

ESTABLISHED 1858.

INCORPORATED 1888.

J. W. MIXTER SAW TOOL CO.

Saw

Illustrated  
Catalogue

AND  
Price  
List.

Tools

MANUFACTURERS,

PLYMOUTH, MASS., U. S. A.

1893.

# Something New.

PATENT

## GUMMER FOR CYLINDER SAWS.

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This Gummer is in every respect equal to our celebrated "Mixer Automatic Self-Feed Gummer." The working parts are identically the same as our No. 2 (small size) Gummer and it can be quickly changed and adjusted to straight saws of all descriptions by simply using an extra Frame, which is furnished for \$5.00. Also the new Frame for Cylinder Saws can be furnished for \$5.00 to those who already have a regular No. 2 Gummer.

Price of the CYLINDER SAW GUMMER, same as Regular No. 2 Gummer,

Complete with 3 1-2 inch Cutters, Grinder and Wrench	-	-	\$25.00
Extra Frames for Straight Saws	-	-	5.00
Extra Frames for Cylinder Saws	-	-	5.00

As there are several thousand Cylinder Saws in use in the United States, we expect to sell a great many of these Gummers, as they will make a great saving in time and files.

### J. W. MIXTER SAW TOOL CO.,

PLYMOUTH, MASS.



J. W. MIXTER SAW TOOL CO.,

MANUFACTURERS OF

MIXTER'S CELEBRATED

PATENT

# SAW-GUMMERS

AND FAMOUS

SAW-TOOTH SWAGES,

SIDE FILES,

“XX” CUTTERS, MILL-STONE PICKS,

Patent Belt Awls, Patent Speed Indicators,

SAW ROUNDING MACHINES, ETC.

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PLYMOUTH, MASS., U. S. A.

1893.

“Nothing Succeeds like Success.”

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*THE success of Mixer's Patent Saw-Tools has been beyond our most hopeful expectations,—having established and built up the largest business of the kind in the world.*

The Mixer Patent Saw Gummers and Swages

*have been placed on the market strictly upon their merits, and have been their own recommendations. We point with pride to our reputation, and challenge a like record by any other manufacturer in the world.*

*We employ no special travelling agents to sell our goods, depending upon their SUPERIOR MERITS for our business.*

Superior Quality

*in material and workmanship, and not cheapness, is the basis of our competition; and to this we attribute chiefly our*

Great Success.



JASON W. MIXTER,  
PRESIDENT AND TREASURER.

CHARLES W. MIXTER,  
VICE-PRESIDENT.

J. FRANK CHURCHILL,  
SECRETARY.

— Office of —

# J. W. MIXTER SAW TOOL CO.,

PLYMOUTH, MASS.

In presenting our New Illustrated Catalogue, we omit the usual list of testimonials, as our goods are now so thoroughly established that information can easily be obtained as to their practicability from any of the several thousand sawyers who have them in use.

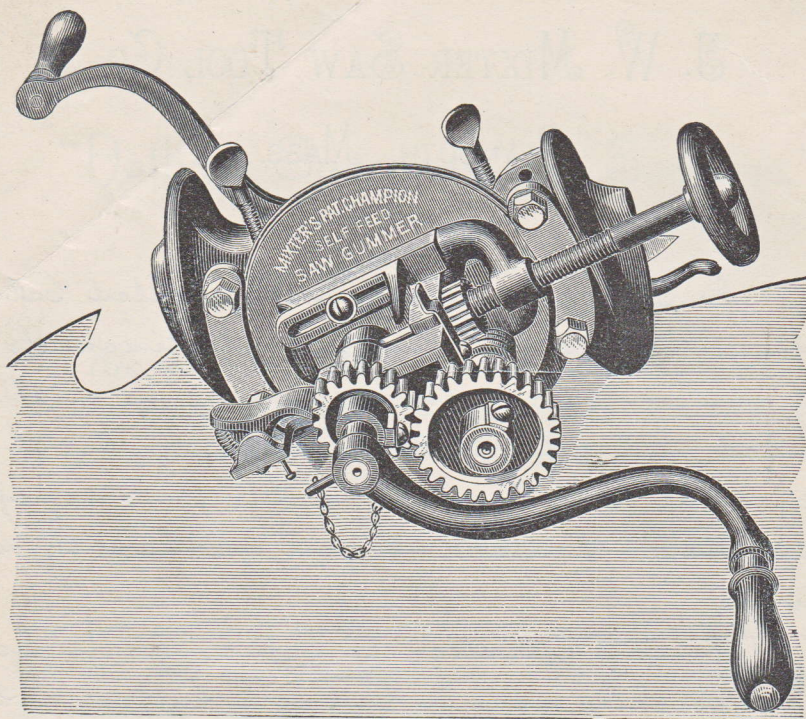
We call attention to improvements we have recently made in Gummers, Cutters, and Swages, also to the addition to our list of Patent Belt Auls and Saw Rounding machines.

Our thirty-five years' experience together with strict attention to the wants of our customers, warrant us in guaranteeing that the high standard of our goods shall be maintained in the future the same as in the past, which we think will justify you in giving us your orders.

Very respectfully,

J. W. Mixter Saw Tool Co.  
(INCORPORATED.)





SHOWING FEED-WORKS SIDE.

## THE "MIXTER GUMMER" IS KING.

The above engraving represents MIXTER'S FAMOUS CHAMPION GUMMER, with Patent Adjustable Automatic Self-Feed, THE ONLY PERFECT AUTOMATIC GUMMER MADE WITH POSITIVE TRUE AND EVEN FEED.

It is fully adjustable to all kinds and sizes of saws, and can be regulated at will to feed faster or slower, according to the work to be performed, and changed in an instant from self-feeding to hand-feeding.

It is self-acting, — throwing itself out of gear when the teeth are cut to the required depth, making them of uniform length. The feeding process is so true and even, and so FAR SUPERIOR to other gummers, that we can harden our cutters to the VERY HIGHEST TEMPER, with little or no danger of breaking; and the cutters will wear at least three times as long.

A ratchet-wheel and pawl is attached to the cutter-shaft, to prevent the breaking of cutters by revolving backwards.

We guarantee it to be THE MOST PERFECT GUMMER EVER MADE. It will pay you to throw away your old gummer, and order the CHAMPION.

Price of gummer, with three cutters, grinder, and wrench . . . . . \$30.00.

Full directions sent with each gummer.

PRICE-LIST ON PAGE 23.

Weight of Gummer, boxed, 27 pounds.



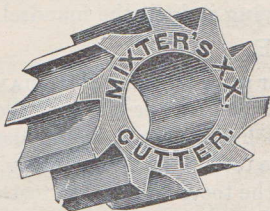
**"THE BEST IS ALWAYS THE CHEAPEST,"**

Is an adage that finds an illustration every day in the purchase of machinery. A good machine is the operator's delight, and a poor one his bane. In trying to save a few dollars by purchasing cheap machinery, many a man has thrown away a great many dollars as effectually as if he had burned them up. More time, labor, and vexation are often expended in trying to make a poor tool do good work than would have paid for the best in the market in the first place.

In saws and saw-tools this is peculiarly noticeable; as a circular saw is one of the most difficult things to run, and do good work, unless kept in the most perfect order by being properly GUMMED, SWAGED, AND FILED, and having the corners jointed off true and even with the SIDE-FILE. (Many good saws have been condemned on account of neglect in these particulars.) This cannot be accomplished unless the operator has good tools with which to do it.

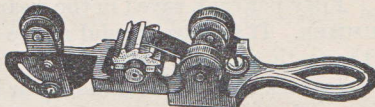
We guarantee the MIXTER PATENT GUMMERS AND SWAGES to be the best in the market.

THE MIXTER PATENT GUMMERS have been before the public for several years, during which time they have withstood the severest possible tests from all classes of sawyers, and now have a reputation unequalled by any gummer made. We give more value for a dollar than can be obtained of any other manufacturer in our line.




One Mixer XX Cutter will do as much work as six ordinary ones.

**IMPROVED CUTTER GRINDER.**



PRICE \$1.00.

