## ATKINS

THE SAW WITH

THE BLUE STICK SILVER STEEL SEGMENT GROUND
"The Finest on Earth" EASTERN PATTERNS
$\sum_{\substack{0}}^{\infty}$

## NOTE THE FOLLOWING

ATKINS SILVER STEEL SEGMENT GROUND CROSS CUT SAWS are made with the definite object in view of supplying the every-day user of Cross Cut Saws with saws which are so eminently superior to any other that their merits will be immediately appreciated. They must be so much better in every particular that any fair trial will at once demonstrate their superiority.

We claim that our SILVER STEEL CROSS CUT SAWS are superior to those of any other manufacturer in Material, Temper, Grinding and Finish, and that they will run easier, and will hold their cutting edge longer than any saw that has ever been made.

As a user of Cross Cut Saws you owe it to yourself to investigate the truthfulness of these statements, and in order to do so we want you to give ATKINS CROSS CUT SAWS a practical test. Put them into operation and keep a careful record of the results as compared with any other saw you have been using. Compare, First, the ease with which they run; Second, their speed; Third, the amount of timber they will cut, and lastly, the length of time they will run without refiling.

We are satisfied to place ATKINS SILVER STEEL SEGMENT GROUND CROSS CUT SAWS entirely on their merits, knowing full well that if you subject them to a fair, conscientious test you will find them to be as we have claimed for over seventy-seven years. "The Finest on Earth."

The easy running quality found in ATKINS SILVER STEEL SEGMENT GROUND CROSS CUT SAWS is secured through the scientific principle with which the cutting teeth are constructed.
E. C. ATKINS AND COMPANY,


President.

## Our Cross Gut Saw Department

 year out by experts in their line, each man having devoted his life study to his particular duty. It suọ̣eıədo ұนәıәш!p
दou IITM noर əa[os

-ATKINS SILVER STEEL SAWS-
can secure scientific
tkins
at saws to buy to

$$
\begin{aligned}
& s \text { and } \\
& \text { nestly } b
\end{aligned}
$$


information
o increase

$$
\begin{aligned}
& \text { Company that when you } \\
& \text { believe we can help you. } \\
& \text { Our Demonstrators }
\end{aligned}
$$ different operationsimportant part in the service to the saw user. It is his

have a problem to solve you will not
ue şrid Kurduoj pue su!̣łV ach of the demon-
strators is thoroughly versed in Cross Cut Saw work and can be of real help to you. is of 17 Saws; to give $100 \%$
$\qquad$ d satisfaction.
p to you production.
E.
strators is thoroughly versed in Cross Cut Saw work

| SPECIFICATIONS OF TEETH |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Saw |  | $\begin{aligned} & \text { Depth of } \\ & \text { Raliker } \\ & \text { culletet } \end{aligned}$ |  | $\begin{gathered} \text { Depto of } \\ \text { Topto } \\ \text { Goullet } \end{gathered}$ |  |
| 32－A | 4 | $118{ }^{18}$ | $\frac{12}{188^{\prime}}$ | $1^{\frac{1}{32}}$ | 114＂ |
| 32－A | 5 | $1{ }^{13}{ }^{\prime \prime}$ | 118＂ | $1{ }^{\frac{1}{312}}$ | 11／4＂ |
| 30 | 9 | 111\％＂ | $3 / 4$＂ | $1^{\prime \prime}$ | 1／4＂ |
| 73 | 553 | $1 \frac{18}{}{ }^{\text {c／}}$ | 7／8＂ | 1 ＂ |  |
| 37－C | 540 | 13／8＂ | $33 / 1$＂ | 11／4＂ | 7 ${ }^{18}$＂， |
| 33 | 224 | $1{ }^{132}{ }^{\prime \prime}$ | 118＂， | 矿＂ | 1／4＂， |
| 73 | 225 | $118{ }^{18}$ | 7／8＂ | $1^{\prime \prime}$ | \％＂ |
| 73 | 226 | $118{ }^{18}$ | 7／8＂ | $1^{\prime \prime}$ | 部＂ |
| 73 | 228 | $118{ }^{18}$ | 78／＂ | ${ }^{\prime \prime}$ |  |
| 37－C | 330 | $13 / 8$＂ | $3 / 4$＂ | 11／＂ |  |
| 37－C | 331 | 13／8＂ | $3 / 4$＂ | 11／4＂ | ${ }_{1}^{7}{ }^{7}{ }^{\text {P／}}$ |
| 37－C | 332 | 13／8＂ | $3 / 4$ | 11／4＂ | ${ }^{7}{ }^{18}$ |
| 15－A | 389 | $1{ }^{\frac{3}{19}}$ | $1 / 2{ }^{\prime \prime}$ | ${ }^{188_{6}}$ | ${ }^{1 \frac{1}{2} 2}$ |
| 61 | 654 | $1{ }^{1 \frac{1}{2}}{ }^{\prime \prime}$ | ${ }_{1810}$ | ${ }^{3}{ }^{3}{ }^{\text {a }}$ | ${ }^{16}{ }^{\text {c／}}$ |
| 9 | 390 | 7／8＂ | $11 / 2$＂ | 部＂ | 1／2＂ |
| 48 | 392 | 1颜＂ | $\frac{9}{18}$ | $3 / 4$＂ | $1 / 4$＂ | been put into Saw Blades．

