due to war conditions.

Then came an offer from his "old" foreman at the Bodcow Lumber Company's No. 2 Mill, to file band re-saws and help in the filing room. Mr. Williamson accepted the offer and held the position until Feb. 24, 1917, when he associated himself with the Eagle Lumber Company. His duty with this company was to file band saws on the right hand side, there being two filers in the mill at that time. In course of two years he was made head filer over both sides, in which capacity he is still serving.

Mr. Williamson is considered a master filer. He enjoys the confidence of his employers, and his ability and genial disposition has won him many friends among mill men of the Southwest.

1,200,000 TREES A YEAR go into our waste paper baskets, according to the U. S. Chief of the Waste Reclamation Service. 150,000 tons of waste paper, which might be used to manufacture other paper material (thus saving wood pulp), go annually to the dump.

Even a poor plan well carried out will net greater results than a jim dandy that fails to get support.

A fire on one forest tract constitutes a potential danger to thousands of acres of timberland in the immediate locality.

TIMBER IN PHILIPPINE ISLANDS VALUED AT HUNDREDS OF MILLIONS

General Leonard Wood, Who Recently Made a Tour of the Islands Sees Immense Timber Industry if Developed Properly

Suggests Wise Forestry Methods Should Be Initiated Immediately.

THERE is enough timber in the Philippine islands to take care of most of the lumber industry of the far east, according to Major General Leonard Wood, who has just traversed the archipelago from northern Luzon to the Visayan islands.

"Few persons appreciate the enormous resources in the islands in the way of lumber, much of it of the most valuable kind," he said. "Almost 230,000,000 feet of it was cut in 1920, of which approximately 15,000,000 was exported.

"In ordinary years there ought to be an enormous amount available for export. Now is the time to initiate those wise forestry measures that would insure the replacement of the trees cut. These forests are full of the most valuable woods, and there is possibility of great development in the production of rubber, camphor, etc., also an enormous amount of other forest and jungle products.

"Lumbermen in the islands ought to unite so as to have better marketing of their products abroad. In other words, here is a great industry that can be developed on sound lines and reproduction of the forest assured."

W. Cameron Forbes, once governor general of the Philippines, predicted a great future for the lumber industry of the islands. He said:

"On my way to the Philippine islands for the first time in 1904, I stopped at the forestry exhibit of the Philippine government in the St. Louis fair. I literally was carried off my feet by the beauty and splendor of the Philippine woods there displayed. Right then and there I made up my mind that it was one of my ambitions to have certain rooms, in whatever house I might build in the future, finished with especially fine panels of selected Philippine woods.

"In my ten years' stay in the islands I collected a considerable quantity of those woods, took the risk of their not standing the American climate, and sent them home. The wood has stood wonderfully well and seems to be as good today as when first put in, and is the admiration of everybody who visits my house, just outside Boston. I am sure the lumber industry of the Philippines has a marvelous future."

A. F. Fischer, director of forestry of the Philippine islands, estimates that on that area the stand of timber is 200,000,000 board feet. The timber, which is owned by the government, is estimated to be worth $400,000,000.

Phila. North American, Sept. 25, 1921.

If you intend to go to work, there is no better place than right where you are; if you do not intend to go to work, you cannot get along anywhere. Squirming and crawling about from place to place can do no good.—*Abraham Lincoln.*

A Service to Producers and Users of Wood Waste

The Wood Waste Exchange of the U. S. Forest Service has been transferred from Washington to the Forest Products Laboratory, Madison, Wisconsin, where its future activities will be centered. The Exchange has in the past contributed much towards more complete utilization of wood, by supplying a medium through which the mills and wood-using factories could locate markets for their side lumber and short lengths, and wood-consuming factories sources of material of this character which would meet their requirements.

Centering the activities of the Exchange at the Forest Products Laboratory will permit an expansion of this service, in that it will be possible to include suggestions as to markets and new uses for by-products and low grade material, based on the latest results of technical research carried on by the Laboratory. As both the Forest Products Laboratory and the Association of Wood Using Industries have pointed out, there is a large wastage of wood annually because of ignorance on the part of manufacturers of one another's wood requirements.

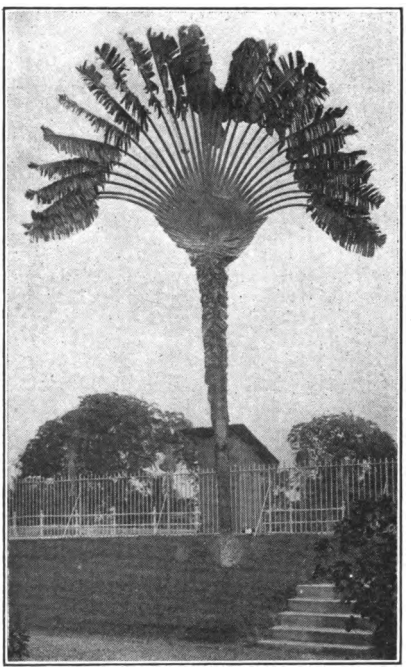
Quarterly reports on "Opportunities to Sell Waste," similar to those issued in the past, will be sent to all concerns who wish to be listed as having wood by-products and waste in any form for sale. These reports will contain the names and addresses of manufacturers of various wooden products who could under suitable conditions use raw material from these sources, together with information as to kinds, sizes, form, and condition of the stock desired. Suggestions as to the proper methods of caring for the material until it is ready for market will also be included.

A similar report on "Opportunities to Buy Wood Waste," will be sent to wood-using factories and other consumers who ask to be listed for this service. This report will contain information relating to manufacturers who have such material and its

Continued on page 96.

Traveller's Palm, Singapore

The traveller's palm is a rare species of the palm tree family. The straight butt of the tree gradually tapering from its sheathing base to the ground, as well as its fan-shaped top gives it quite a unique and attractive appearance.



Traveller's Palm, Singapore.

The trunk consists of the sheaths left by leafstalks that have fallen off. The leaves grow out in a single row at the top of the tree, and resemble a large open fan. At the sheathing base is a cup like reservoir, containing quite a quantity of water or sap, which supplies moisture to the tree in long dry spells. This sap also supplies a refreshing drink, whence the name, traveller's palm.

We are indebted to our Mr. A. S. Hunt for the photograph from which the above picture was made.

SAWDUST

Although woman is a natural bargain hunter, she does not care to marry a man in reduced circumstances.

—*Cartoons Magazine.*

First Woman: "It must be awkward to be as near-sighted as your husband is."

The Other: "Well, yes. Only the other day he took me for another woman and was awfully nice to me before he discovered his mistake."

Newcomer (in Greenwich Village)—"Is this place in Green-witch Village?"

The Tea-Room Pirate—"Yes, but we call it Granitch."

Newcomer—"Granitch, eh? Well, gimme a ham samitch."—*Williams Purple Cow.*

LOCAL FAME

After an absence of four years a certain man went back to visit his old home town. The first four people he met didn't remember him and the next three didn't know he had been away.—*Polo* (Mo.) *News-Herald.*

SAID A CUPFUL

Said a bald-headed man to a waitress bold:
"See here, young woman, my cocoa's cold!"
She scornfully answered: "I can't help that;
If the blamed thing's chilly, put on your hat."

—*Ex.*

PUTTING IT PLEASANTLY

Motorists entering the Ohio town of London see this sign:

"Drive slow and see our city,
Drive fast and see our jail."

—*Toronto Mail and Empire.*

A SPECIALIST

Dan: Elsie is an expert in sentimental anatomy.

Phyllis: How do you mean?

Dan: She makes a man lose his head, she takes his hand, and then breaks his heart.—*Edinburgh Scotsman.*

COMFORTABLE IN JULY

"I wish I had a place in your heart."

"Indeed!" she snapped.

"Yes," he retorted, "it is so delightfully cold."—*Boston Transcript.*

ONE ON THE CITY CHAP

Jim Jones was born in the city and while yet a young man went into the country to work on a farm. Did he ever tell you why he came back to the city to live? No? I don't blame him. Well, I'll tell you.

The second day he was on the farm he was called before dawn and told to harness the mule to the sleigh. He was too tired to light a lantern, and in the dark he didn't notice that a cow was in the stable with the mule. The farmer, impatient at the long delay, shouted from the house:

"Jones, what are you doing out there?"

"I can't get the collar over the mule's head," Jones yelled back, "his ears are frozen stiff."

A Service to Producers and Users of Wood Waste

Continued from page 95.

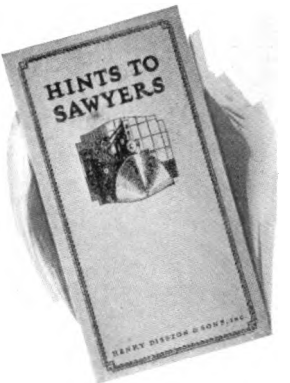
character, quality, and amount available.

None other than actual producers or consumers of wood stock of this character can become patrons of this Exchange. All communications should be addressed to the Director, Forest Products Laboratory, Madison, Wisconsin.

The DISSTON CRUCIBLE

NOVEMBER 1921

A Booklet You Should Have



A Book of Information

For the Users of Circular Saws

THE new "Hints to Sawyers" booklet is just what the name implies—a compilation of useful hints for men who are operating circular saws. Some of the chapter headings are :

"Saws Out of Round"
"Setting the Carriage Track and Husk or Saw Frame"
"Lining the Saw With the Carriage"
"Saw Guides"
"Proper Speed of Saws"
"Fitting Saws and Maintaining Them in Proper Condition"—Etc.

Hints to Sawyers Booklet

Real brass-tack information that should be of value to all users of circular saws. We will be glad to send the book free of charge.