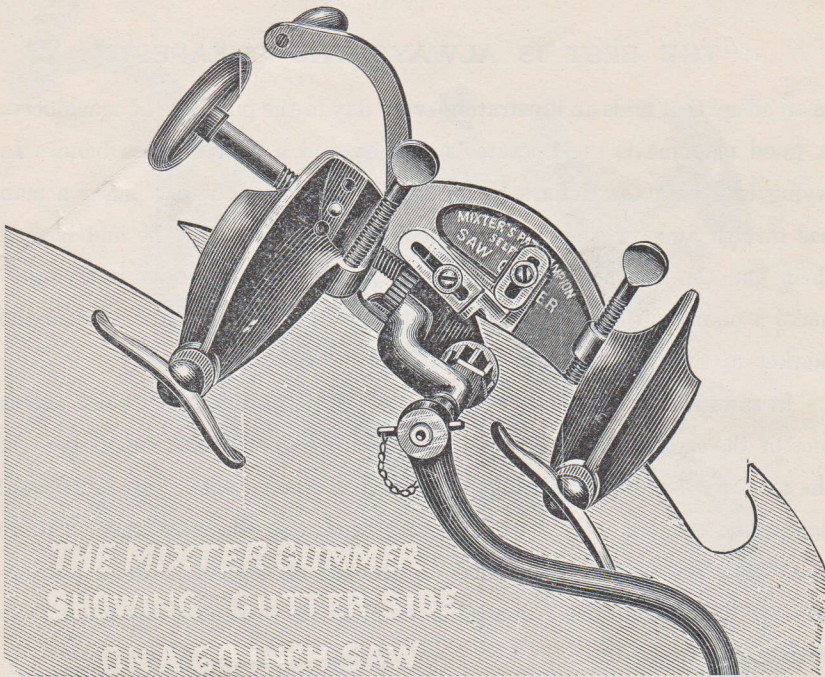
Grinds the cutters perfectly round and true. We give a grinder free with each gummer.

 BEWARE of bogus cutters claiming to be MIXTER'S.

No cutters genuine unless stamped "Mixer's XX."

PRICE-LIST OF CUTTERS ON PAGE 22.





### THE "MIXTER GUMMER" IS KING.

The above engraving represents the CHAMPION GUMMER in position for cutting back under the teeth on the same circle as the backs, with the adjustable carriage-way down. It will be observed that the back or point line of each tooth is the continuation of the spiral lines; and the sharpening is mainly done by the reduction of the gullet, or throat, only.

The CHAMPION has the lateral or oscillating movement of the cutters, and for keeping large saws in order is the most practicable machine of its kind in use. It carries any size burr, gums a saw out quickly, keeps it round and balanced, the teeth equal distances apart, the backs of teeth on a proper circle, and gums the saw without removing it from the mandrel.

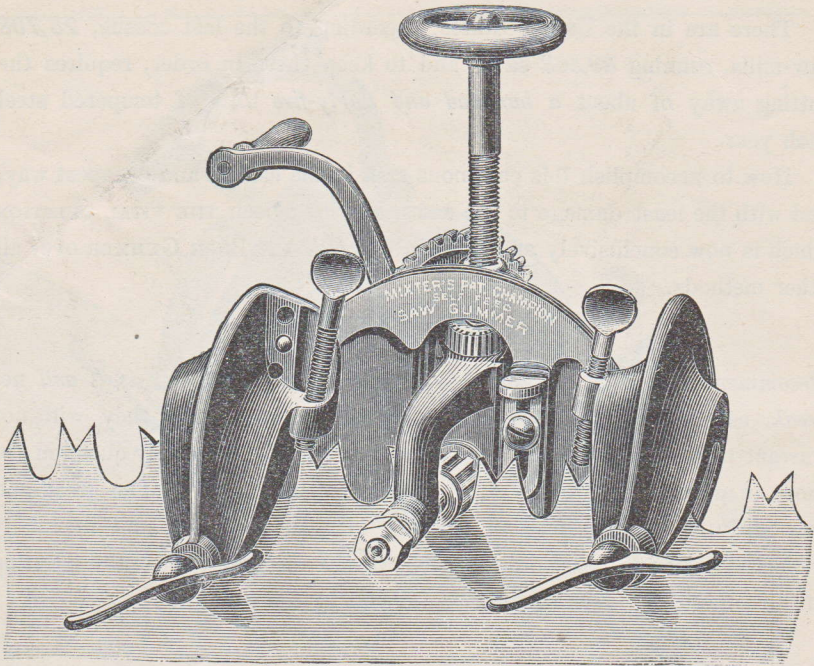
#### TAKE NOTICE.

Fifty per cent. saved in the wear of circular saws by using the CHAMPION GUMMER. If you are careful not to gum below the line or circle of the back of the teeth, you will save from two to three inches each year in the diameter of the saw. Never file on the top or back of the teeth; do all the filing, gumming, and swaging on the under or face side of the tooth. Wear the teeth back round the saw, and you will save more than fifty per cent. in the wear of the saw. Remember this fact, for it is not over-estimated. With teeth one and a half inches deep, you can get twelve inches wear out of each tooth, and reduce your saw only three inches. The saving in saws alone will pay for a gummer two or three times a year.

PRICE-LIST ON PAGE 23.

If you have an Inferior Gummer and would like to exchange, we invite correspondence.





No. 1 or No. 2 Gummer in Position for Gummering Cross-Cut Saws,

## THE "MIXTER GUMMER" IS KING.

The above engraving represents the PATENT SELF-FEED CHAMPION GUMMER in position to gum mill-saws or cross-cut saws. It can be quickly adjusted to cut in any angle or line from horizontal to perpendicular. It cuts very rapidly, and with no risk of bending, breaking, or case-hardening the saw.

J. W. MIXTER SAW TOOL CO.

*Gents:*—Your PATENT CHAMPION GUMMER is THE BOSS. Our saw cuts faster and with less steam than it ever did before. There has been about a dozen CROSS-CUT SAWS brought here for us to gum.

### TESTIMONIAL.

TRANQUILITY, OHIO.

Yours respectfully,

T. S. WASSON & SON.

### No. 2 (SMALL SIZE) PATENT CHAMPION GUMMER.

Especially adapted to cross-cut saws, and small and medium circular saws, etc. Shingle-mills, planing-mills, sash, door, and blind factories, wagon and carriage, pattern and furniture shops, all need this gummer. It is also especially handy for lumbermen to carry in the woods for gumming cross-cut saws. It will soon pay for its cost in saving of time and files.

Price, with three cutters, ( $\frac{3}{8}$ ,  $\frac{1}{2}$ , and  $\frac{5}{8}$  inch), grinder, and wrench, \$25.

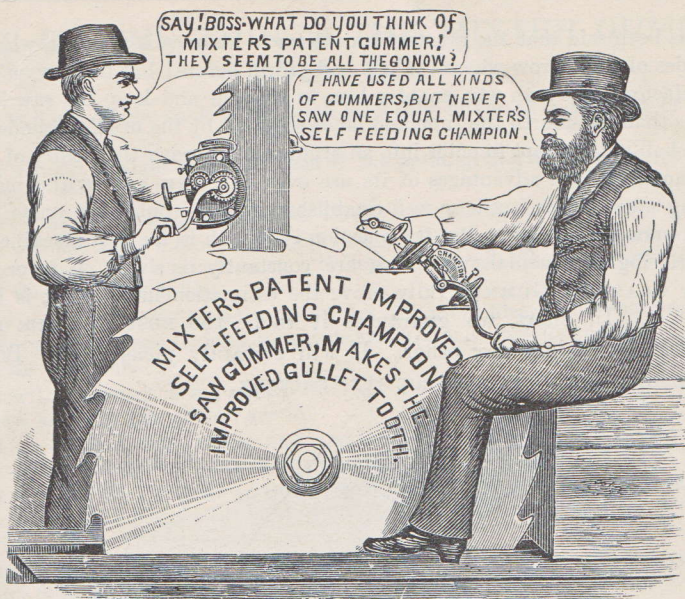
N. B.—The small size CHAMPION has all the improvements and advantages of the large size CHAMPION AUTOMATIC SELF-FEED GUMMER.

Full Directions sent with each Gummer.

PRICE-LIST ON PAGE 23.

Weight of small Gummer, boxed, 22 pounds.



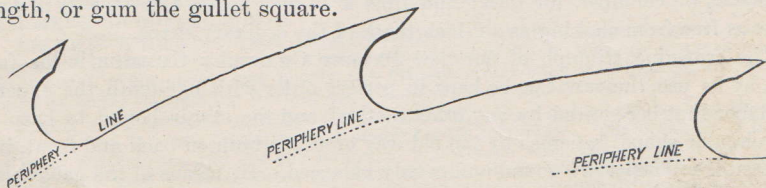


### THE "MIXTER GUMMER" IS KING.

The above engraving shows the relative size and position of the CHAMPION GUMMER when in use; also position of operator when gumming saw-mill saws.