There is no Steel as good as SILVER STEEL．Others have tried to imitate it and STEEL．＂But it isn＇t，and a

> Atkins Guarantee
 Every Atkins SEGMENT GROUND Saw is guaranteed for proper hardness and against
any visible flaws in workmanship or material．
STEEL Cross Cup apreciate any one calling our attention to any defect in an Atkins SILVER

## However

Atkins SILVER STEEL SEGMENT GROUND Cross Cut Saws are not guaranteed against
improper usae，such as breakage caused by a wedge being driven against the saw，or a tree
falling on the saw by accident．



## RECOMMENDATIONS FOR FITTING ATKINS SLLVER STEEL

## SEGMENT GROUND CROSS CUT SAWS

S MANUFACTURERS of the popular Atkins SILVER STEEL Segment Ground Cross Cut Saws we feel that there is a need
$A$ in mind that are necessary to properly fit the saw, considering the characteristics of the wood, with the exception of slight variations. We have, however, from over a period of years adopted a standard on bevel, set and raker drop, from which we fit all of our Cross Cut Saws in the manufacturing process. This is done with the utmost care. This fitting process is based upon the kind of timber to be cut in the lumber territories.
The following recommendations are derived from actual experiments and found to be most satisfactory. For cutting soft wood more set is necessary than for cutting hard wood. The cutting teeth should have .005 set on each side of the blade, and raker clearance of rakers .006 shorter than the teeth. than the teeth.
If these suggestions are kept in mind and applied when fitting Atkins SILVER STEEL Segment Ground Saws, you will have a fast cutting, easy running saw, and it will hold the sharp cutting edge a remarkably long time.

| Our process of Segment Grinding is pat Saws Clearance, with very little set. Atkins S our branches. | Saw But An Atkins Saw Is Segment Ground. Now, <br> , Segment Ground Cross Cut Saws can be ordered | That! Segment Grinding gives our Cross Cu jobber, from us at Indianapolis, or at any |
| :---: | :---: | :---: |
|  |  | "Every tooth and point has its purpose, and is so constructed that it performs its work with ease and precision. |
|  |  |  |
| This picture illustrates plainly the differGrinding and the imitation. Note carefully how the Atkins blade tapers from tooth edge |  |  |
| on the other saw. They may gauge the same |  | Notice this illustration and see how Atkins Silver Steel Saws cut. We call your |
| on the extreme back, but down in the center |  | attention especially to the fact that Atkins |
| other saws have no taper at all while Atkins | By referring to above illustration you will see | Silver Steel, Segment Ground Cross Cut Saws |
| Segment Ground Saws run free and easy. | how perfectly the alternating cutting teeth cut the | cut Shavings-not saw dust. If you will study these illustrations care- |
| Imitators of our Segment Ground Saws | sides of the kerf, clean and smooth, leaving the | fully, you will see why Atkins Silver Steel |
| Simply "dub" them off for an inch or so on | rakers to clear the bottom. The principle is just the | Cross Cut Saws operate easier, cut faster |
| Don't Be Deceived. Insist on having Atkins. | ordinary saw and clearing the center with a chisel. | and hold their edge longer than any ordi- |

Hard- 'чวәว the cut. $5-3 / 5^{\prime \prime}$ wide at the quiring a
teeth are


 рие spua әч auge. Narrow with which the of similar design. Segment Ground, Pine Yellow Pi and has perfection pat
 " wide at the ends and $5-3 / 5$ breast  for

$$
8 \text { feet }
$$

pounds
The style handles recommended for use on this new saw are illustrated on pages 19 and 20. The superior quality of Atkins Cross
Cut handles is produced by scientific method of manufacture.