Write for it. Address —

HENRY DISSTON & SONS, INC.
DEPARTMENT O
PHILADELPHIA, U. S. A.

DISSTON CRUCIBLE

A MAGAZINE FOR MILLMEN

VOL X. NOVEMBER, 1921 No. 10

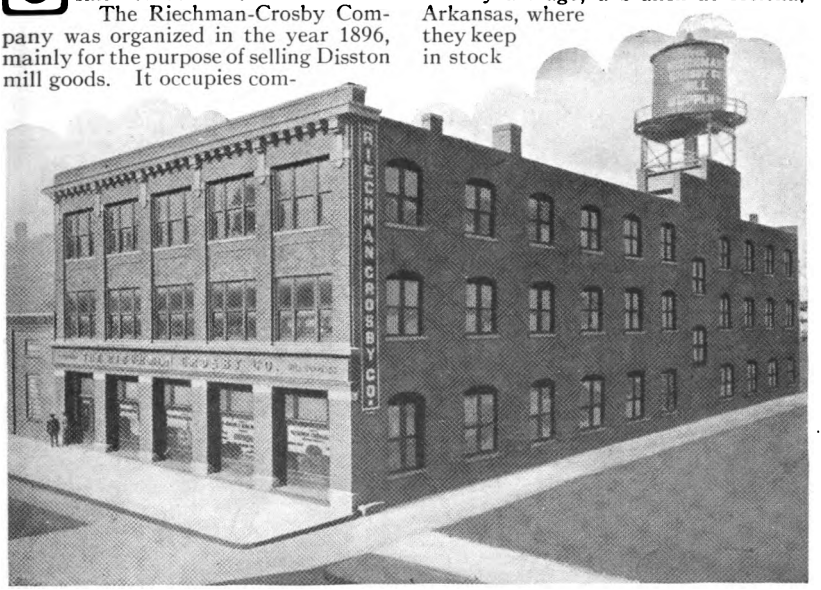
DISSTON MEMPHIS BRANCH IS OPERATED BY RIECHMAN-CROSBY COMPANY

Carry a Full Line of Disston Saws and Tools for Sawmills and Other Lumber Industries

Established in 1896

OF the twelve branch houses of Henry Disston & Sons, Inc., the Memphis branch was the sixth to be established.

The Riechman-Crosby Company was organized in the year 1896, mainly for the purpose of selling Disston mill goods. It occupies commodious quarters at 223-35 South Front Street. To better accommodate their ever increasing trade, they established some years ago, a branch at Helena, Arkansas, where they keep in stock



Disston Branch, Memphis, Tenn.

everything in the mill supplies line.

It is now about twenty-five years since Mr. J. A. Riechman and Mr. H. H. Crosby absorbed the interests of the Red Saw and Belting Company. Later Mr. W. M. Jameson became a member of the firm.

"Our original capital," writes J. A. Riechman, President of the firm, "consisted almost entirely of the confidence the House of Disston and several other prominent eastern manufacturers had in the success of the new organization, and their willingness to advance a small line of credit."

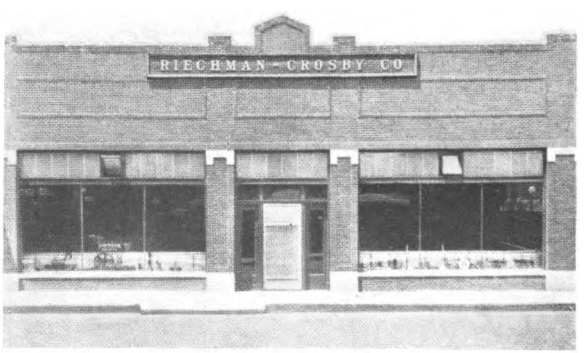
From this modest beginning the Riechman-Crosby Company gradually grew until at the present time they carry a stock approximating $1,000,000 in their Memphis and Helena plants.

The success of the firm is largely due to the high standard goods they handle, sound business methods, and the efforts of a corps of fourteen salesmen who comb their territory regularly and "religiously" for business. Through these agencies the Riechman-Crosby Company has established a trade in saws and tools for saw mills and other lumber industries which gives them precedence in their line throughout their entire territory, which is comprised of the state of Arkansas, Northern Mississippi, Eastern Oklahoma, West Tennessee, Southern Missouri, and a portion of Texas.

An up-to-date repair shop, and a machine shop, manned by skilled workmen is conducted for the benefit and convenience of the trade.

The company, in connection with its business, maintains an employment agency. Through this agency, all lumbering and milling industries (not only in the territory covered by them, but throughout the entire southern country), secure most of their skilled help—sawyers, filers, millwrights, engineers, etc. The most unique feature of this agency is free service to all. Many a man has been placed in a good position, and many employers have secured just the man they needed, through the Riechman-Crosby Company employment agency. Thus the firm keeps in personal touch with the lumbermen of the south, and consequently a spirit of good will exists between them.

Mr. W. M. Jameson, who associated himself with Messrs. Riechman-Crosby shortly after the firm was organized, died seven years ago. He has been succeeded by his son, Mr. Clifford F. Jameson.

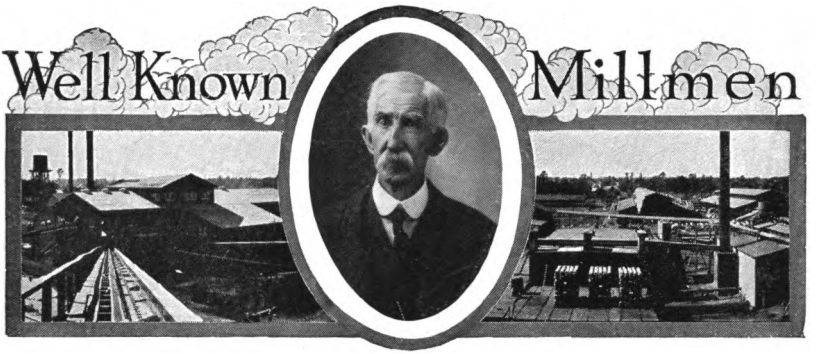


Helena, Ark., Branch of Riechman-Crosby Co.

Good Lumber Cut from Dead Trees

When sound dead trees are sawn into lumber, there is no method known to the United States Forest Products Laboratory by which the wood can be distinguished from that obtained from live trees. If the tree stands on the stump too long after it is killed, the sapwood is liable to become badly damaged by wood-boring insects, and in time the heartwood will be similarly affected. The heartwood of all trees is entirely dead, and only a thin layer of cells just under the bark is actually living, so most of the lumber cut is sawn from dead wood, whether the tree itself is dead or not.

—*Popular Science Monthly.*



MR. GEORGE REED FISH
HANCOCK, N. Y.

AN EXPERT ON SAWS

IN no business can a man become an expert over night,—that is, an expert in practice—not merely in title. But in some trades it takes even longer than in others. For instance, to become a saw expert takes many years.

Now and then we find a man who has mastered the intricacies of the band saw but who knows nothing about cross-cut saws; a man who may be the finest circular saw operator in "seven counties" but who is entirely ignorant of hand saws and their uses. But it is seldom that we find a man who knows about them all. And he must know them all, or he is not a saw expert.

The photograph above is of George Reed Fish, of Hancock, New York, who is a real saw expert. He has been using saws of all types, sizes, and makes for over fifty years. He is now 74 years old.

Mr. Fish has worked as sawyer and filer in most of the timber country of New York, and Pennsylvania, but most of his years have been spent as filer for different companies working timber along the Delaware River.

In his conversation with a Disston representative, Mr. Fish said:

"I honestly feel that I can call myself an authority on saws. I have worked with saws all my life. I can file saws, set them, swage them, hammer them. I know hand saws, circular saws, cross-cuts, or band saws. I have used all makes too, but I guess I always got along with yours best of all. Now I use nothing but Disston Saws."

Some years ago Mr. Fish perfected a cross-cut saw with a special tooth which is made by the House of Disston for Mr. Fish and his customers. He has not only used Disston Saws and Tools for many years, but for over 25 years he has sold Disston Saws and Tools.

At present a handle factory where axe, pick, sledge, and hammer handles are made occupies most of Mr. Fish's time. He is the sole owner of this plant and the reputation of his handles is growing rapidly.

It is a pleasure for the House of Disston to tell of the success of its old friends.

If you find a fire put it out if possible. If you can't do this spread the alarm by notifying the nearest fire warden.

Foresight is a qualification that comes to a human being when he becomes so old he can't look backward.

JACKMAN LUMBER COMPANY, JACKMAN, MAINE

Their Mill Has a Capacity of 70,000 Feet of Lumber Per Day

Perry and Whitney Company, of Boston, Mass., Handles Products of The Plant

BACK in 1915 the Jackman Lumber Company erected a modern double band mill up in Jackman, Maine, the state of lakes and forests. The state where the pine tree for years held precedence over all other trees in quantity, usefulness, and value, and which probably won for Maine the cognomen of the "Pine Tree State."

A stroll through these magnificent pine forests, with their pine-needle carpets, would have been sufficient to inspire Hayne to write:

"If mother nature patches
The leaves of trees and vines,
I'm sure she does her darning,
With the needles of the pines."

But the pine tree has had its day, and spruce now leads in quantity and demand in Maine, followed in order by hemlock, birch, poplar, and cedar; the latter being principally used for shingles.