### TO MAKE THE MOST OF A SAW.

A saw must be gummed, so it can discharge sawdust easily: if not, it cannot possibly do good sawing; as the sawdust chokes up between the teeth, and makes the saw run hard, and is liable to lead to one side. It is very difficult to gum perfectly square with the emery-wheel; the gullet being left bevelling, which carries the sawdust to one side, and causes the saw to lead. TO MAKE THE MOST OF A SAW, and keep the teeth in shape, they must be gummed back on their periphery lines; otherwise you waste much of your saw, time, and files. THE MIXTER GUMMER gums back on the periphery lines, gums the gullets perfectly square, true, and even, and the teeth all the same length. The following cut represents the periphery lines on a saw, as gummed with the MIXTER GUMMER. It is quite impossible to gum them in this shape with an emery-wheel, or the teeth all the same length, or gum the gullet square.



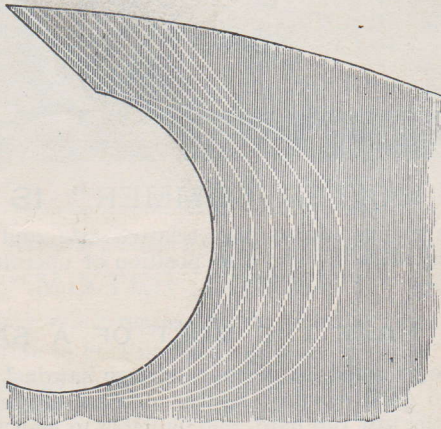
SAW MANUFACTURERS recommend BURR GUMMERS in preference to ALL OTHERS; as they will not break, case-harden, or stretch the rim of the saw.

PRICE-LIST OF REPAIRS ON PAGE 24.



It has been said that the greatest benefactor to his race is the man who makes two blades of grass grow where but one had grown before; but the sawyer's greatest benefactor is the man who enables him to sharpen and keep his saw in order with less than one-fourth the time and labor required by the usual methods.

We shall not attempt to enter into an argument to prove the utility of a good saw-gummer, and the advantages of its use over ANY AND ALL OTHER means for gumming saws. This fact is so well established, that it would be a waste of time to dwell upon the subject. But the question is, Which is the best machine? The very flattering testimonials which we are constantly receiving in favor of our PATENT CHAMPION GUMMER fully prove the estimation in which it is held by the public. In short, we guarantee it to be the BEST GUMMER IN THE MARKET. Don't buy any other. It will certainly please you. It is the only gummer that gives PERFECT SATISFACTION.



FULL-SIZE 2-INCH SAW-TOOTH.

This engraving represents a full-size two-inch tooth, as produced by using MIXTER'S PATENT CHAMPION SAW-GUMMER; the throat being formed by a  $1\frac{1}{2}$ -inch cutter, having only one-half inch to file, thus saving seventy-five per cent of the filing. A  $1\frac{1}{4}$ -inch cutter, used in a  $1\frac{1}{2}$ -inch tooth, leaves only one-fourth inch to file, making a saving of five-sixths of the filing, and the same proportion in files and labor. The throat, or gullet, being chambered out on a half-circle, forms a receptacle, or chamber, for dust; and thus a  $1\frac{1}{2}$ -inch tooth, this style, will keep a saw as free from choking as a 2-inch tooth of the ordinary shape.

The crowning triumph of our new PATENT CHAMPION GUMMER is the fact, that, by its use, the saw can be kept in perfect order with one-tenth the expense and labor that is required by any other method, and the saw is bound to keep its true circular shape; whereas by the old way of filing, both on back and front, it is impossible to keep a saw round and evenly balanced. By means of the gauges and set-screws in the CHAMPION GUMMER, all the teeth in a saw can be cut EXACTLY ALIKE, and the saw evenly balanced.

PRICE-LIST ON PAGE 23.



## SOME OF THE THINGS THE MIXTER GUMMER WILL DO.

1. It will cut off the back of the teeth smoothly, either in a straight or curved line.
2. It will cut straight down the face of the teeth, giving them more hook when necessary.
3. It forms the best possible shaped throat for clearing the dust.
4. It will cut away more metal in five minutes than can be cut away with a file in two hours; and a single cutter, if kept sharp, will do more work than five dozen of the best 10-inch files.
5. By cutting a little in advance of the filing, old files, the corners of which have been worn out, can be used to advantage, and will last longer than new ones without the gummer.
6. It will not break, bend, stretch the rim, or case-harden the saw. It is easily controlled, and any sawyer can use it.
7. It saves time, risk, labor, and expense of sending the saw away, or even taking it from the shaft or sash to be gummed.
8. It will pay for itself in an ordinary mill in three months by the saving in time on files alone, besides the extra amount of work that can be done by having the saws always in first-rate order.
9. After the saw is once gummed, ten minutes two or three times a week will be enough to keep the throats cut out in advance of the filing; so that the corners of the files are never used.
10. It will cut off both the back and face of the teeth within a quarter of an inch of the points, leaving only the points of the teeth to file.
11. By the form given to the teeth and throat, it secures a great saving of power.
12. It will gum the gullet square across; and the saw is not liable to lead to one side, as when gummed with an emery-wheel.
13. It will gum all kinds and sizes of saws, as it is fully adjustable.
14. It will cut in any angle desired, from horizontal to perpendicular.
15. It has the lateral or oscillating movement of the cutter, thus avoiding the necessity of taking the cutter off the arbor, and moving washers back and forth, in order to use the cutter the whole length.
16. It saves labor, time, trouble, saws, and power, and keeps the saws always in good shape.

*It is the only gummer made that works automatically, or that has a positive, true, and even self-feed.*

**Remember, EMERY-WHEELS SOON WEAR OUT, ARE APT TO CASE-HARDEN, AND ARE SURE TO STRETCH THE RIM, AND SPRING THE PLATE.** This is acknowledged by all saw-makers: and many sawyers have thrown them aside for this reason, and are now using MIXTER'S PATENT CHAMPION GUMMER, which leaves the plate as true as before, and the teeth in good shape ready to run, with the least possible amount of filing; besides, it saves taking the saw off the arbor.

**EMERY-WHEELS ARE DANGEROUS.** — "While Lyman Narrigon was gumming a saw in his mill in Ferris township, near Stanton, Mich., with an emery-wheel, the wheel burst. One cheek was nearly cut off, his collar-bone was broken, and he was otherwise badly injured." — *North-western Lumberman, Feb. 16, 1884.*

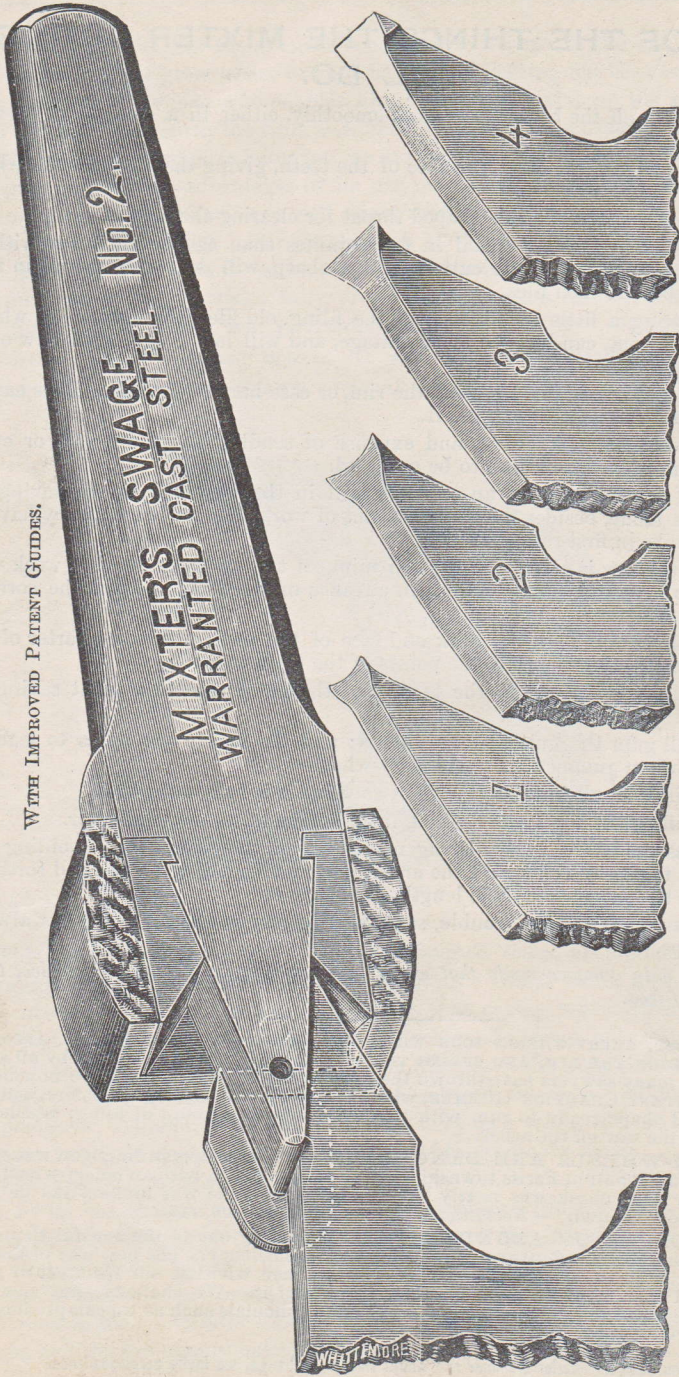
**FAIR OFFER OF ABUNDANT PROOF.** — Any one of the several thousand men using the MIXTER GUMMER will vouch for its efficiency. The best way of finding out is, to write to us, and get the names of a few men who use our Gummer in your vicinity, and then write to them for their opinion of it. We challenge any saw-tool maker in the world to produce an equal array of testimonials such as we can produce for the MIXTER GUMMERS AND SWAGES.