## S M V S <br> ATKINS SILVER STEEL SAW No. 5


TKINS No. 5 Perfection Cross Cut Saw is another very popular style pattern especially adapted for cutting hard and soft
wood. Blade made of genuine SILVER STEEL, the finest material ever used in saw blades, and equal in quality, yet tougher and tough, but not brittle. Segment Ground, which enables the saw to run fast, free, and easy. Takes extra sharp keen edge and stays sharp exceedingly long time. Segment Grinding gives ample clearance in the cut without the use of excessive set. Has four cutting
 at center in 6 foot lengths. Other lengths have widths in proportion. $14 \times 20 \times 16$ gauge, straight back. Actual size section of the teeth shown on page 9 illustrating the correct bevel. Rakers not swaged.
Made in lengths feet.

wide center on 6 foot saw. Atkins exclusive grinding process, Segment Grinding. 14 gauge on the tooth edge, 18 gauge at center of back, and 16 gauge on back at both ends. This grind gives the blade adequate clearance in the cut enabling the saw to operate with very little set, increasing the speed and ease of cutting. The New No. 9 is the saw for small timber, both hard and soft wood. Due to the narrow width of the blade, it does not pinch. It is made of Atkins SILVER STEEL especially adapted for Cross Cut Saws. Highly tempered, and tough, producing a hard keen cutting tooth that will hold up longer than any other, takes fewer filings, is not brittle in setting and set stays in longer.

Unless you see the Atkins name with SILVER STEEL and AAA clearly etched on the blade, it is not a genuine Atkins Saw. This saw carries the usual Atkins guarantee. Actual size section of teeth shown on page 11.

$$
5,5 \frac{1}{2}, 6
$$

$$
5 \frac{1}{2} \text { pounds }
$$

Cut handles have

suderiority of Atkins products.



## ELECTRIC <br> SNIXJV

## CUT SAWS

These saws are made of extra high grade Electric Alloy Steel and are destined to be the most popular line made. Toothed with the well-known
four perforated cutting teeth and raker and six end teeth. The deep and wide gullets prevent clogging in the cut. Accurately tempered throughout to
insure maximum edge-holding qualities and durability. Given Atkins exclusive Taper Grinding, therefore requires very little set and will not chatter
or bind. Fewer fittings are needed because they are tough and never brittle in filing and setting and the set and keen cutting edges stay in a long time.
Beautifully polished and etched with the maker's name. An exceptionally high grade, medium priced line of saws.

$$
\text { ? }
$$


feet, $5,5 \frac{1}{2}, 6$
The No. 225 is a straight back wide pattern, particularly adapted for bucking. $3 \frac{1}{8}$ inches wide at ends and 7 inches wide at center in the 6 -foot
length, and $3 \frac{1}{4}$ inches wide at ends and $6 \frac{3}{8}$ inches wide at center in the $5 \frac{1}{2}$-foot length. Ground $14 \times 20 \times 16$ gauge. Filed sharp and set ready for use.
 Lengths L The No. 226 is of the narrower pattern straight back, being $3 \frac{1}{4}$ inches wide at the ends and $5 \frac{15}{16}$ inches wide at center in the 6 -foot length, and
34 inches wide at ends and $5 \frac{3}{4}$ inches wide at center in the $5 \frac{1}{2}$-foot length. Ground $14 \times 19 \times 16$ gauge. Filed sharp and set ready for use. feet, $5,5 \frac{1}{2}, 6$



for practical
th
 l leng

## 3

## ATKINS No. 33 CROSS CUT HANDLE

 bolt, quick detachable.Cut Handle No. 33 is 7
long, irrespective of
which is just the prope
sawyers.
Specially selected hardwood, thoroughly seasoned and kiln dried. Sanded, waxed and
polished. Designed to fit the hand perfectly. polished. Designed to fit the hand perfectly.
Heavy steel washer, specially heat-treated, heavy steel bolt, very hard and will not wear or break. Also one fibre washer between socket and steel washer which prevents the handle
from becoming loose, yet releases quickly from becoming loose, yet releases quickly.
Packed one pair in a sack; 10 pairs in a carton weighing 16 pounds.