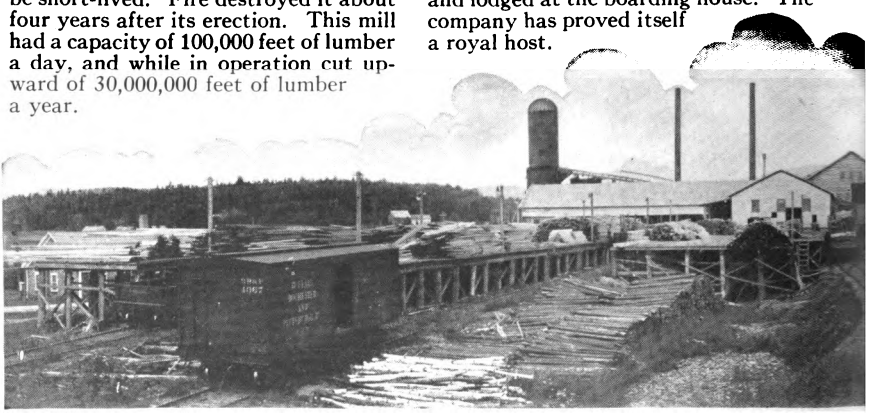
The Jackman Lumber Co's first mill—a double-band, was destined to be short-lived. Fire destroyed it about four years after its erection. This mill had a capacity of 100,000 feet of lumber a day, and while in operation cut upward of 30,000,000 feet of lumber a year.

In 1920 the double-band was replaced by a single-band mill, with a capacity at present of 70,000 feet a day. The Company added to its equipment in 1917 a shook mill. Later a shingle mill was added.

The Jackman Lumber Company has the reputation of producing high-quality lumber. Their entire output is handled by the well-known firm of Perry and Whitney Company, of Boston, Mass.

Mr. W. J. Foley is the present superintendent; J. L. Morse is filer, and J. H. Mayo presides at the levers. Jack McDonald, the "Larry Gorman" of Somerset County, has charge of the shipments. This quartette of lumbermen makes a combination which is indeed a valuable asset of the company.

A large boarding house, with all appliances for comfort and convenience is maintained by the Jackman Lumber Company for the benefit of their employees. Visitors to the camp are cordially received. They are also dined and lodged at the boarding house. The company has proved itself a royal host.



Jackman Lumber C

Virgin or Second Growth Not Good Timber Guides.

Specifications often call for "virgin growth" or "second growth" timber; yet the terms are without fixed significance and the material when delivered can not be positively identified as belonging to one class or the other.

"Virgin growth," also called "first growth" or "old growth," means timber which grew up in a standing forest under conditions of active competition for sunlight and moisture. "Second growth" usually means timber whose main growing period occurred under conditions of lessened competition, after all or a portion of the original stand had been removed by cutting, fire, wind, or other means. In connection with individual trees, the term is used to mean any whose growing conditions approximated those which would produce a "second growth" stand.

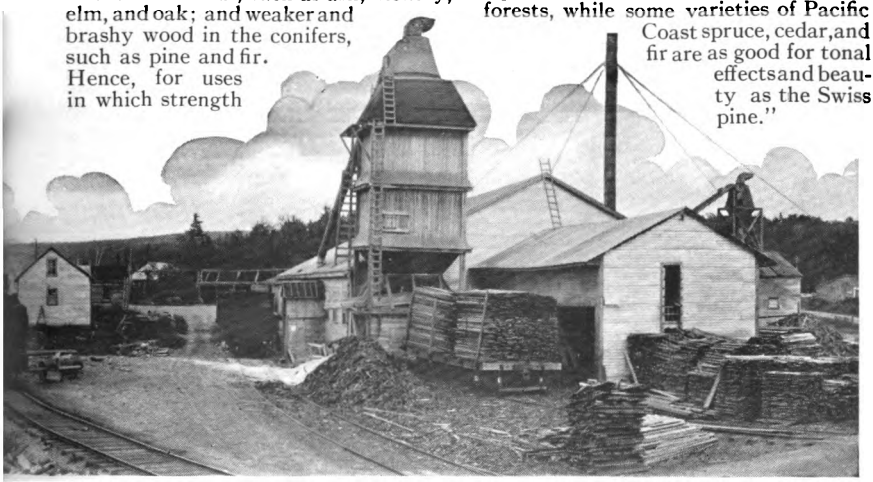
Virgin growth is generally thought of as slow timber, while second growth, due to more favorable conditions, is relatively rapid. A faster rate of growth is evidenced by wider annual rings. These are popularly supposed to indicate stronger and tougher wood in the hardwoods, such as ash, hickory, elm, and oak; and weaker and brashy wood in the conifers, such as pine and fir. Hence, for uses in which strength and toughness are essential, second growth is sought among the hardwoods, in conifers virgin growth is desired.

As a second growth forest attains maturity, the rate of growth slows up, and the annual rings may be no wider than in virgin growth timber of the same size. Therefore it is possible to have some wood with the characteristics of virgin growth, and some with those of second growth in the same tree.

Instead of broadly specifying "second growth" or "virgin growth" or depending upon requirements on the width of annual rings to secure good material, the Forest Products laboratory, Madison, considers it advisable to disregard rate of growth and rely upon density as a guide to quality.

Oregon Maple for Violins

A western firm is using a considerable quantity of Oregon maple, says *The Timberman*, in the manufacture of violins and other stringed instruments. L. R. Henderson, Lebanon, Ore., in getting out bolts for the company, during July, shipped more than 16,000 feet of maple, and also made a shipment of spruce lumber. "The curly maple of Oregon and Washington is in high respect," says Mr. Henderson. "It has beauty, fiber and tonal qualities equal to the material of the Tyrolean forests, while some varieties of Pacific Coast spruce, cedar, and fir are as good for tonal effects and beauty as the Swiss pine."



r, Jackman, Maine.

SOME OF THE CAUSES WHICH GIVE RISE TO COMPLAINTS AGAINST SAWS AND SAWMAKERS

This article is reproduced from our booklet—"Hints to Sawyers," copy of which will be mailed free to anyone interested, upon request.

Insufficient power to maintain regular speed.

Too thin a saw for the class of work required.

Not enough, or too many, teeth for the amount of feed carried.

Weak or imperfect collars.

Collars not large enough in diameter.

Ill-fitting mandrel and pinholes.

Uneven setting and filing.

Points of teeth filed with a "lead," not square across.

Not enough set for proper clearance.

Too much hook or pitch of teeth.

Irregular and shallow gullets.

Out of round and consequently out of balance.

A sprung mandrel, or lost motion in mandrel boxes.

A carriage track neither level nor straight.

Carriage not properly aligned with saw.

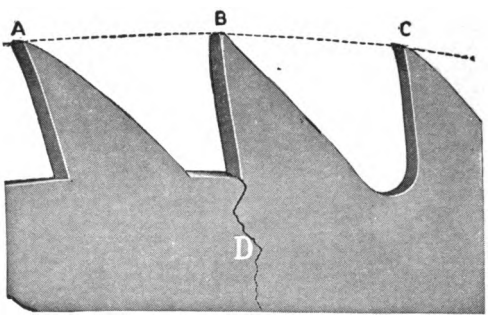


Fig. 1

Lost motion in carriage trucks.

Heating of journal next to saw.

Guide-pins too tight or not properly adjusted.

Backs of teeth too high for clearance.

Attempting to run too long without sharpening.

The most general cause of trouble is a *dull saw.* To give proper results circular saws must be kept perfectly round, uniformly set and well sharpened.

Care should be taken to maintain the proper shape of points. This can be done readily by the use of a Jumper or Upset.

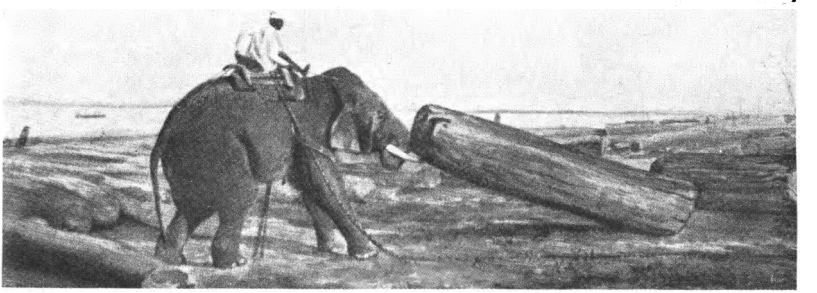
It will be observed in the cut, Fig. 1, that in addition to having sharp corners in the gullets, teeth A and B are very dull, tooth C shows how the points and gullets should be dressed. The gullets should be kept rounded out, either with a gummer or a file.

A tooth becomes dull on its face in proportion to the depth of cut taken at each revolution of the saw; for instance, when each tooth cuts a thirty-second of an inch, it takes thirty-two teeth to cut one inch, whereas when each tooth cuts one-sixteenth of an inch, it takes only sixteen teeth to cut the same distance. In other words, the fibre or grain of the lumber has to be broken thirty-two times in one instance and only sixteen times in the other. When the tooth starts to break the fibre one-sixteenth of an inch in the log, it will do it with nearly as much ease and consume little more power than if the cut were a thirty-second of an inch per tooth.

Of course, in this example, one tooth becomes dull for one-sixteenth of an inch under the point and the other only one thirty-second of an inch, but to bring up one tooth consumes nearly as much saw plate, time, and files as the other. It is, however, easy to give too little or too much feed; judgment should be used in this as in everything else. The greatest amount of feed that the saw and power will take care of readily, is the best feed for the saw.