If you have an inferior Gummer and would like to exchange, we invite correspondence.



THE MIXTER PATENT DUPLEX SWAGE.

WITH IMPROVED PATENT GUIDES.



[Saw tooth No. 1 indicates the result of one or two blows with the MIXTER PATENT DUPLEX SWAGE, when the convex die or spreading-recess is applied; tooth No. 2, a succession of blows; No. 3, a tooth ready for the file and side-file, after the flat die or finishing-recess has been used; and No. 4, filed into shape for good service, with the corners jointed off with the MIXTER SIDE-FILE, for smooth sawing. The above illustrates to what extent the swaging can be carried, and strength of shoulder made, the amount and size of which is governed by the operator.]

PRICE-LIST ON PAGE 23.



It will be noticed from the cuts on opposite page, that the spreading-recess in the MIXTER PATENT DUPLEX SWAGE has a threefold convex surface, and acts upon the teeth of a saw back from the cutting-edge, and spreads them readily to the required width, without materially reducing their length: consequently the saw is not so rapidly reduced, and lasts much longer than when fitted with the ordinary swage. It makes strong and substantial shoulders to the teeth when necessary, which will stand hard work and frozen timber without dropping corners, and spreads them more on the under side than it does on the top, which causes the saw to cut easily, clear well, and steadies it in the cut.

Other swages drive the teeth down and back, spreading them more on the top than on the face, thus reducing the size of the saw very rapidly; also causing it to heat, and run hard.

The cut represents a full-size No. 2 MIXTER PATENT DUPLEX SWAGE in position on a tooth with the projecting tongue, or middle die, resting on the top of the tooth, which serves as a guide, enabling the operator to swage every tooth exactly alike. This is a great advantage over other swages, which are liable to bend the teeth up and down, causing them to crack, and then crumble off when the saw is in use.

The cut also shows the adjustable dies, which are interchangeable with dies of different angles, to fit different-shaped teeth; and they can be repaired by grinding, if worn, or replaced with new dies if broken in any way. This also is a very important advantage over other swages. The dies are so constructed, and so nicely fitted, that it not only spreads the teeth very rapidly, but brings them out to a sharp, keen edge, — a better edge than that made with a file; as it hardens and refines the steel, and the saw will run much longer without sharpening.

Many sawyers, when in a hurry, and their saw is dull, go around it with the MIXTER PATENT DUPLEX SWAGE, spreading the teeth just enough to bring them to a keen edge, and start the saw right into the cut WITHOUT FILING.

No saw should be filed more than twice before it is swaged. The oftener swaged, the better it will run, and the less power it will take for its work.

To avoid being imposed upon by worthless imitations, see that every swage is stamped "J. W. MIXTER SAW TOOL Co."

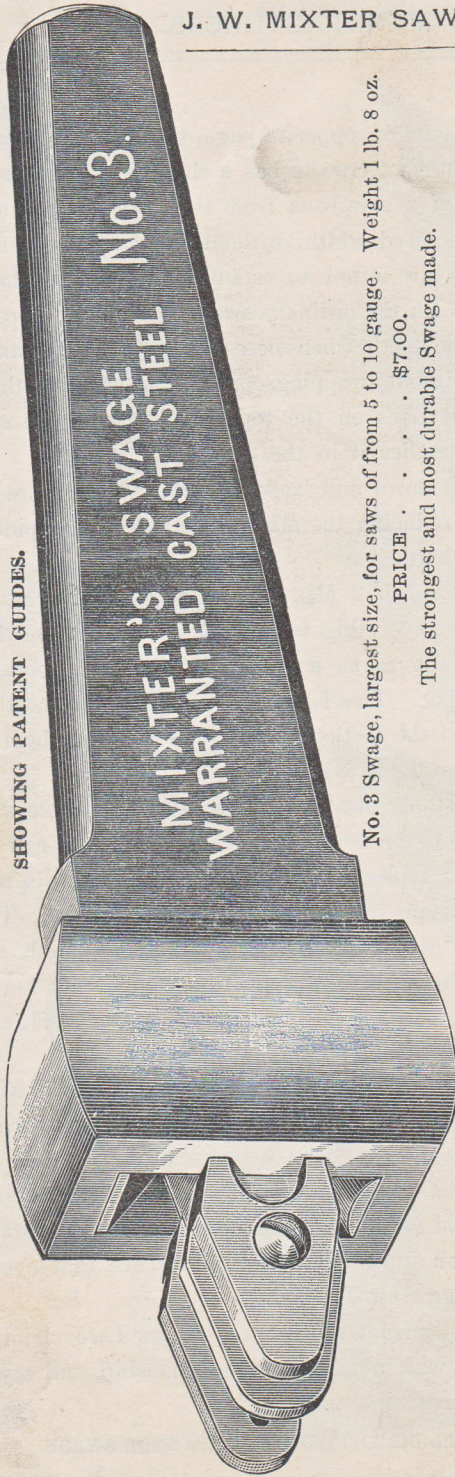
Our swages are forged wholly from solid cast-steel; and we claim a very superior quality of temper, with a nicety of workmanship, and style of finish, unequalled by any other swage made.

PRICE-LIST ON PAGE 23. FULL DIRECTIONS SENT WITH EACH SWAGE.



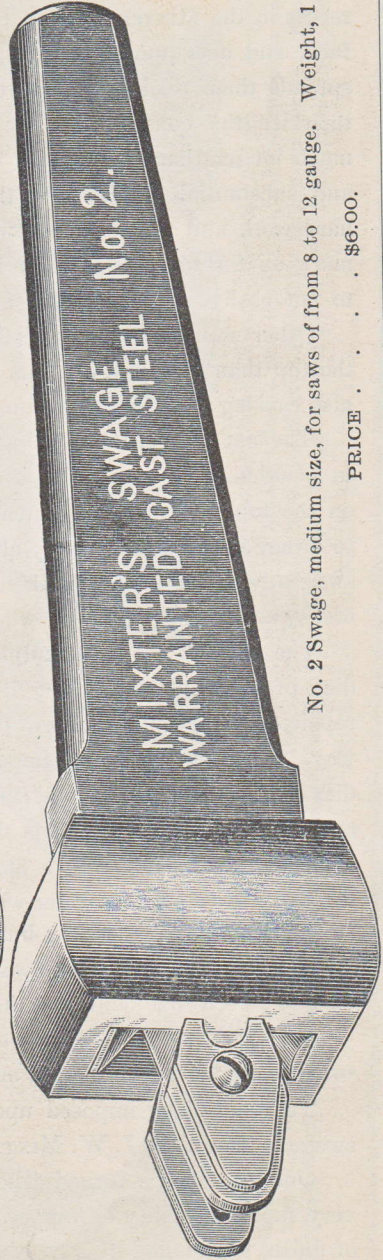
THE MIXTER PATENT DUPLEX SWAGES.

SHOWING PATENT GUIDES.



No. 3 Swage, largest size, for saws of from 5 to 10 gauge. Weight 1 lb. 8 oz.  
 PRICE . . . . \$7.00.

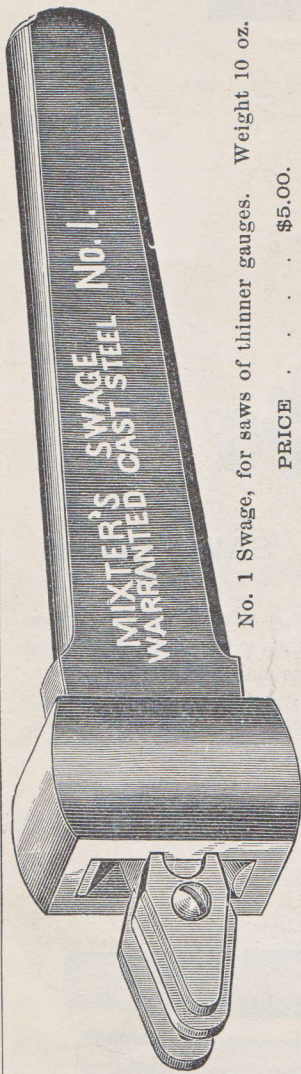
The strongest and most durable Swage made.