## ATKINS No. 28 CROSS CUT HANDLE

No. 28 Handle is 8 inches long. One of the most popular Handles on the market. Short and "stocky," yet has plenty of hand room. Made from selected, air-dried hardwood. Extra hard Has even grip that you will like at once. High Has even grip that you will like at once. High
tensile strength. Malleable bolt extends and screws into malleable socket on end. Case
 into pressed steel ferrule. Capacity: $2 \frac{1}{2}$ to 4 Easy to adjust. Packed 10 pairs in a carton weighing 16 pounds.

## ATKINS No. 22

## CROSS CUT

HANDLE
 dried Hickory, sanded all over and treated to wear smooth. Has very hard surface. Fits the hand and is a pleasure to use. Strong, easily adjusted. Extra heavy malleable castings. Machine-made steel bolt, extra large. "Big Bolt" pattern and large wing nut. Sturdy construction. Japanned black. Packed 10 pairs in a carton weighing 20 pounds.

## 




 edges; is fastened to the blade by two nickel screws and a medallion. $15 \times 19 \times 17$ gauge. Blade is $2 \frac{1}{8}$ wide at point; wide at handle on 4 foot lengths. Other
 Furnished complete with supplementary handle.


## ATKINS No. 654 ONE-MAN CROSS CUT SAW

 Cedar King and it is taper ground. Lance teeth-perforated. Accurately tempered.
 varnished on edge and can be used with heavy gloves for winter sawing. Attached to the saw with three nickel screws. The Saw is ground 15 gauge on tooth edge, 17
gauge on the back at the point and 19 gauge at the butt near the handle. Has 4 cutting teeth and raker, large deep gullets. $2 \frac{7}{8}^{7 \prime \prime}$ wide at point, $7^{\prime \prime}$ wide at handle
 $2 \frac{1}{2}$ to 5 feet, inclusive.

A T K I N S


$$
\text { ATKINS ONE-MAN CROSS CUT SAW No. } 392
$$




 from $2 \frac{1}{2}$ to 6 feet inclusive.

ATKINS No. 2 ONE-MAN

Thoroughly seasoned air-dried hardwood. Socket and washer of high-grade ferrule steel. New style steel bolt with rivet locking feature, preventing rivet from becoming detached. Used for converting one-man saw into a two-man cross cut saw, or enables the operator to saw with ease using both hands. Packed one dozen to a carton. Weight: per dozen, $3 \frac{1}{2}$ pounds.
CUT SAW HANDLES-

Made of air-dried selected hardwood, sanded. Has extra smooth edges. Large roomy grip. Handle carved, varnished on edge and polished. Screws not furnished with handle. Packed one dozen to a carton. Weight: per dozen $6 \frac{3}{4}$ pounds.

SNIXLV air-dried, thoroughly seasoned. Varnished edge, well finished. Extra large roomy easy grip pattern. This handle is highly recommended. Does not include screws.
Packed one dozen to a carton.
Weight: Per dozen, $6 \frac{3}{4}$ pounds.

## ATKINS SAW FITTING TOOLS

## Saw Fitting Tools

This briefly describes four of our most popular patterns of Saw Tools. For further information on Saw Tools make request for our catalog.

## ATKINS EXCELSIOR SAW TOOL No. 1



This tool may be used as a jointer, raker gauge or side file. An 8 -inch flat file is fastened in the tool. The proper curve is obtained by the set screw slightly bending the file. The proper length of raker teeth may be gauged with the tool after jointing, and then, by readjusting the file, it may be used for side filing. There is also a tooth gauge with each set. This is made with long and short ends, which by reversing, indicates a correspondingly light or heavy set as desired.

The Atkins Improved Channeling Set Block completes the outfit. The block fastens to any flat surface; and the anvil having a slight declivity produces a concave on one side of the teeth, thus insuring a more durable set and relieving the friction on the side of the teeth.

This set requires very little adjustment, and is compact and easy to carry. Packed one set in a box.

## ATKINS SAW FITTING TOOLS

## Atkins Patent Excelsior Saw Tool No. 5



It is used as a jointer, as a raker gauge and also as a side flle.
An 8 -inch file is fastened in the tool. The set screw slightly bends the file, giving it the proper curve. After jointing, the tool may also be used for gauging proper length of raker teeth, after which, by readjusting the file, it may be used for side filing. A tooth set gauge is also included. This is made with long and short ends, which by reversing, indicates a corresponding light or heavy set as desired.