A few minutes filing two or three times a day will save much of the

Continued on Page 104



A "TUSKY" LUMBER-JACK

Asiatic Elephants Trained To Move and Pile Lumber

Illustrations from Raphael Tuck and Sons' post cards sent from India to the CRUCIBLE editor by our Mr. A. S. Hunt

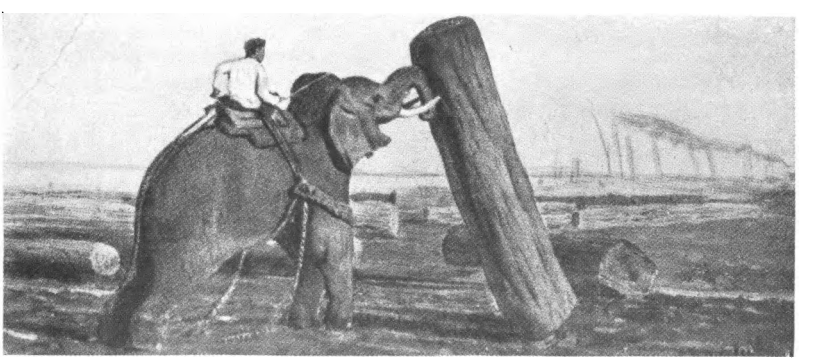
THE Asiatic elephant bears a world-wide fame for his capabilities as a servant and companion of man, and for the extraordinary development of its intellectual faculties.

In moving and piling logs, for example, the elephant even learns the proper mode of arrangement, and will place them upon each other with a regularity that would not be surpassed by human workmen.

The elephant tusks are natural cant hooks; and the trunk is a veritable steam hoister. It is said a powerful elephant can lift and carry on its tusks a log of wood weighing half a ton. The simple harness arrangement shown in the picture, to which two chains are attached, is used in dragging great logs into position to be piled or sawn.

In the far east it is a common sight to see elephants moving logs and piling lumber. The British government owns quite a herd of them, which are used for all kinds of rough, heavy work.

One of these lumbering lumber-jacks would be quite an attraction in the pine forests of the south, or in the great red wood sections of the Pacific Coast.



SAWDUST

"Here comes a friend of mine. He's a human dynamo."

"Really?"

"Yes, everything he has on is charged."

Knicker—"That florist surely keeps in touch with the slogan, 'Say It With Flowers.' "

Knocker—"What's his method?"

Knicker—"Sends a bunch of forget-me-nots with each bill."

A NEW BREED

"The poet I pointed out to you at the dog show is very peculiar in some ways. He has a perfect passion for dactyls."

"Did he have any of 'em on exhibition there?"

THE GREAT UNEMPLOYED

"I tell you, my boy," earnestly remarked the benign old professor, "it doesn't pay to be crooked."

"I realized that," the bright student replied. "Look at all the cork-screws out of a job."

THE FRETFUL SEA

Lady Passenger—"Why do we so often have an angry sea?"

Captain—"Perhaps, madam, because it is so often crossed."—*Mt. Vernon-Woodberry News.*

INTERNATIONAL DIET

Two Tommies, turned punsters, went into a restaurant over on the eastern front and said to the waiter: "We want Turkey with Greece."

The waiter replied: "Sorry, sirs, but we can't Servia."

"Well then, get the Bosphorus."

The boss came in and heard their order and then said: "I don't want to Russia, but you can't Roumania." So the two Tommies went away Hungary.

—*Commerce and Finance.*

A WAY OF THEIRS

"Bills have one queer quality."

"What is it?"

"The more you contract them, the more they expand."

AND IS INFINITIVE

Teacher to young miss: "Parse the word kiss."

Y. M.: "This word is a noun, but is usually used as a conjunction. It is never declined, and more common than proper. It is not very singular. in that it is usually used in the plural. It agrees with *me.*"—*H. F. Hyson.*

SCORE ONE FOR ADE

George Ade had finished his speech at a dinner party, and on seating himself a well-known lawyer rose, placed his hands deep into his trousers' pockets, as was his habit, and laughingly inquired of those present: "Doesn't it strike the company as a little unusual that a professional humorist should be funny?" When the laugh had subsided Ade drawled out: "Doesn't it strike the company as a little unusual that a lawyer should have his hands in his own pockets?"

—*Exchange.*

Some of the Causes Which Give Rise to Complaints Against Saws and Sawmakers

Continued from Page 102

time and labor otherwise expended in running a dull saw, and effect a saving in the power consumed, increase the output, and improve the quality of lumber manufactured.

Do not file square corners in the gullets of the saw, as it is very liable to cause breakage as shown at D in Fig. 1, particularly in frosty weather, or when the teeth are dull. *Our warranty does not cover saws broken from sharp corners filed in the gullets.*

The DISSTON CRUCIBLE

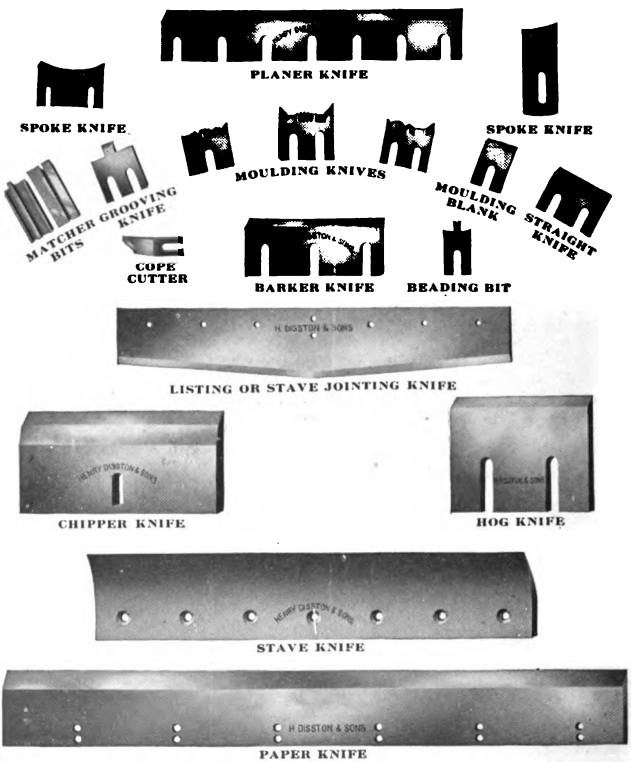
DECEMBER 1921

A Merry Christmas

DISSTON

SAWS TOOLS FILES

Machine Knives and Cutters



You want knives that will give satisfactory service and be the most economical for your use. Because *Disston Knives* have met these requirements for other users year after year, we know they will do it for *you*. May we tell you more about them? A letter addressed to "Department O" will have immediate attention.

DISSTON CRUCIBLE

A MAGAZINE FOR MILLMEN

VOL X. DECEMBER, 1921 No. 11

DISSTON SAN FRANCISCO BRANCH

Circular Saws, Band Saws, Cross-Cut Saws, and Their Accessories, Machine Knives, Etc., Carried in Stock

THE latest branch to be established by Henry Disston & Sons, Inc., is located at 144 Second Street, San Francisco, California. It has been operating since January 1, 1921.

Two other branches have been for years supplying our trade on the Northern Pacific Coast. One at Seattle, the other at Portland. These branches are situated at strategic points in the great lumber districts of the northwest, and greatly facilitate the transaction of business.

The House of Disston concluded that the redwood and pine-forest sections of California, the many saw and planing mills, and numerous other industries in and contiguous to San Francisco should have the same convenient access to supplies as the trade in the northwest, hence the San Francisco branch was established.

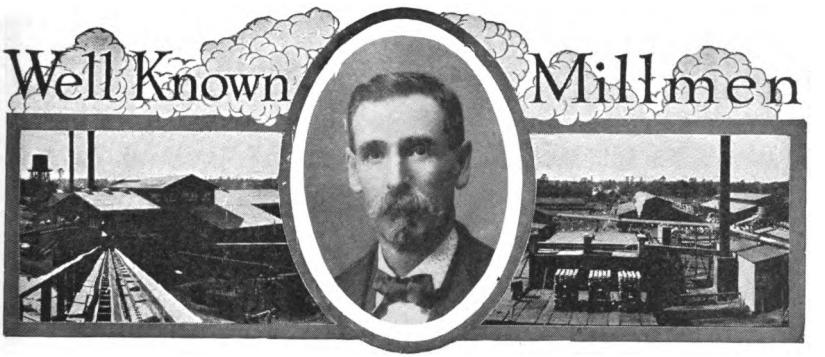
Much rough lumber obtained from Puget Sound, Grays Harbor, Coos Bay, and other points in Washington and Oregon is cut into planks, boards, scantling, etc., in the San Francisco branch

(Continued on Page 112)

Disston San Francisco Branch.

Everyone in our company wishes every reader of the Crucible a Merry Christmas and a Happy New Year

Frank Disston
Henry Disston
D. Horace Disston
E. B. Roberts
Hamilton Disston
Wm. D. Disston
Wm. S. Armstrong
H. C. Ellis
John A. McCausland
W. A. Chenoweth
W. R. Kendall
G. A. Baude
G. W. Eckhardt
Lyle B. Chase
Wm. A. Baude
Joseph Biles
Chas. T. Evans
H. K. Zimmerman
S. Y. Singer
Sydney H. Batty
L. L. Mather
J. A. Larned
A. W. Jenkins
James Kay



MR. FRANK VAN TASSEL

A PIONEER BAND SAW FILER

BORN in Chautauqua County, New York, near Chautauqua Lake, in 1849, Mr. Frank Van Tassel can readily be classed as a pioneer band saw filer; and as the band saw became commercially practical just about the time Mr. Van Tassel went to work in his father's saw mill, which was at an early age, it could be said of him that he grew up with the band saw.

At the age of twenty, Mr. Van Tassel had gained sufficient knowledge of sawing and filing to assume charge of the Dawner Lumber Co. mill in Perry County, Pa. He remained with this firm three years, then associated himself for a number of years with the Paine Lumber Company, in the state of Wisconsin.