No. 2 Swage, medium size, for saws of from 8 to 12 gauge. Weight, 1 lb.

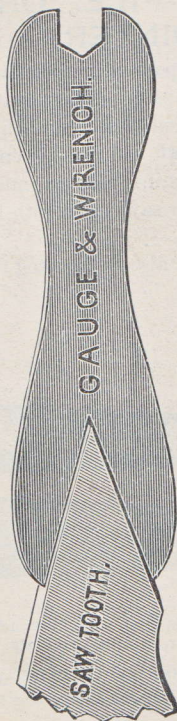
PRICE . . . . \$6.00.





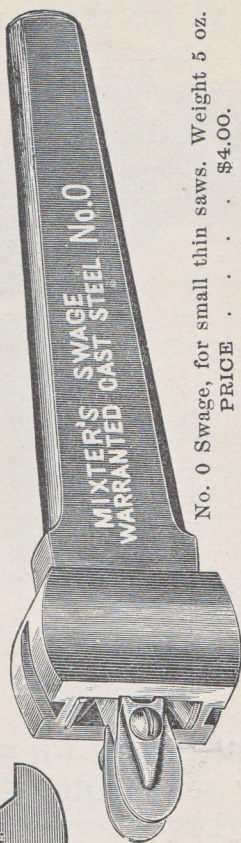
No. 1 Swage, for saws of thinner gauges. Weight 10 oz.

PRICE . . . . \$5.00.



Saw-Tooth Gauge by which to file and regulate the teeth so that the swage can work to advantage.

FURNISHED FREE WITH EACH SWAGE.



No. 0 Swage, for small thin saws. Weight 5 oz.

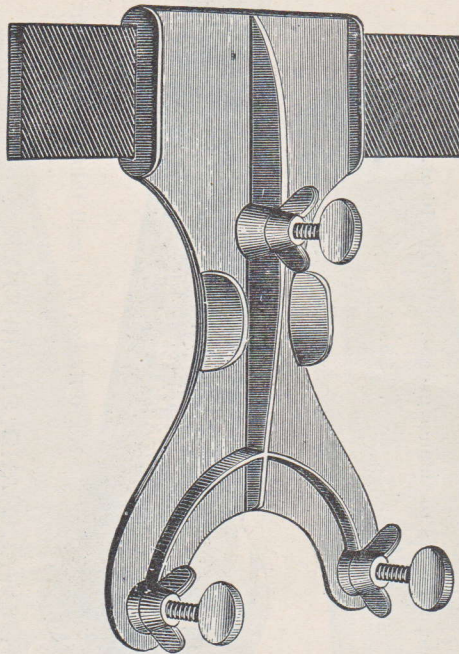
PRICE . . . . \$4.00.

**MIXTER'S FAMOUS SAW-TOOTH SWAGE AND SHARPENER**

Is the most reliable swage ever made. Over thirty thousand in use in the United States and Canada. We have the most flattering testimonials of its worth. It is indispensable to any sawyer who uses the spread set.

The great demand for MIXTER'S SWAGE is a guaranty of its superiority over all other swages in the market. The swages themselves shall be their own recommendation. Try them, and be convinced of their superiority. None genuine unless stamped "J. W. MIXTER SAW TOOL CO." FULL DIRECTIONS SENT WITH EACH SWAGE. Remember the best is the cheapest in the end. Any size swage sent by mail free, postpaid, on receipt of price, as above.

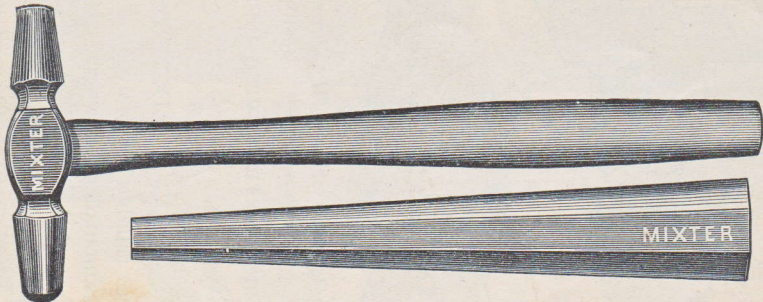




**THE MIXTER SIDE-FILE, OR SAW-TOOTH JOINTER.**

The Side File is used for the purpose of regulating saw-teeth after they have been set. It is impossible to set or upset a saw so that some of the teeth will not extend or be bent over a little more than others, and thus make rough lumber. By the use of this instrument, all the teeth are made even; and a saw thus regulated will run twice as long without sharpening, and do much better work. In short, it is indispensable in fitting up a saw for sawing smooth lumber.

No. 1 Side File . . . . .	\$1.50
No. 2 Side File, for long teeth; also for inserted teeth saws . . . . .	1.75
Extra Files for Side File . . . . .	.50



Octagon Steel-Bar Swage, $\frac{3}{4}$ x $1\frac{3}{4}$ , 12 inches long, with Hammer . . . . .	\$8.00
Other shapes and sizes made to order, prices accordingly.	

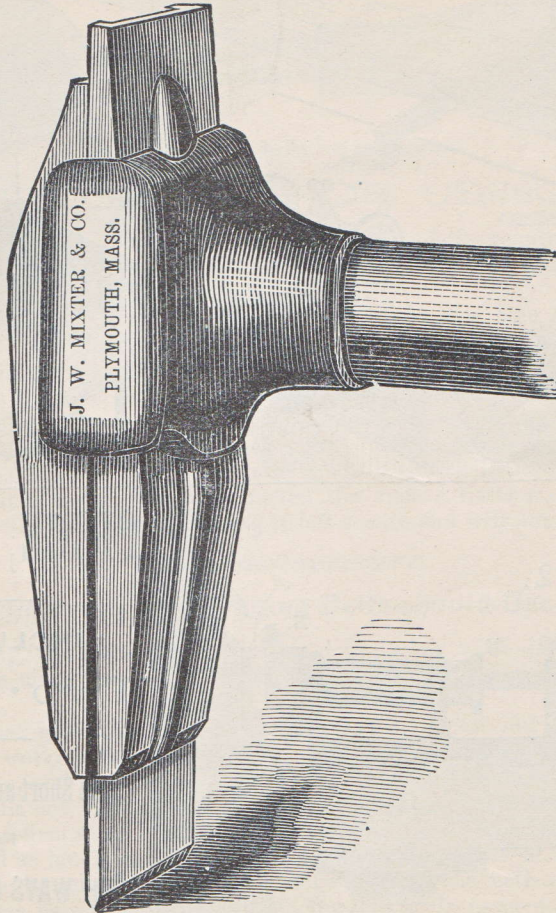
Every sawyer or filer should have one of these swages and hammers for drawing out short teeth, or swaging saws, before using the regular swage or upset.



**THE MIXTER IMPROVED MILL-STONE PICK,  
WITH EXTENSION BLADES.**

With each pick is included ten blades, requiring no drawing down or re-tempering. The blades are very hard and tough, will neither fly out nor batter, and WILL STAND TO DRESS THE HARDEST FRENCH BURR-STONE.

**THE BEST AND CHEAPEST PICK EVER USED.**



Each blade is five inches long, and can be used up to within two inches of the end, thus giving THIRTY INCHES TEMPERED STEEL.

Weight of No. 1 Pick, as per cut above . . . . .	2½ lbs.
Weight of No. 2 Pick, as per cut above . . . . .	3¼ " "
No. 1 Blade . . . . .	1½ in. wide.
No. 2 Blade . . . . .	1¼ in. wide.