## Atkins "AAA" Saw Tool No. 9



This is an exceptionally good tool used for fitting cross cut saws in order to get the best results from them. The tool is $61 / 4$ inches long by 2 inches wide and made of good, substantial material throughout. All parts are carefully fitted. It will last for years.

The Raker Gauge Plate is tempered file proof. The ends are beveled so that the depth of the gauge may be regulated by the use of the adjusting screws. This does away with paper packing, which has been used on all tools heretofore.

For jointing, fasten a flat file by set screw, and pass same lightly over the points of the teeth until filed to a uniform height.

For jointing the rakers, place the tool over the raker teeth. Turn adjusting screws until the rakers protrude the desired distance through the gauge, then fle them off to a level with top of gauge. This will render all raker teeth exactly the same length.

For gauging the rakers, reverse the tool and set gauge pin and tighten by use of thumbscrew, then pass the tool along toothed edge, thus measuring the proper length for each raker. This will be indicated when the point of the raker tooth touches the gauge pin.

The Bearing Plates are the only parts of the tool touching the teeth points and are made of SMOOTH, HARD TOOL STEEL, and will neither dull the points nor wear with use.

Note the little cut-out on each end of the top bar of tool. This is to gauge the set of the cutting teeth and does away with the necessity of carrying an extra tooth gauge. The shallow gauge is for set of teeth in hard wood and the deep gauge is for set of teeth in soft wood.

The tool being open in construction, it is possible to see all work plainly at all times.

## ATKINS SAW FITTING TOOLS



With our long experience in the manufacture of Saws and Saw Tools, we have found it necessary to make a Precision Tool to regulate the fitting of Cross Cut Saws-or, in other words, a tool which is accurate in every way and when properly used will fit the saws accurately or to the one-thousandth part of an inch.

The body is made of High Grade Aluminum. The steel bars, or plates, which are the only parts that touch the tooth points, are made of smooth hard steel and will neither dull the points nor wear with use. The filing plate is made of special steel which will not wear from the file passing over it.

The extra length causes it to cover more teeth at the same time and thus insures great accuracy in operation.

The open construction of Atkins Micrometer Saw Tool enables the operator to see his work at all times.

DIRECTIONS FOR USE
For Jointing, place a flat file in slot "A", as indicated in drawing. Turn Knurled Thumb Screw " $B$ " to right until file, is tight, then turn lock nut "C" to right which locks "B"' and keeps file from becoming loose, then pass file lightly over points of teeth until filed to a uniform length.

Remove file by loosening lock nut "C," turn thumb screw " $B$ " to left until file drops out, then turn thumb screw " $B$ " to right about four complete revolutions, or until "O" on "B" becomes directly opposite line "D." File plate "E" will then be set at zero or flush with points of teeth.

For jointing rakers turn " $B$ " to right for any required amount that is to be removed off points of rakers. For instance, one complete revolution of nut " $B$ " is twenty-five one-thousandths (.025) part of an inch. Each small mark on " B " is one one-thousandth (.001) part of an inch, and the larger marks are five one-thousandths (.005) part of an inch as $0-5-10-15-20$.

For gauging the length of rakers after swaging reverse the tool and set top Micrometer thumb screw " $F$ " to the required amount; then pass the tool along the tooth edge, thus measuring the proper length of each raker; this will be indicated when the point of the raker tooth touches the point of thumb

## Atkins Micrometer Tooth Set Gauge <br> As Accurate as a Watch

Atkins Micrometer Tooth Set Gauge should be used by all first-class saw mechanics. Made of a high grade steel, nickelplated, equipped with a hardened steel Micrometer thumb screw with graduations on it measuring from naught (0) to twenty-five one-thousandths (.025) part of an inch.

DIRECTIONS FOR USE
When set at zero all four legs of tool are the same length and No. 0 on barrel of thumb screw is directly opposite, or in line, with No. 0 on body of tool as shown in drawing.

If 1-64 part of an inch, or .015 set in teeth is desired, turn knurled head thumb screw to left to .015 , then lock with small knurled nut and set teeth accordingly.

The crowning feature of this tool is that you can get any amount of set with the one tool. Some filers carry several tooth set gauges ground differently, as they may want to cut several kinds of timber in the same day. After one becomes familiar with the required amount of set for each kind of wood it requires only a second to adjust the gauge from one extreme to the other.

This tool can be used for gauging the set of cross cuts and drag saws, also the set and swage of shingle, band and circular saws.