In the year 1889, Mr. Van Tassel went to Memphis, Tenn., and took charge of the filing room of the Bennett Lumber Company. This company was one of the first to erect a double-band mill in the south. At that time there were only two band mills in Memphis. It was while filing for the Bennett people that our Mr. L. L. Mather, who furnished the data for this article, became acquainted with Mr. Van Tassel.

His next position was in Greenwood, Miss., where he remained about three years, when he was obliged to return northward on account of a yellow fever epidemic. The Three State Lumber Company in southeast Missouri then secured his services.

In turn, Mr. Van Tassel filed for A. J. Darnell, Inc., and the McLean Lumber Company, both of Memphis, Tenn.

About twenty years ago he moved to Chattanooga, Tenn. and took charge of the band saws in the mill of Loomis & Hart Mfg. Co., where he has been almost continuously since. This mill is now being operated by the Blair Lumber Company.

Mr. Van Tassel says that he has used more Disston saws and obtained better service from them than from any other make, during his long career as a mill man.

Most all of the mills in which he has filed during the past twenty-five or thirty years have sawed timber which had been rafted with chain dogs, and it is safe to say that Mr. Van Tassel has filed as many saws which have cut through chain dogs, as any other living filer.

While he is an expert in filing and mill mechanics, Mr. Van Tassel is a millwright of no mean ability. He has built two or three large plants, besides making all his mill repairs and adjustments.

The House of Disston extends greetings to Mr. Van Tassel, and hopes his declining years will be the very best years of his life.

SCANDINAVIA IS SCENE OF DISSTON CROSS-CUT SAW DEMONSTRATIONS

Foresters, Lumbermen, and Millmen of Denmark, Norway, and Sweden Convinced of the Superiority of Disston Saws

Danish foresters, with Mr. Baumann, Disston demonstrator, inspect 60-year-old beech tree forest.

DENMARK, Sweden, and Norway, in their early history, exercised a deep and lasting influence on Western and Eastern Europe. They helped to build up the Empires of England, France, and Russia. The Vikings contributed virile and adventurous elements to the composite stock of the English. In France they became crusaders and builders of cathedrals. They sent out leaders of men on the Siene and Thames, and also on the Dnieper. They gave Russia her name and governed her, few though they were in number; and it is believed by many that Scandinavia is the true home of the Teutonic Race.

Scandinavia, which is a collective term for the three Kingdoms—Denmark, Norway, and Sweden, is still inhabited by a hardy people, whose characteristics are courage, perseverance, honesty, good common sense, equable temperment, and good nature.

Of the land of these three kingdoms a large area is covered with beech and pine forests. Sweden leads with about 52 percent, Norway next with about 21 percent, and Denmark with about 10 percent.

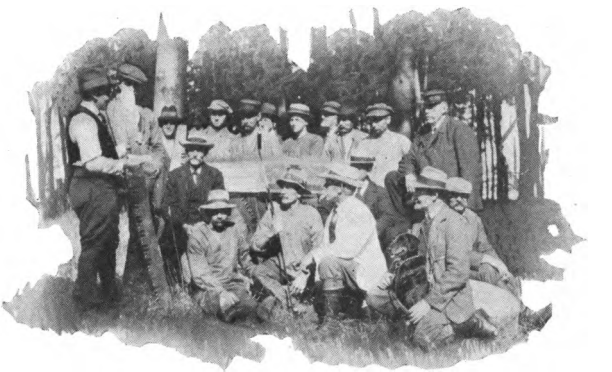
A considerable portion of the industries of this tri-kingdom section is dependent on its forestry production, hence many of the Danes, Swedes, and Norsemen are foresters, lumbermen, and millmen.

It was in these beech and pine forests that our Mr. William J. Baumann, himself a Dane, demonstrated the merits of Disston high-grade cross-cut saws and saw tools.

Foresters, lumbermen, and millmen from various sections assembled from time to time at different places to wit-

ness practical tests. They had never seen a high-grade Disston cross-cut in action, and were somewhat skeptical of the claims made for them. But these men came to see and learn.

Before the tests, the saws were subject to numerous criticisms. It was the opinion of some that the teeth in the saws were too far apart; others thought there were not enough teeth while some of the millmen suggested there was not enough set to the teeth.



Scandinavians interested in the explanation of Disston quality and efficiency, and correct method of filing high-grade cross-cut saws.

However, the skepticism was short-lived, and the criticisms were quickly superseded by words of praise, looks of agreeable surprise, and manifestations of intense interest, as the Suwanee, Virginia, Buzz, Toledo, and other saws of Disston make "raked" their way through the tough beech logs at a speed hitherto unknown to these practical and efficient woodsmen and millmen.

As saw after saw of other makes was out-classed our Scandinavian friends warmed up to the Disston Saws, and soon became enthusiastic over their superior work. On more than one occasion men offered to "swap" several of their best saws for one Disston high-grade cross-cut.

At one of the demonstrations an old gentleman suggested there was something wrong with the Disston saws because they made no sawdust. "Shavings!" shouted another as he gathered a handful of the coarse, fibrous chips raked from the kerf and examined them with much interest.

A "sharp eye" is a most valuable asset to the Scandinavian millman, as correct filing and regular set depends almost entirely on his optics. But these demonstrations also developed the fact that the Disston Imperial Saw Tool is more dependable than the eye for quick, accurate, uniform work. The Imperial Saw Tool was received with the same enthusiasm as the Saws.

The Disston improved cross-cut saw

(Continued on Page 111)

Mr. Baumann overlooking Dramen the oldest lumber town in Norway, and the home of many saw and paper mills.

CUT-OFF SAWS MUST BE PROPERLY FILED AND SET TO SECURE BEST RESULTS

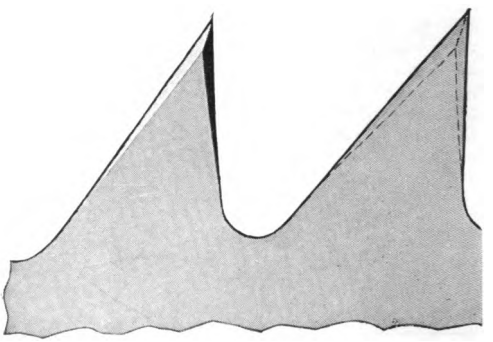
Same Style Tooth Should Not Be Used on Both Soft and Hard Woods

This article is reproduced from our booklet—"Hints to Sawyers," copy of which will be mailed free to anyone interested, upon request.

The proper shape of tooth for cross-cutting soft wood is shown in illustration A.

Illustration B shows the best tooth adapted for cutting hard wood. Space of teeth, or distance from point to point, is governed by conditions.

Cut-off saws, with the front of the tooth undercut into a round gullet, are the best (see illustration G). If the teeth are kept in this form, less time will be required for filing, and the bad results from running a dull saw will be prevented. Use as little set as possible. File as soon as the saw becomes dull, thus saving time and power, reducing the strain and liability of breakage of the saw.

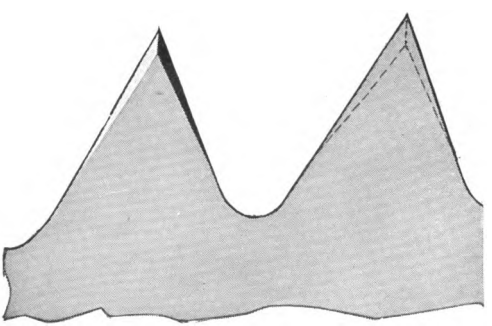


A

We can furnish cut-off saws with rounded or undercut gullets, as shown in Fig. G, and give any desired amount of rake or space of teeth.

The great loss because of breakage of circular cross-cut or cut-off saws to the mill-man and manufacturer of saws induces us to call particular attention to the general neglect in the keeping of these saws in order for the work they have to perform. The same care is not given to cut-off saws as is given to larger saws for ripping lumber.

Nearly every case of broken cut-off saws that has come to our notice has been caused by the careless manner in which they have been filed or gummed. If the time, labor, and files consumed in filing the long bevel down the backs and fronts of teeth were used in filing the gullets down with a round file or cutting them out carefully with a round faced emery wheel, many saws would be saved and much less power consumed. Filing long bevels on the teeth forms square notches in the gullets which not only cause cracks to start, but also prevent free circulation of sawdust. See illustration C.

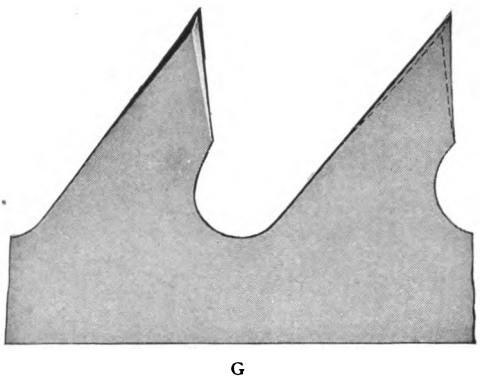


B

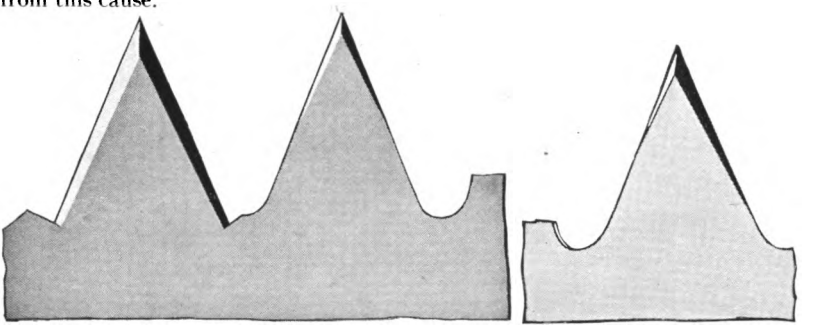
The bevel on cross-cut saws should never extend into the gullets; in fact only a small portion of the tooth from the *point* needs beveling. The

remainder of the tooth and gullets should be dressed straight across as shown in illustration D.