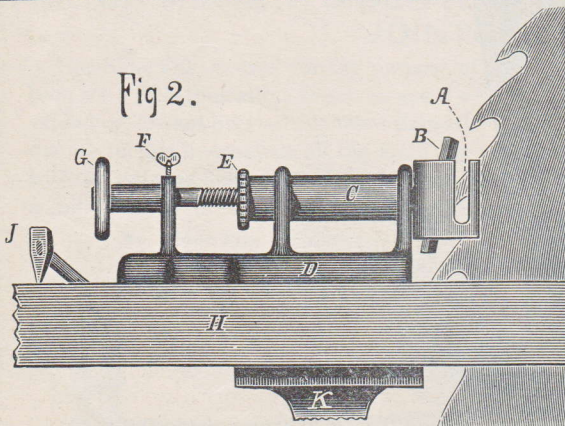
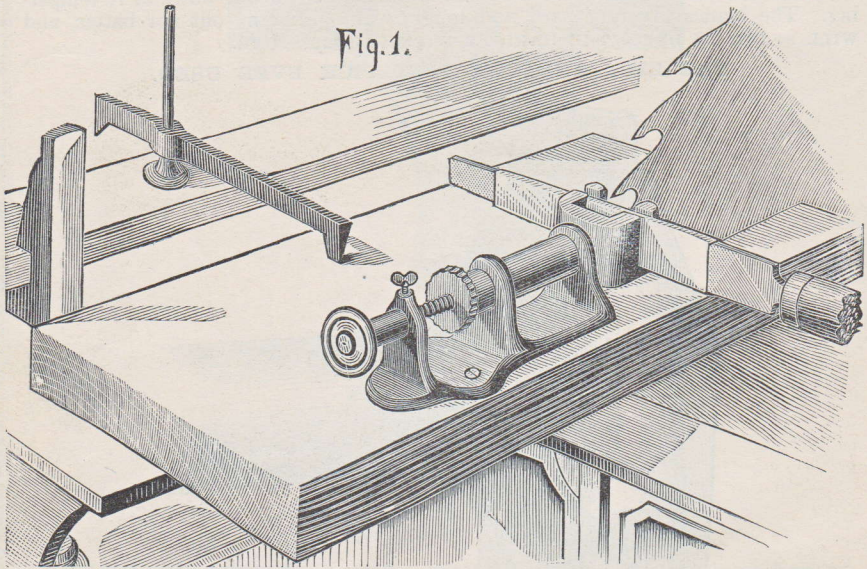
**PRICES.**

No. 1 Mill-stone Pick, ten blades each, for fine work . . . . .	\$8.00
No. 2 Mill-stone Pick, large size, for heavy work . . . . .	10.00
Extra blades, each, for No. 1 Picks . . . . .	.25
Extra Blades, each, for No. 2 Picks . . . . .	.35

**SENT BY EXPRESS ON RECEIPT OF PRICE AS ABOVE.**



# Saw Rounding Machine.



PRICE, \$5.00.

INCLUDING  
TWO FILES.

One Short and One Long,

FOR

BOTH WAYS OF ROUNDING.

THE want of a machine to round off circular saws has long been felt by rotary sawyers and filers. The machine we offer is simple in its construction, and positive in its action, and a saw can be rounded perfectly, and it also leaves the face of the teeth square, which is an important thing in the successful running of a circular saw.

The machine can be used in two ways, either when the saw is on or off the arbor, or while the saw is in motion or stationary.

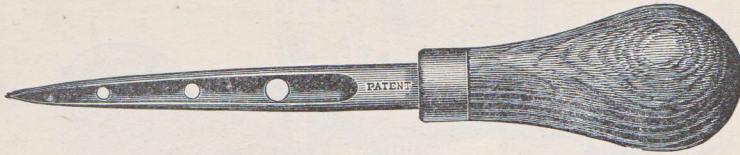
Sent by express on receipt of price as above.

FULL DIRECTIONS SENT WITH EACH MACHINE.



# Patent \* Belt \* Awl,

## THE BEST THING OUT.



THE TOOL IS ABOUT TWICE THE SIZE OF CUT.

### DIRECTIONS FOR USING.

For single leather belts the AWL will make the holes required. Also in double leather and rubber belts, but a SMALL BELT PUNCH used in all but single leather belts, is not objectionable.

Push the AWL through the belt until the right size hole is visible on opposite side. Put the end of lace through the hole in the AWL, pull back, and lacing will come with it every time. Turning or twisting the AWL to the right cuts the hole, but turning to the left only swells it without cutting. After a lace has been once through a hole push the AWL through back of the lace, insert lace in hole, and pull back again. By so doing it does not increase original size of hole, or require much strength to pull it through. When the belt is thoroughly laced, fasten the ends a little way back from lacing holes. In this way the lacing is left secure and will not loosen.

### Reasons why every one Running Belts should Use this Awl.

It prolongs the life of your belts by doing away with large punches, and saves you many times its cost in a very short time. It also saves time and patience.

One great objection against lace is, that they pull out of the belts, especially in wet places. The reason is, large holes are made in order to get the lace in, and as a natural consequence the lacing is loose in the holes, and soon pulls out. This AWL is a sure remedy, and by its use the lace will stay tight and firm until worn out. Large holes being avoided, the belt is not weakened as much, or as liable to break off along line of lacing holes. It saves teeth, tongues, and lips, for as all well know, the teeth are frequently resorted to as a help to pull through a lacing that sticks (except by those with artificial teeth, and certainly the AWL is especially useful to them). There seems to be every reason why this AWL should be used, and no reason why it should not.

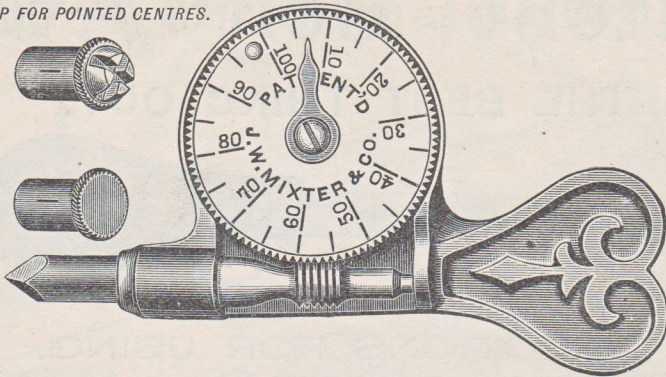
**PRICE \$1.00.**

Sent by mail postpaid, on receipt of cash as above.

**J. W. MIXTER SAW TOOL CO.,**  
PLYMOUTH, MASS.



STEEL CAP FOR POINTED CENTRES.



## IMPROVED SPEED-INDICATOR.

(NICKEL PLATED.)

The above cut represents our Speed Indicator, which will be found a very useful article to determine quickly and accurately the speed of any revolving shaft, pulley, or mandril. It is adapted to both pointed and hollow centres, and is correct and reliable. Any speed can be accurately counted.

To ascertain the speed of any shaft per minute, place the point of the indicator in the centre of the shaft, and for every hundred revolutions the dial will revolve once. Less than one hundred will be indicated by the pointer, which is to be placed at 100 before starting.

An important improvement in the way of a raised point on the dial, by which the operator can count by touch, by placing the ball of the thumb lightly on the dial while his eye is on his time-piece.

SENT BY MAIL, PREPAID, FOR \$1.00.

**EVERY MECHANIC SHOULD HAVE ONE.**

Full Directions sent with each Indicator.

STEEL CAP FOR POINTED CENTRES . . . . 50 CENTS EXTRA.



## TABLE OF SPEED FOR CIRCULAR SAWS.

SIZE OF SAW.	REVOLUTIONS PER MINUTE.	SIZE OF SAW.	REVOLUTIONS PER MINUTE.
8 inches . . . . .	4,500	42 inches . . . . .	870
10 " . . . . .	3,600	44 " . . . . .	840
12 " . . . . .	3,000	46 " . . . . .	800
14 " . . . . .	2,585	48 " . . . . .	750
16 " . . . . .	2,222	50 " . . . . .	725
18 " . . . . .	2,000	52 " . . . . .	700
20 " . . . . .	1,800	54 " . . . . .	675
22 " . . . . .	1,636	56 " . . . . .	650
24 " . . . . .	1,500	58 " . . . . .	625
26 " . . . . .	1,384	60 " . . . . .	600
28 " . . . . .	1,285	62 " . . . . .	575
30 " . . . . .	1,200	64 " . . . . .	550
32 " . . . . .	1,125	66 " . . . . .	545
34 " . . . . .	1,058	68 " . . . . .	529
36 " . . . . .	1,000	70 " . . . . .	514
38 " . . . . .	950	72 " . . . . .	500
40 " . . . . .	900		

It is very important that the exact speed of saws be given, and with the Speed Indicator there can be no mistake.

## SPEED OF EMERY-WHEELS.

The following table gives the number of revolutions per minute at which emery-wheels of different sizes should be used to render them both safe and durable:—

DIAMETER OF WHEEL.	REVOLUTIONS PER MINUTE.	DIAMETER OF WHEEL.	REVOLUTIONS PER MINUTE.
2 inches . . . . .	10,000	9 inches . . . . .	2,100
2½ " . . . . .	8,000	10½ " . . . . .	1,800
3 " . . . . .	6,000	12 " . . . . .	1,600
3½ " . . . . .	5,000	14 " . . . . .	1,350
4 " . . . . .	4,500	16 " . . . . .	1,200
5 " . . . . .	3,700	18 " . . . . .	1,050
6 " . . . . .	3,200	20 " . . . . .	950
7 " . . . . .	2,700	24 " . . . . .	800
8 " . . . . .	2,400		

To those using emery-wheels the Speed Indicator is of great value; as we have found by actual trial, that many were running their wheels at more than double the speed they had calculated upon, thus lessening their efficiency, and increasing the wear and tear of machinery, as well as running a needless risk. By the use of this neat little instrument, which is nickel plated, and can be carried in the pocket, all kinds of revolving machinery can be exactly speeded.