## ATKINS CRITERION SAW SET No. 1



Atkins Criterion Saw Set is used in setting all kinds of cross cut, hand, wood and other small saws.

We recommend the use of a hammer set in preference to a lever set, on account of the ability to secure more uniform results, and there is less likelihood of breaking the teeth.

The Criterion Set has a die resting on the tooth which is struck by the hammer. A set screw on the opposite end makes the tool adjustable so that any desired degree of set may be secured. The pointed die makes the device adaptable to any size of tooth.

Made of the best refined malleable iron, lacquered a rich blue to prevent rusting. The die and anvil are drop forged from the very finest tool steel and are properly hardened and tempered to give excellent service. Packed in individual box.

## ATKINS AAA SAW SET, No. 4 for cross cut saws



The action of this device is clearly shown in the above illustration. The hammer blow reaching the tooth through the plunger prevents the likelihood of breaking the saw teeth. The amount of set may be regulated by moving the top slide. Absolute uniformity is assured as well as maximum speed. Given the amount of bevel the slide may be instantly set to proper position. By simply placing the tool over the point of the tooth, and striking the plunger one blow, a perfectly uniform set, located properly on the tooth, is secured.
Made of fine crucible steel, nicely finished. Weight 2 pounds.

## Atkins No. 4 Setting Hammer



Atkins No. 4 Setting Hammer is made of the finest grade tool steel and accurately tempered. Extra high-grade Setting Hammer. Solid peen. Perfectly shaped and bal'anced for setting cross cut, drag and circular saws. Polished head. The thoroughly seasoned hardwood handle, sanded smooth, is securely fastened to the head by means of a special wedge arrangement. Will not slip. Packed in individual boxes. Weight each, 14 ozs.

## Atkins No. 3 Setting Hammer



Atkins No. 3 Setting Hammer is made of special grade tool steel, drop forged. A very high-grade setting Hammer. Has slotted peen. Highly polished and finished with selected air-dried Hardwood Handle, sanded smooth and fastened to the head by a special wedge arrangement which prevents it from coming loose. Well balanced and the correct weight for setting purposes. Packed half dozen to a box.

## Great American Cross Cut File



Atkins SILVER STEEL Great American Cross Cut File is made expressly for the filer who likes a knife shaped file. Made in lengths from $6^{\prime \prime}$ to $12^{\prime \prime}$ inclusive. This style file has been used for many years in filing Cross Cut Saws and for which there is still a great demand. Atkins SILVER STEEL Files will stand up better, and file more material than any other file.

## Atkins Special Cross Cut Saw File


$\square$
Made of genuine SILVER STEEL in lengths $6^{\prime \prime}$ to $10^{\prime \prime}$ inclusive, expressly for filing Cross Cut Saws. Are regularly made with two square edges. Also furnished with thumb grip when desired. The most popular file used in the logging camps for keeping Cross Cut Saws sharp and keen. The superior quality of Atkins SILVER STEEL Files makes them the "favorite" among filers.

## Saw Fitting

## Instructions for Filing and Setting Cross Cat Saws

The best saw in the world, pulled by the best sawyer, cannot do efficient work unless the teeth are kept in proper shape to cut and rake out the sawdust. The best saw filer must have proper gauges and tools, or he cannot do his work accurately.

We must illustrate the fitting of saws by illustrating the use of proper saw-fitting tools. Fitting cross cut saws is based on a few well-known principles. With these principles in mind, slight variation must or can be made in the bevel of the teeth, shape of the teeth, angle of the cutting point, shape and length of the raking or clearing teeth to suit local requirements. These slight variations are made expedient by reason of the fact that it is necessary to adapt the saw for cutting in different kinds of wood; sometimes hardwood, sometimes soft or frozen logs, knotty logs, and logs that are full of pitch.

The principles involved in making the teeth of cross cut saws are as follows:

1. The cutting teeth constitute a series of knives adapted to sever all fibres of the wood. When these fibres are cut through they must be collected in the gullets of the teeth, or dust chambers, and carried out of the kerf, so as to enable the saw to freely start in on a new cut.
2. The clearing teeth constitute a series of rakers to free the kerf from the dust or shavings that are severed by the cutting teeth.

With these principles in mind we come to the preparation of the teeth for the work.