In heavy cutting the *front* of the tooth should be filed with very little bevel, and the bevel on the back increased to compensate for the lack of bevel on the front. See illustration E. This will prevent much of the lateral strain and chattering caused when the teeth are forced out of line into the sides of the cut. Saws, particularly if they are dull, are frequently broken from this cause.



G



C D E

Scandinavia is Scene of Disston Cross-cut Saw Demonstration

(Continued from Page 109)

handle also came in for its share of favorable comment as the sturdy descendants of Cnute, Valdemar, and the Vikings had their try with the "remarkable" saws from over the "big pond."

On the Island of Langland and Fyn some fifty prominent forestry officers, lumbermen, and millmen witnessed a demonstration. They, too, were quick to recognize the superiority of Disston Saws and Saw Tools, and the benefits that will result from using them.

Mr. Baumann had prepared for the occasions illustrated folders in the Danish language, on the "Care of Cross-cut Saws" and "How to Use the Imperial Saw Tool," and it proved very satisfactory to the mill and lumbermen to have this data in their own language.

Saw Hints for Cold Weather

As many saws are broken in winter, owing to the great risk in sawing frozen timber, the greatest care should be taken to prevent any undue strain. Keep the points out full, square and sharp, or the saw will dodge out of the cut, particularly in slabbing. as the corners on the log side do the most cutting and soon get dull in sawing knotty frozen timber. Use no more set than is absolutely necessary. Have the teeth widest at the extreme points, but do not have them weak; taper the set nicely from point to back. Sharp corners should never be filed in the gullets as cracks are sure to start from such misuse of the saw, particularly in cold weather.

SAWDUST

Sambo—"Say, Rastus, somethin' funny happened to me last night."

Rastus—"Dat so?"

Sambo—"Yes, las' night I dreamed I was eatin' shredded wheat, an' when I wake up, half my matras was gone."—*Exchange*

AN OPTIMIST

The old lady, accustomed to giving her "testimony" at prayer meeting, had seemingly exhausted her reasons for being thankful, but surprised the congregation one evening by saying: "I have many mercies to be thankful for. I thank God for my two remaining teeth, but I especially thank Him that they hit."—*Exchange.*

A BOOMERANG

The husband, who had a great habit of teasing his wife, was out driving in the country with her, when they met a farmer driving a span of mules. Just as they were about to pass the farmer's rig the mules turned their heads toward the auto and brayed vociferously.

Turning to his wife, the husband cuttingly remarked, "Relatives of yours, I suppose?"

"Yes," said his wife sweetly, "by marriage."—*Exchange.*

FORESIGHT

Mr. MacTavish attended a christening where the hospitality of the host knew no bounds except the several capacities of the guests. In the midst of the celebration Mr. MacTavish rose up and made the rounds of the company, bidding each a profound farewell.

"But, Sandy, man" objected the host "ye're not goin' yet, with the evenin' just started?"

"Nay," said the prudent MacTavish "I'm no' goin' yet. But I'm tellin' ye good night while I know ye all."

—*Chicago Herald.*

UNLIMITED ABILITY

The town band had been royally entertained in a neighboring village where a concert had been given. On the train home the conductor had some trouble getting the ticket of one of the musicians. After several futile attempts to get his fingers into his vest pocket, the musician gave it up and announced:

"I've losht th' dang thing."

"Come, come," ejaculated the conductor encouragingly. "You couldn't lose a thing like a railroad ticket."

"Oh, I couldn't, hey?" retorted the other with indignation. "Y' don' know me. I jusht losht the bass drum, thass what I did."

Disston San Francisco Branch

(Continued from Page 105)

district. Many of the largest wood box factories in the country are located in California, principally to supply the needs of the fruit growers. There are also many woodworking and other plants, from which there is coming an ever-increasing demand for supplies. It is readily seen that in the establishment of the branch at San Francisco, easy access is had to these supplies, at the saving of much time and freight costs.

Circular saws, band saws, long saws, in fact any kind of saws, as well as all of their accessories, used in lumbering and mill work are kept in stock, also machine knives, etc.

The San Francisco branch gives special attention to the trade in California, Arizona, New Mexico, Nevada, and Southern Oregon, through correspondence and capable salesmen, who call on the trade.

Mr. A. F. Kennedy is local manager of the branch. The three Pacific Coast branches are all under the supervision of Mr. D. W. Jenkins.

The DISSTON CRUCIBLE

JANUARY 1922

Important Information for Users of Chisel Tooth Saws

This is the season of the year when preparations must be made for cutting frozen timber—when saws are called upon to do their hardest work.

This is the time when saws must be *sharp*—and to do good work, must be of such material, temper, and workmanship, that they will stay sharp.

To cut frozen timber successfully, you must have, first of all, a *good* saw. A Chisel Tooth Saw is a *fine* tool. Disston Chisel Tooth Saws are made with great care;—in material, in tension, and in workmanship, special attention is given to make them just right.

It was because of this Disston quality in material and workmanship that John M. Tennis was able to use Disston Chisel Tooth Saw, No. 29857, eight and one-half years—most of the time in "flitched" lumber and part of the time cutting trees from an old picnic ground that were full of staples.

Before starting to cut frozen timber, it will pay you to equip your old saws with new *swaged* holders, and lay the old ones aside until next summer. You will find the new holders will be a mighty profitable investment. The swaged holder is heavier in the throat than is the saw plate proper and, therefore, will carry out the fine dust, which would otherwise pass down the side of the saw, freeze to log, and force the saw out of line.

This year, start with the proper equipment! Let us help you. Disston Saws and Disston Holders or Teeth will give you real cutting service. Would you like additional information? A letter addressed to Department O will have immediate attention.

Henry Disston & Sons
Incorporated
Philadelphia, U. S. A.

DISSTON
SAWS TOOLS FILES

DISSTON CRUCIBLE

A MAGAZINE FOR MILLMEN

VOL X. JANUARY, 1922 No. 12

DISSTON REPRESENTATIVE HAS INTERESTING EXPERIENCES IN INDIA

Climate, Customs, and Languages Prove Knotty Problems

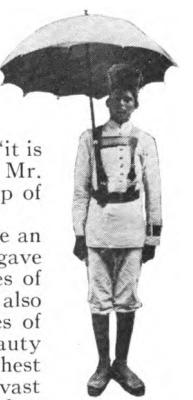
Disston Saws, Tools, and Files Popular in the East

MR. A. S. HUNT, who is making a trip through the Orient, in the interest of the House of Disston has encountered many interesting, unique, humorous, and health-testing experiences.

The climate and water seem to be Mr. Hunt's "chief offenders" thus far on the trip, for twice he has been stricken with fever, first at Bangkok, Siam, and again at Calcutta, India.

Heeding the injunction that "it is not well for man to be alone," Mr. Hunt enjoys the companionship of his wife on the trip.

From Bombay he wrote quite an interesting letter, in which he gave us some idea of the vicissitudes of the traveler's life in India. He also tells of the wonderful resources of this great country, and the beauty of its scenery from the highest mountains in the world to the vast river deltas, raised only a few feet above sea level.



A Native India Policeman

It is said that if you could look down from an airplane it would be seen that India consists of three separate and well-defined tracts. The first includes the Himalaya mountains, which shuts if off from the rest of Asia; the second stretches southward from the base of the Himalayas, and comprises the plains and great rivers which issue from them; the third region slopes upward again from the edge of the river plains and consists of a high three-sided table land, supported by the Vindyah mountain on the north, and the Eastern and Western Ghats.

Following are extracts from Mr. Hunt's Bombay letter:

"We have to be very careful what we eat and drink. Since leaving Calcutta about six weeks ago we have had only sodas to drink—the water is not good. All water for drinking purposes is supposed to be boiled and filtered.

"India is a great place but it will drain the life out of you. You cannot walk for the heat is too great. Europeans are obliged to be conveyed from place to place in motor cars and carriages.

"Bombay is a real city. Has fine, large stone buildings. The newer buildings are concrete. The roads are fairly good, but dusty. Use up two white suits a day.

"Can you imagine going to the picture show in dinner jacket, and ladies with their evening clothes on? That is

the way here. Dinner is served about 8.30 P. M. and 9.30 you are off for the picture show. Seemed very odd at first.

"While calling on some of the trade in Calcutta in a taxi, the driver was instructed to go to Lall Bajar Street. Police headquarters are on this street, right opposite the firm I wished to see. The driver insisted that I wanted to see the police, and drove up to the office. He jabbered away in Hindustania and "yours truly" in English and the sign language; and there we were until an English police sergeant appeared on the scene and took pity on me.

"Since leaving San Francisco we were obliged to attack the following languages: Japanese, Chinese, Cantonese, Spanish, and several dialects, Malay, Siamese, Assamese, Tamil, Hindustania, Bengalia, French, Dutch, and German."