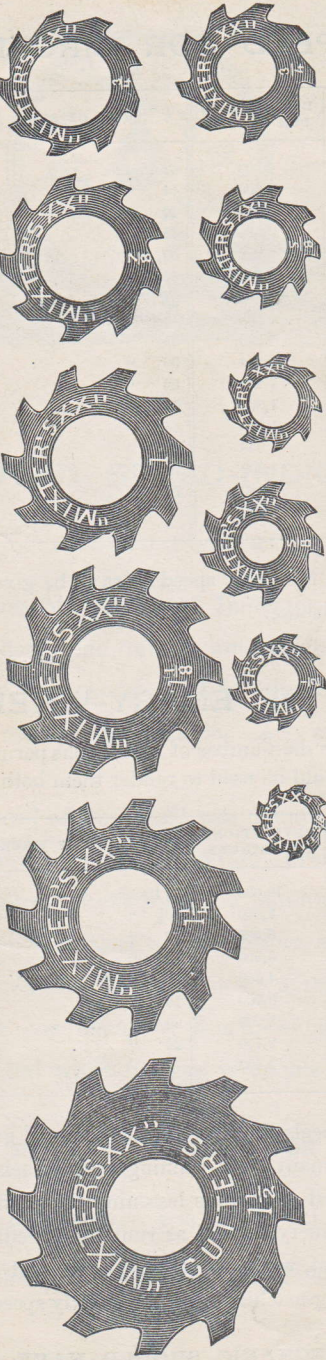
EVERY MECHANIC SHOULD HAVE ONE.



**END VIEW OF MIXTER'S XX CUTTERS,  
SHOWING THE DIAMETER OF CUTTERS FROM 3/8-INCH UP TO 1 1/2-INCH.**

Size . . . . .	3/8-inch.	1/2-inch.	3/4-inch.	7/8-inch.	1-inch.	1 1/8-inch.	1 1/4-inch.	1 1/2-inch.
Price . . . . .	\$0.50	\$0.50	\$0.60	\$0.70	\$0.80	\$0.90	\$1.00	\$1.25

Extra arbors for 3/8-inch, 1/2-inch, and 3/4-inch cutters, with 3/16-inch hole, \$2.00. Extra arbors for 7/8-inch and 1-inch cutters with 1/8-inch hole, \$2.00.



The upper row of cutters all have 1/2-inch holes, standard size, in the PATENT SELF-FEED CHAMPION GUMMER. The three left-hand cutters in the lower row have 3/16-inch holes, and the three right-hand ones have 1/16-inch holes. Extra arbors for the CHAMPION SELF-FEED GUMMER are made to fit both size holes, 3/8 and 1/2 inch, as per list above.

**Beware of bogus cutters claiming to be MIXTER'S.** All genuine Mixter cutters are stamped "MIXTER'S XX." If you order cutters of dealers, and they attempt to put you off with other makes, INSIST UPON HAVING "MIXTER'S XX" ONLY; as they are made of a superior quality of steel and temper, and one will outlast a half-dozen common cutters. IT PAYS TO HAVE THE BEST CUTTERS, as a good Gummer cannot do good work with poor cutters.

**HOW TO ORDER CUTTERS.**

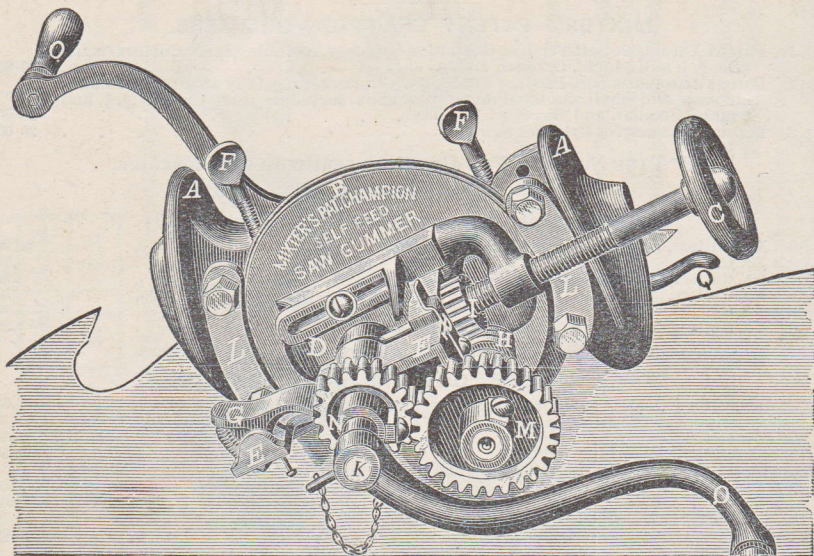
Order cutters sent by mail, and be sure to enclose the money (send post-office order, registered letter, or bank check) with order as per price-list above, and save express charges. We mail cutters post free, on receipt of cash with order, at LIST PRICE. Postage stamps received for small amounts. Give size of hole and size of cutter required, or send an impression of one end of the cutter on paper.







## PRICE-LIST OF REPAIRS.



In case any part of a gummer or swage is accidentally broken, we can furnish duplicate pieces at following prices, CASH WITH ORDER.

Mention whether for No. 1 (large double crank) or No. 2 (small single crank) Gummer.

AA	Frame or main casting . . . . .	\$5.00	by express.	
B	Circle carriage-way . . . . .	2.00	by mail; postage,	25 cents.
C	Feed screw . . . . .	1.50	"	15 "
D	Carriage for cutter-arbor . . . . .	1.50	"	25 "
EE	Arm, with pawl and spring . . . . .	2.00	"	25 "
FF	Thumb-screws, each . . . . .	.25	"	5 "
G	Pawl and spiral spring . . . . .	.25	"	5 "
H	Worm-gear . . . . .	2.00	"	15 "
I	Pinion (the worm-gear works in) . . . . .	.50	"	10 "
K	Arbor for cutter . . . . .	2.00	"	25 "
LL	Clamps, each . . . . .	.25	"	5 "
MorN	Cog-wheels, each . . . . .	.50	"	10 "
OO	Cranks, each . . . . .	.50	"	25 "
P	Flat spring to hold gears in place . . . . .	.25	"	free
Q	Hand-screws, each . . . . .	.25	"	free
	Brass and iron gauges, each . . . . .	.25	"	free
	Cutter grinder . . . . .	1.00	"	25 "
	Wrench . . . . .	.50	"	15 "
	Dies for swages, each . . . . .	.50	"	free

It is useless expense to send us broken pieces. Order the parts wanted from above list referring to corresponding letter on cut. SEND CASH AS ABOVE WITH ORDER. If you wish the parts sent by mail to save express charges, enclose the postage in addition to price, as above. Remit by Post-Office Order, Registered Letter, or Bank Draft. Postage Stamps received for fractions of a dollar.

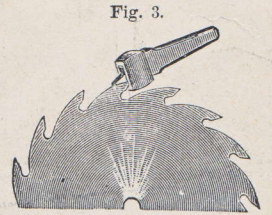
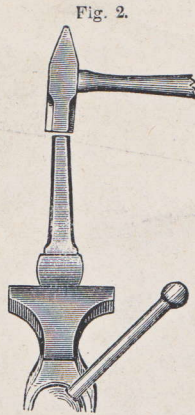
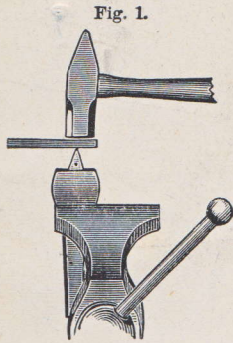
J. W. MIXTER SAW TOOL CO., PLYMOUTH, MASS.

GENERAL PRICE-LIST ON PAGE 23.



# DIRECTIONS FOR USING AND REPAIRING

# Mixer's Patent Duplex Swage.



Swage in proper position on the saw.

First see that the saw teeth are sufficiently hooking, so that the Swage can spread them at the points, leaving a short bevel on the under side. Do not try to swage blunt teeth. With each Swage we furnish free, a saw tooth gauge (and wrench combined), which gives the proper angle that the teeth should be filed to. This shape tooth has been found to be the best for all kinds of sawing. The teeth must be filed to fit the Swage, or the Dies of the Swage must be ground to fit the teeth.