1. All cutting teeth must be the same length, so that each tooth will do its share of the cutting, and no more.

To make all teeth the same length place the saw in a vise, or, if the filing is to be done in the woods, where no vise is available, place the blade, teeth uppermost, in a notch in a convenient stump, pass a file carefully over the teeth, as shown in Figure 1, until all teeth touch the file. This can readily be determined by the bright, flat tops on the cutting teeth.


Care must be taken to hold the file squarely, so that the cutting on each side of the saw will be the same length. If the file is allowed to pass over the teeth at an angle, one side of the saw will be longer than the other, and this will invariably make a saw run to the side which has the longest teeth, as this side cuts faster.
2. When all of the cutting teeth are even on top, the next operation should be to regulate the length of the rakers or clearing teeth. We advocate regulating the length of the rakers at this point, because the rakers should be adjusted by gauge, and any tool which is used

```
ATKINS SILVER STEEL SAWS
```

for this purpose would have a tendency to dull the sharp points of the cutting teeth if it were used after they had been finally finished.

This operation is one which requires the same accuracy and attention to details. Experience is the best teacher in determining the proper length of rakers, as compared to the length of the cutting teeth. It is essential for good cutting that the rakers should be some shorter than the cutting teeth-not less than $1 / 100$ part of an inch, nor more than $1 / 64$ of an inch. If the rakers are to be swaged, it is proper to leave them the same length as the cutting teeth and allow the swaging to shorten them sufficiently for good work. Unswaged rakers should be cut off accurately to gauge, as shown in Figure 2.

The saw teeth will now look like Figure 3.
3. Thenext operation consists of filing up the rakers to a keen, sharp edge, using care that their topsshallbe square with the


Figure 2-Cutting down rakers. side of the blade. It is necessary to point up the rakers in this manner, whether they are to be swaged or not. (Figure 1.)
4. After determining the shape you desire in the cutting teeth, proceed to shape them to suit you before starting to bevel. It is much better to preserve a uniform tooth formation, and to use that which is best adapted to the various kinds of wood, as can be seen in the diffent styles of teeth shown at the end of these instructions. Shaping of the teeth should be done at right angles to the teeth, always making square lines, not attempting to do any beveling until all teeth are formed. Carry the square shape up to the point of the teeth. It is important to square up the cutting edge of a cross cut saw from the same side of the teeth that you intend to do the beveling. The reason for this is that it is very difficult to handle a file on a thin cross cut saw absolutely square across the saw, without having it chatter more or less. In the effort to keep the file from chattering you will naturally lean the file slightly toward you at the handle end, which will form a slight bevel on the teeth.
5. You now have your teeth the right length and the correct shape, and can proceed to bevel. The amount of bevel required can be determined by your own experience, and by reference to cuts of various bevels shown at the end of these instructions. Care must be taken not to cut off the points of the teeth in beveling.
To make a flat, straight bevel, a full, straight stroke of the file is necessary, but if a rounded bevel is wanted to follow a round-tooth formation (Figures 14 and 15, page 33 ), it is necessary to roll the file, following the contour of the saw teeth.
File all cutting teeth to a sharp point.
Your cutting teeth should now be finished, and if you are using unswaged rakers your rakers are finished and the saw is ready to set. If you are using swaged rakers, you are now ready for the swaging process.
6. Swage the rakers with light blows of a light hammer, using care not to spread the point of the raker to a thickness exceeding that of the saw plate. This can be


Figure 3
done by inclining your hammer slightly, as shown in Figure 4.

This will give your raker teeth a formation as shown in Figure 10, Page 33.

An unswaged raker breaks up the fibres which are severed by the cutting teeth into short pieces which are more apt to pass by the side of the saw and cause the saw to bind. Whereas, swaged rakers act as a plane on the bottom of the cut, going under the severed fibres and planing out the V-shaped chip left in the bottom cut. See Figure 5.

Your saw is now ready to set.
7. The amount of set necessary is determined by the kind of material to be cut. Perfect alignment is absolutely necessary. Therefore, always use the set gauge. The use of a set gauge is shown in Figure 6, Page 32.