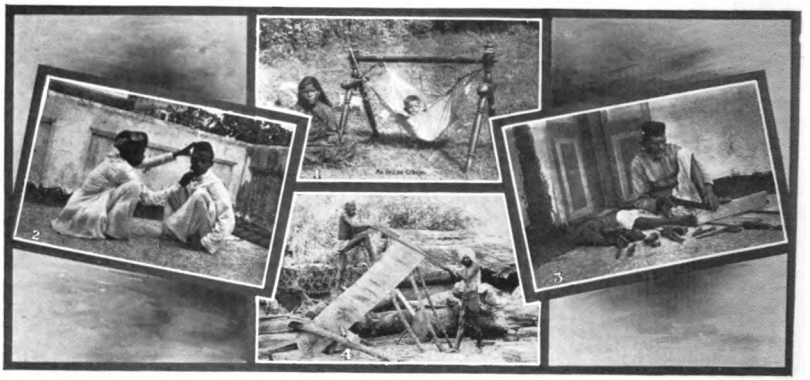
Mr. Hunt has been kind enough to furnish us views of some of the unusual ways of doing things in India. In the illustration above we present four of them:

No. 1. An Indian Cradle. This cradle, like many other articles in wood, are made with very crude tools. The workman will come on the job with his wooden turning lathe, tools, and whole outfit on his head. Rather a finished product for crude tools.

No. 2. A Barber. Not much paraphernalia required in this barber shop. Mr. Hunt states he has not tried this method of shaving.

No. 3. A carpenter from the Bombay section. In other sections of India saws are different.

No. 4. Indian Native Sawyer. They, like the Chinese and Filipino, handle their web saws with rare skill. The sizes used in India are 3, 3½, 4, 4½, 5, 5½, and 6 feet in length, 4 inches wide, and 20 gauge. No waste except a little sawdust.



Quaint Customs of India Natives

Notwithstanding the quaint methods and crude tools employed by the India natives, they are remarkably skilled workmen. Some of their manufactures are the finest in the world.

Many temples and other buildings in India are marvels of architecture, art, and mechanical skill.

Obedience

You want to realize this. You do not learn much unless you are willing to learn, and that means obedience. "No one has learned to rule who has not learned to obey well." Obeying orders, carrying out instructions right, does not mean carrying out instructions in a leaden, dead way. Some men are so obedient that the organization suffers because their obedience is not tempered with thought and judgment.

CUTTING AND USE OF CHRISTMAS TREES

A Wholesome Pleasure and An Economic Advantage, Say Some Authorities

THE Christmas Season of 1921 is past, and between four and five million trees which were used to decorate the homes in Uncle Sam's domain have been dismantled and discarded.

These trees were of the pine, spruce and fir species, principally, but undoubtedly the latter was the Christmas Tree par excellence, especially in the northeastern and Lakes sections of the country, on account of its long, horizontal, spreading branches, and deep green, fragrant foliage, which persists longer than that of any other of the evergreen trees.

As one observes these trees, shorn of their beauty, being carted through the streets and relegated to some refuse pile, the question is very commonly raised as to whether the cutting and use of these trees for Christmas purposes is not a great waste, and whether steps should not be taken to discourage or prohibit it.

It is the opinion of some who have given the subject much thought that the custom is so old, so well grounded, and so venerated, that even if it were somewhat indefensible from an economic standpoint, these aspects would and should continue to outweigh economic consideration. They are not willing to admit, however, that pure economic conditions would lead to the abandonment of the Christmas-tree custom. Trees are for use, they argue, and there is no other use to which they could be put that would contribute so much to the happiness of mankind as their use for decorative purposes during the great festal season of the year. The mental and physical effect on the little folks is beneficial beyond monentary calculations. The thrill of joy to both young and old, as they view the bespangled tree on Christmas morning, and during the holidays, sends a floodtide of health through their systems; and this bit of nature in the house also creates an atmosphere which is conducive to the real Xmas spirit.

Furthermore, in the northeastern states, particularly, a large portion of the Christmas trees are cut from pasture lands, on which they are encroaching, or from which they would be cleared off in the ordinary course of farm improvement. The trees would be cut in any event. A market for them gives the owners some return for their labor, if nothing more.

Maine, New Hampshire, Vermont, the Berkshire Hills in Massachusetts, and the Adriondacks and Catskill in New York State are the sources of supply for New York, Philadelphia, Boston, Baltimore, and Washington. The swamps of Michigan, Wisconsin, and Minnesota furnish the markets of Chicago, St. Paul, Minneapolis, and the cities of the plain states. Throughout Illinois and Ohio nurserymen partly supply the local demand with nursery-grown Norway spruce.

That the use of Christmas trees is perfectly compatible with the welfare of the forest is fully proved by the practice in the European forests. The cutting of small trees for Christmas is not there considered in the least as a

(Continued on Page 118)

CARE OF BAND SAW TEETH

Disston Experts Suggest Remedies for Many Disorders of Band Saw Teeth

This article is a reprint from *Disston Lumberman's Handbook*

IF the saw chatters in the cut, runs snakey at times, and does not make the lumber as smooth as it should, the difficulty may be in carrying too much swage, particularly when sawing hardwood. Usually about three gauges more than the thickness of the saw is sufficient. Sometimes even a trifle less than this will work satisfactorily provided the blade is perfectly flat and evenly tensioned. Make sure that the teeth are properly dressed after swaging, otherwise they soon become dull, or the slender corners drop off.

The eccentric swage, in forcing out the corners, causes a depression or dent just under the points of the teeth. To face the teeth properly the fronts of the teeth must be ground sufficiently to take out most of this depression and to thicken the points to the required stoutness with which to stand the shock of cutting through knots without dropping corners. Swage just enough—no more—to get a dressing on the corners. If too much, the points will buckle when shaped. By compressing more than is necessary the points are apt to be injured, causing them, in many instances, to drop off. Therefore it is best to swage lightly and it will not be necessary to shape heavily.

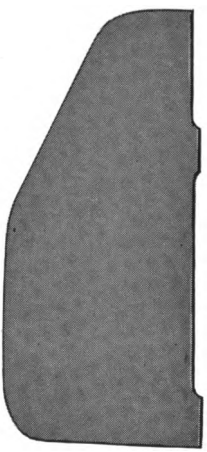


Fig. 100. The set gauge

When the teeth are all thoroughly swaged and shaped, examine with a set gauge (see Fig. 100) to see if any are bent. Test by holding the gauge on each side alternately as shown in Fig. 101. If any of the teeth are out of line, bend them with a set wrench as in Fig. 102, to the right or left as may be required, until all are even. Extreme care should be taken to have all the teeth in perfect line, for any of the teeth, if even slightly bent, will cut roughly, and in passing through the board will naturally incline out of the cut, frequently breaking off.

After the teeth are nicely swaged, shaped, and straightened, the saw is ready for the automatic sharpener. Unless care is used in operating this machine all the good work just done will be spoiled. Bear in mind that the points are delicate. *Do not try to get the work done in one time around the saw,* but cut lightly several times until the teeth are well faced. This does not mean to take out all the depression made by the swage, but most of it. Of course, enough cutting must be done on the gullets and on the backs to keep the teeth in shape, and ground to point, as the automatic sharpener will keep the teeth even when all are brought up to a cutting edge. If they are not ground to point there will be high and low teeth.

Remember that too slender a tooth will cause chattering in the cut, and will make "wash-board" lumber.

Look after the sharpener frequently. Do not allow lost motion. Remember that emery dust will get into the running parts and cut. If this is not cleaned out the machine soon will be missing the teeth.

Grind the entire surface of the tooth and the gullet every time in order to present new steel to the work after each sharpening operation.

Having each tooth in a band saw of

the same width is quite as important as having them of a uniform length.

Our swage shaper is the best tool for this purpose on the market. It combines solidity with simplicity, and has very few parts to get out of order. No wrench is necessary; the shaper can be taken apart by the loosening of three thumb-screws. The dies fit snugly in the body, and will not twist or come out of line.

All wearing parts are made of the best tool steel, accurately machined and milled to a perfect fit.

This swage shaper is designed to make all the teeth uniform in width and at the same time to give them the "back" and "under-cut" necessary for proper clearance and smooth sawing.

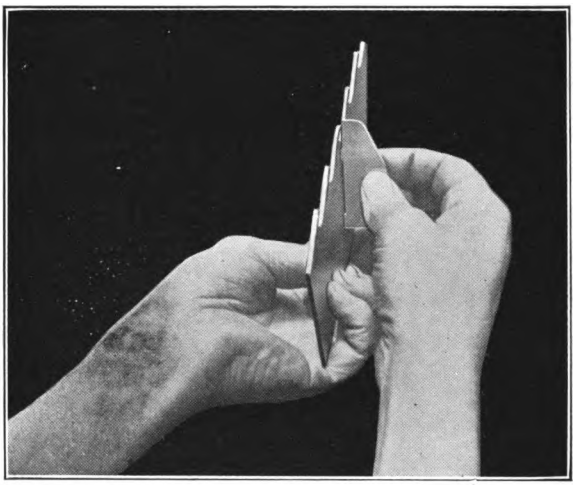


Fig. 101. Application of set gauge

It can be adjusted readily to shape the teeth on saws of any thickness, rapidly.

Do not neglect your swage shaper. Examine it from time to time, after considerable use, to see if the dies are becoming worn by reason of the saw teeth frequently coming in contact with the same spot. If they are worn, then the swage on the teeth is not given sufficient back clearance to allow the side-dress to do its work without unnecessary friction. A saw with teeth improperly side-dressed will run "snakey." Keeping the dies in good condition and properly adjusted means a saving in labor and expense.