To remove the Dies from the Swage, place the Swage loosely in a vise, and strike with a hammer, on a piece of soft iron, held on the point of the tongue; as shown in cut (Fig. No. 1).

To replace the Dies in the Swage, and drive the Band on; Reverse the position of the Swage in the vise; and strike on the hammer end of the Swage, as shown in cut, (Fig. No. 2).

To swage the teeth, use the rounding or spreading die first, placing the Swage on, with the tongue or middle die on the top of the tooth, and down flat; as shown in cut, (Fig. No. 3).

The BRASS GUIDES are intended to keep the Swage in a direct line with the tooth, and hold the centre of the rounding die in the middle of the tooth; also to prevent the Swage jumping off sidewise against the corners of the tooth.

Both guides, or only one, may be used, as the operator prefers. After the spreading is done, use the flat die to point with.

The points of the teeth will need no filing, except occasionally a slight touch. By raising or lowering the hammer end of the Swage, the points of the teeth may be turned up or down, as desired. A drop of oil on the dies will prevent undue friction, and assist the swaging. After the swaging is done, the corners should be jointed off true and even, with the side file.

When swaging a saw the first time, it is advisable not to attempt to spread the teeth fully the first time around, but rather to swage moderately at first, then file, and swage again before finishing. This makes better shaped and stronger shoulders to the teeth.

For No. 2 and No. 3 Swages, use a 1 1/2 to 2 pound hammer.

For No. 0 and No. 1 Swages, use a lighter hammer.

Extra dies for Swages sent by mail. Price 50 cents each, cash with order.

Dies of any shape or bevel, made to order at above price.

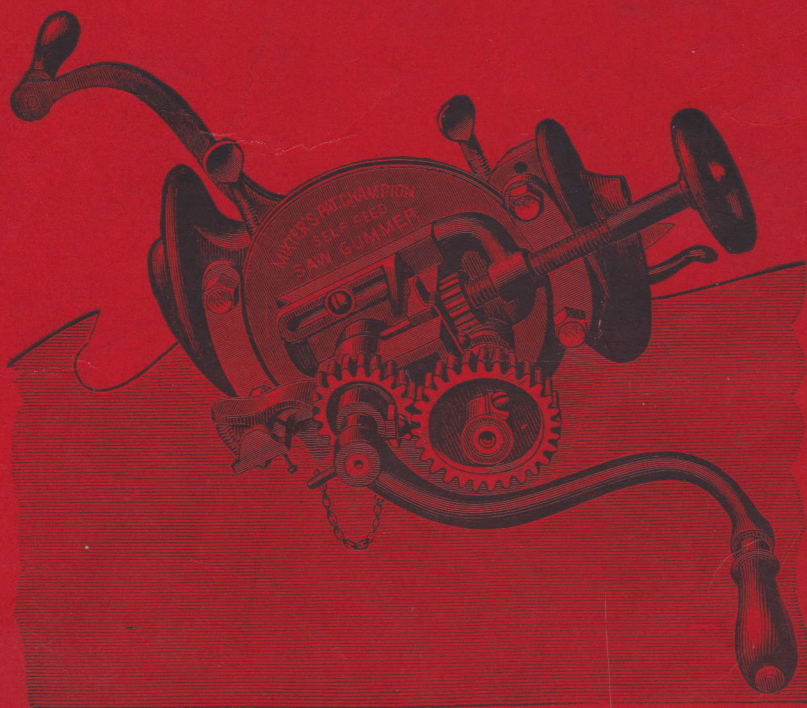
Old Swages can be repaired if sent to us by mail.

If new dies only are needed, send us the old dies for samples, or give us the marks and numbers on your swage. Do not send the whole swage when only dies are needed.

The New PATENT GUIDES put on old swages for 50 cents.

**J. W. MIXTER SAW TOOL CO.,**  
**SOLE MANUFACTURERS, PLYMOUTH, MASS.**







# A FEW LATE TESTIMONIALS

Proving the Superiority of the

## MIXTER GUMMERS and CUTTERS

Over all others in the Market.

---

CATAWBA, ROANOKE CO., Va., Jan. 4, 1886.

Messrs. J. W. MIXTER & Co., Plymouth, Mass.

GENTLEMEN—Please let me know what you can send me your No. 2 Duplex Swage, and No. 2 Side File for, postpaid, to my Postoffice. I am using one of your Patent Saw Gummers, and I like it so much I want to try your Swages, etc.

Yours respectfully, W. C. THOMAS.

WADESTOWN, W. Va., Dec. 29, 1885.

Messrs. J. W. MIXTER & Co., Plymouth, Mass.

DEAR SIRs—I have been using your Patent Champion Self-Feed Saw Gummer, since July 3, 1885, and after once using it I laid aside one of the best Patent Emery Wheel Gummers, and declared I would never use it again, although it cost me \$30.00.

Respectfully Yours, T. W. BARR.

Messrs. J. W. MIXTER & Co., Plymouth, Mass.

GENTLEMEN—I have been using your Gummer furnished to Zearfoss & Hilliard, and it is just the thing. I previously used an emery Gummer, but find this much the better in every particular.

Respectfully, G. F. ZEARFOSS.

Sawyer for Zearfoss & Hilliard.

99 Delaware St., Easton, Pa.

Messrs. J. W. MIXTER & Co.

GENTS—Enclosed find check for \$6.00, for which please send 1 1-4 inch cutters for your Saw Gummer we received from you some time ago. We would say in regard to your Gummer that it meets a long felt want. Our experience with other makes of Gummers teaches us the superiority of your machine.

Very truly, M. D. KALBACH.

PALMYRA, Lebanon County, Pa.

Messrs. J. W. MIXTER & Co., Plymouth, Mass.

GENTLEMEN—Enclosed find \$2.15, for which send me by mail worm gear for Mixer's Patent Gummer. I have used your Gummer for *five years*, and this is the first repair.

Yours, etc., J. W. WEST.

BIRDS, Lawrence County, Ill.

CHEPACHET, R. I.

DEAR SIRs—We have been using your "Patent Self Feeding Saw Gummer" for the last four months, and it gives perfect satisfaction. We have done more work with one of your "XX Cutters," than we did with *seven* cutters and a gummer of another make.

Yours truly, ROBERT SWEET.

J. W. MIXTER & CO., Plymouth, Mass.



# SPECIAL CASH DISCOUNTS.

Mixer Patent Automatic Self-Feeding Champion Saw Gummer, No. 1 (large size),	-	<b>\$30.00</b>
Discount for Cash, 33 $\frac{1}{3}$ per cent,	-	<b>10.00</b>

Net Cash,		<b>\$20.00</b>
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	No. 0.	No. 1.	No. 2.	No. 3.
The Mixer Duplex Swages,				
Regular prices,	<b>\$4.00</b>	<b>\$5.00</b>	<b>\$6.00</b>	<b>\$7.00</b>
Discount for Cash, 25 per cent,	<b>1.00</b>	<b>1.25</b>	<b>1.50</b>	<b>1.75</b>
Net Cash,	<b>\$3.00</b>	<b>\$3.75</b>	<b>\$4.50</b>	<b>\$5.25</b>

SWAGES sent by mail on receipt of 25 cents additional to above price for postage.


We will send No. 1 (large size) Gummer and No. 2 Swage for **\$23.50**, cash with order.

No. 2 Gummer (small size, page 8), price **\$25.00**. Net cash with order, **\$17.50**.

Send Post-Office Money Order, Registered Letter, or Bank Draft, and we will mail you receipt in full, and ship the goods promptly by Express or Freight as you may direct. If you prefer to see the goods before paying, we can send them by Express C. O. D. subject to examination. In this case you will please remit a small amount, say \$5.00, to guarantee good faith, the balance to be paid on receipt of goods. Everything warranted as represented.

Trusting we may receive your orders, we are respectfully yours,

**J. W. MIXTER SAW TOOL CO.,** PLYMOUTH, MASS.,

 Full directions for using sent with each Gummer.

SOLE MANUFACTURERS.

The MIXTER GUMMER and "XX" Cutters are superseding all others.

25 per cent. discount on Cutters by the dozen.

{ We call attention to improvements; a new SLIDING GUAGE (on cut page 6) to use when the backs of teeth are uneven, instead of right hand thumb }  
 screw. New SAW ROUNDING MACHINE, page 18. PATENT BELT AWL, page 19. Improved No. O SWAGE, for small saws, with fine teeth, page 15. }  
 { Also New PATENT GUIDES on all our Swages, shown on pages 14-15. Also, New GUMMER FOR CYLINDER SAWS, 2d page of cover. }