The operation of setting can be accomplished in several ways. If filing is done in the woods, the saw can be set as shown in Figure 7, Page 32.
The point of the tooth should project about $\frac{1}{4}$ inch over the apex of the setting block, and the setting should be done by means of a firm, sharp blow on the top, just at the place where it rests on the apex of the setting block. If too large set is imparted, reduce the set by hammering the tooth placed on the flat surface of the set-block. If too little set is imparted at the first blow, reset the tooth as in the first operation,


Figure 4 either using a little harder blow or allowing the tooth to project a little farther from the apex of the anvil. Each tooth, after setting, should be gauged for accuracy, as shown in the cut illustrating the use of a set gauge (Fig. 6). We submit on Page 33 a number of cuts for your consideration which show the principal forms of saw teeth, both cutting teeth and rakers, for different kinds of timber and different requirements.

You will note by carefully studying the different forms of teeth and the different beveling, that the same principle is involved in each case, but different methods are employed to cover special requirements.

## ATKINS SILVERSTEEL SAWS

In frozen timber, exceedingly hard wood, or wood that has many hard knots (See Figures 13, 14 and 15, Page 33), you will find that it is always better not to make the bevel too flat. Yet by following out the lines laid down in roundedpoint beveling (Figs. 14, 15), you are able to secure a fast-cutting saw

with plenty of bevel, without the danger of leaving the extreme point of the tooth too weak. In other words, a rounded-point beveling will leave more backing to the point of the tooth than a flat bevel, and still leave the saw in shape to do fast cutting. It is considerably more work, however, to file a saw with a rounded point than a saw with a straight, flat bevel.

If your saw Figure ${ }^{7}$ has a tendency to lose its points, we would advocate reducing your bevel or perhaps increasing the angle of your cutting point. In hard hemlock knots the points have a tendency to bend. Very often with a little less bevel your saw will stay sharpened twice as long, and will cut just as fast, and preserve its points. We would always advocate filing the saw with as much bevel as possible consistent with leaving enough backing to the point of the teeth so that the point will neither bend nor break off in striking small knots in such timber as hemlock or hard woods.
There are many who advocate beveling the teeth clear down to the gullet, but such beveling necessitates extra filing, which is unnecessary, as the point of the teeth is the part of the saw which does the cutting. Each stroke of the saw only allows the point of the teeth to sink as far into the wood as the wedge-shaped point of the bevel will allow it. This is governed to a certain extent by the action of the rakers, which are clearing the cut ahead of the cutting teeth, but as a rule one stroke of the cutting tooth of a cross cut saw will carry each tooth only down to a point where the bevel causes the tooth to wedge into the cut.

Always set your saw wide enough so that it cuts freely, but do not set it wide enough to chatter, as every $1 / 1000$ part of an inch means an excess of power required to pull the saw, as the cut is just that much wider.
In frozen timber, properly ground saws ought to work with very little set. In hard woods they require very little; in pitchy pine woods the saws usually require a little more set, but if they are kept well cleaned, a saw set for hard wood ought to cut in yellow pine.
We sincerely hope that these instructions will be of service to you in carrying on your work, and if at any time we can be of assistance to you, we are at your service.

For Figures Nos. 9 to 19, inclusive, see Page 33.


No. 9
Raker without Swage.


No. 10
Swaged Rakers


No. 11
iamond Point Bevel, considered the best point holding method of filing and easy to maintain in good order.


No. 12


No. 13

N. 14

Bevel for com- Bevel suitable mon tooth, where for knots and there are no frozen timber, there are each tooth doing its share of the clearing. where extra strength is needed in the extreme point. Not adapted for fast sawing.

Round point bevel, for fast, smooth sawing where strength of point must be considered as in the case of pine knots.


No. 15

Bevel for ordinary work, where skill is not essential. A poor method and a poor tooth. Point too delicate to stand hard usage.

No. 16



No. 17

$$
\begin{aligned}
& \text { Bevel for fast, } \\
& \text { smooth sawing } \\
& \text { and where } \\
& \text { strength in the } \\
& \text { teeth must be } \\
& \text { considered. }
\end{aligned}
$$




No. 18
Bevel adapted for general work.


NO. 19
Bevel suitable for general work.


## E. C. ATKINS and COMPANY

The Silver Steel Saw People
Home Oifice and Factory, INDIANAPOLIS, IND. Machine Kniie Factory, Lancaster, N. Y.

Branch Offices in the Following Cities:

Atlanta, Ga.
Memphis, Tenn.
Memphis, Te
Chicago. Ill.
Chicago. III. La,

San Francisco, Callt
New York City Klamath Falls, Ore.

Seattle, Wash
Paris, France

In Canada-Shurly-Dietrich-Atkins Company, Ltd.
Factory-Galt, Ontario. Branch-Vancouver, R. C.