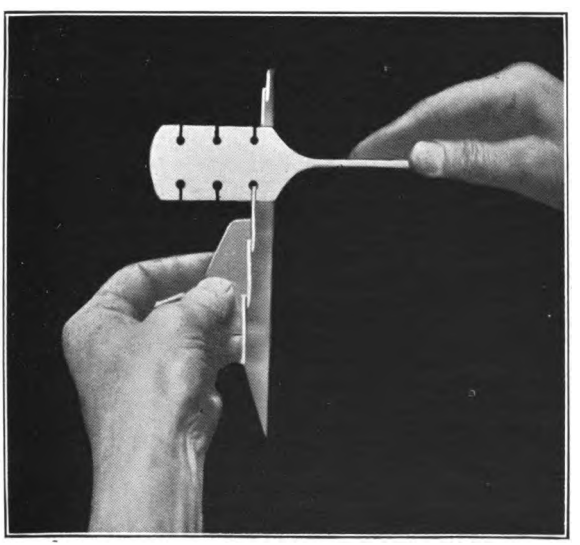


Fig. 102. Straightening tooth with set wrench

"An ounce of sunlight fed to the soul is worth more than a ton of gloom."

Fuel Value of Wood

Two pounds of dry wood of any non-resinous species have about as much heating value as a pound of good coal. Speaking in tons and cords, a ton of coal may be taken as the equivalent in heating value of 1 cord of heavy wood, 1½ cords of medium weight wood, or 2 cords of light wood.

The following table is an approximation of the number of cords of seasoned wood of various kinds needed to give the same amount of heat as a ton of coal, on the basis of 80 cubic feet of wood, with a moisture content of 15-20 per cent. to the cord:

1 cord	hickory, oak, beech, birch, hard maple, ash, elm, locust, longleaf pine, cherry	= 1 ton coal
1½ cords	shortleaf pine, western hemlock, red gum, Douglas fir, sycamore, soft maple	= 1 ton coal
2 cords	cedar, redwood, poplar, catalpa, cypress, basswood, spruce, white pine	= 1 ton coal

Resin gives twice as much heat as wood, weight for weight. Hence such woods as the pines and firs have more heating power per ton than non-resinous woods. The resinous woods in the table are considered as having an average amount of resin (15 per cent).

The fuel value of wood depends in many cases not alone upon its heating power, but also upon such qualities as easy ignition, rapid burning, freedom from smoke, and uniform heat. As a rule soft woods burn more readily than hard woods, and light woods more readily than heavy woods. The pines give a quicker, hotter fire and are consumed in a shorter time than birch; whereas birch gives a more intense flame than oak. On the other hand, oak gives a very steady heat.

Timber Supply Can Be Maintained

AT a conference of timber interests held at Seattle, recently, under the State Development Bureau of the Seattle Chamber of Commerce, Professor Kirkland, of the University of Washington, said:

"Of original stands of timber, enough remains, together with accidental young growth, to last us until the young stands can mature. We cut something more than 100,000 acres per annum, or about 1 to 1¼ per cent. of the total forest area, each year. This is a very conservative rate of cutting so that there is very little doubt, if we wish to reforest and protect as we cut, that our present annual cut can be maintained or even increased in the future.

"As a rough rule, a timber owner may cut from 2 to 4 per cent. of his total stand annually and yet maintain the yield forever, provided reforestation follows cutting."

It has been said that ignorance is bliss, but that doesn't apply to business.

Many a poor boob has lost out for no other reason than that he wasn't looking ahead.

Cutting and Use of Christmas Trees

(Continued from Page 115)

menace to the forest, but as a means for improving the forest and a source of revenue, and is therefore constantly encouraged.

It is not by denying ourselves the wholesome pleasure of having a bit of nature in our homes, these forest experts say, that we shall preserve our forests, but by learning how to cut trees discriminately.

Killing Molds on Lumber by Steaming

Molds thrive on the surface of wood when it is moist and warm. In a dry kiln molds often develop on the surface of the lumber to such an extent that they seriously obstruct the circulation of air through the pile. This is such a decided hindrance to successful kiln drying that steps must be taken to prevent the mold growth. Various experiments have been made by the Forest Products Laboratory to find a means of accomplishing this result without injury to the lumber.

The safest method found of stopping the growth of mold on lumber in a kiln is to steam the stock at 170 or 180 degrees for a period not exceeding an hour. This treatment heats the surface of the stock sufficiently to kill the mold, and at the same time the saturated air prevents too rapid surface drying, so that the injurious effects which otherwise would be produced on the wood by such high temperatures are avoided.

Unless it is desired to relieve drying stresses at the same time, the interior of the stock should be heated as little as possible. Therefore, the steam supply should be sufficient to reach the desired temperature in 25 or 30 minutes. To accomplish this result, plenty of live steam at a pressure of at least 70 pounds gauge must be available. The size of supply line and the number and size of perforations that may be required in the steam jet line will vary with local conditions; it is impossible to make them too large or too numerous, as the quicker the steam is supplied the better the effect.

Care should be taken to see that the stock cools in nearly saturated air, otherwise the surface will dry too rapidly, and casehardening difficulties will set in.

U. S. Forest Service, Madison, Wis.

The "Walking" Boss

THE olden times are gone for good;
The woods ain't what they used to be;
And things around this neighborhood
Look mighty different to me.
We rail our logs instead of haul,
We load 'em up by steam—but Lord!
Here is about the worst of all:
The walking boss has got a Ford.

The walking boss he used to tramp
The trails of hardwood and of pine
And find his way from camp to camp
With two good laigs like these of mine.
But now the boss has put on style
That us old boys could not afford,
For now he never walks a mile—
The walking boss has got a Ford.

It seems to me that lumbering
Has changed a lot, and for the worst;
There isn't hardly anything
That's like it used to be at first.
There isn't nothing like it was:
Now at some camps they charge you board—
And I suppose it is because
The walking boss has got a Ford.—*Exchange.*

SAWDUST

THAT'S ENOUGH

"Did you read about the scout who swallowed his teaspoon?"

"No; what happened to him?"

"Nothing, except that he can't stir."—*Boys' Life.*

THE HIGH COST OF LANGUAGE

"Hey, Bill!"

"What is it?"

"Your doctor's out here with a flat tire."

"Diagnose the case as flatulency of the perimeter, and charge him accordingly," ordered the garage man. "That's the way he does biz."

A HUNGRY P-J-G

Teacher—If I cut a beefsteak in two and then cut the halves in two and then cut the quarters in two, what do I have?

Johnny—Eighths.

Teacher—And then again?

Johnny—Sixteenths.

Teacher—Again?

Johnny—Thirty-seconds.

Teacher—Again?

Johnny—Hamburg.

"A HISTORY EXAM WE MIGHT PASS"

1. When was the war of 1812?
2. From what province of France was Joan of Arc?
3. Who is the author of Macaulay's history of England?
4. What two countries were participants in the Spanish-American War?
5. In what season of the year did Washington spend his winter at Valley Forge?
6. Tell about the Swiss Navy.
7. In round numbers, what was the duration of the Hundred Years' War?

—*Ex.*

NOT PARTICULAR

Cohen, entering delicatessen store—"Giff me some of that salmon."

Prop.—"That's not salmon; that's ham"

Cohen—"Vell, who asked you what it vas"—*Exchange.*

A POSER

"What would you do if I turned you down?" she asked shyly, as they sat on the parlor sofa.

The young man looked straight ahead, but said nothing. After a few moments of silence she nudged him with her elbow and said: "Didn't you hear my question?"

He looked around, apprehensively. "I beg your pardon," he replied. "I thought you were addressing the gas."

POWERFUL SICK

In the bright sunlight on a railway station in Georgia slept a colored brother. He snored gently, with his mouth ajar and his long, moist tongue resting on his chest like a pink plush necktie. A northerner climbed off a train to stretch his legs, unscrewed the top of a capsule and, advancing on tiptoe, dusted the grains of quinine on the surface of the darkey's tongue. Presently the negro sucked his tongue back inside his mouth and instantly he arose with a start and looked about him wildly.

"Mistah," he said to the joker, "is you a doctah?"

"Nope."

"Well, then kin you tell me whar I kin fin' a doctah?"

"What do you want with a doctah?"

"I'm sick."

"How sick?"

"Powerful sick."

"Do you know what's the matter with you?"

"Suttin'ly I knows wuts de mattah with me—mah gall's done busted!"

Twelve Opportunities

The House of Disston has twelve distributing branches. They are located in different parts of the country to give the users of Disston Saws, Tools, and Files more satisfactory and faster service.

These distributing houses are established to take care of your needs. They offer opportunities for fast service and, working in co-operation with our general office and factory here at Philadelphia, will see that your requirements are promptly taken care of.

HENRY DISSTON & SONS, INC.

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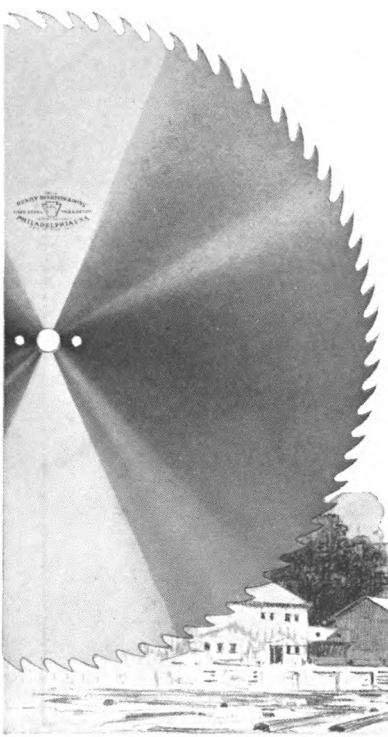
DISSTON SAWS, TOOLS, FILES, FOR EVERY PURPOSE

DISSTON
MILL SAWS

Tension Is The Important Thing In Solid Tooth Circular Saws



The adjustment of the tension in the blade of a solid tooth circular saw very largely determines the satisfaction that saw will give.

Disston tension—the result of over 80 years experience as leaders in the saw field—is "built into" every Disston Saw.

You can depend on the Disston-made Steel, special heat treatment, evenness of gauge, and regularity of tension found in Disston Saws to produce maximum results.

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