

The **E. R. BURNS SAW CO.**

— Offices and Works —

**548 and 550 Dundas Street
135, 137, 139, 141, 143, 145 Sheridan Ave.**

TORONTO, ONTARIO



**Manufacturers of CIRCULAR, SHINGLE,
RESAWING, EDGER, GROOVING, CON-
CAVE, INSERTED TOOTH CIRCULAR,
PERFORATED LANCE DRAG, GANG,
CROSS-CUT AND BAND**

SAWS

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MANUFACTURERS OF

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EDGER, GROOVING, CONCAVE,
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PERFORATED LANCE DRAG,
GANG, CROSS-CUT AND BAND

S A W S



OFFICES AND WORKS:

548 and 550 DUNDAS STREET

135, 137, 139, 141, 143, 145 SHERIDAN AVE.

TORONTO, ONTARIO



NOTICE

By our improved process we are enabled to produce an even temper. All our Saws are scientifically hammered, thus stretching the plate where required and uniformly distributing the tension, so that the rim of the Saw may expand by the centrifugal force produced by the speed of the Saw.

Shipping instructions should be given which may prevent delay, expense and annoyance. Our prices are free on board cars in Toronto, and we invariably charge for boards and cases. *All goods returned or shipped are at purchaser's risk and expense.*

All orders will receive our best attention and be forwarded as speedily as possible.

Examine list carefully before ordering, as various alterations and additions have been made.

Thanking you for past favors, we respectfully solicit a continuance of your patronage.

HINTS

That may be found useful should your saw be giving you trouble.

We often receive complaints of circular saws not performing the work for which they are intended. The reasons of these complaints are so numerous that we deem it our duty to mention a few of them. At the same time we do not wish to state that the saw is never in fault, but in nineteen cases out of twenty it is not; and we think it hard to bear blame for an inexperienced sawyer or for a bad mill.

In many cases a saw condemned by one party will be resold (although at a loss) and pronounced perfect. How is this to be accounted for? Why simply because some men excel others in their knowledge of running saws.

It is frequently the case that saws are not set straight before being put on the mandrel, but, when put on and screwed up, spring considerably, and, when taken off, become perfectly straight. This is easily accounted for—the collars are not true; and we regret to state that many good machinists think the saw collar but a very small item with regard to the saw running correctly, while it is just as important for it to be kept true as it is for the steam chest, cylinder or safety-valve of a steam engine to be kept in order.

With a view to obviate some of these difficulties, we will mention a few of the causes which may tend to produce dissatisfaction with the best saws in the world:

TOO THIN A SAW—TEETH TOO COARSE—A SAW NOT PROPERLY HUNG: one that is not Evenly Set; that is not Filed Square or True; a Tooth that has not Enough Pitch, or that has Too Much Pitch (but this can be regulated with a few strokes of the file); a Tooth whose Back is Higher than the Point, that has not a free chamber for the dust; a Saw not Properly Balanced on the Mandrel.

TO BALANCE PROPERLY, a saw must be perfectly round; must have teeth of equal size and shape, and gullets of equal depth, or one portion of the saw will be heavier than another, causing it to leap and tremble. If some teeth are long and some short, the long ones will do more work than necessary; thus an undue strain will be put upon that portion of the saw, and will have a tendency to crowd the teeth out of their due course, and thus make rough and uneven lumber, and cause the saw to heat. A saw too thick in the centre will sometimes heat. Further causes of trouble are; a Carriage that Springs; a Carriage Not Properly Lined with the Saw; a Mandrel that Springs; Collars Not True, and many other causes will give rise to complaints against a saw and saw-maker.

A very general cause is a dull saw, not only dull on the extreme point, but the cutting portion of the tooth under the points.

The points of saw-teeth are the only portions of the saw which should come in contact with the lumber. They must be kept sharp by frequent use of the file, and set by springing, swaging or spreading when necessary, so as to clear the blade of the saw nicely, and thus prevent friction. As the points of the Teeth do all the work, they speedily become dull and round, the sides of the points wearing away as well as the points themselves. Now, for your own sake and our sake, take care that these points are kept right, as the reverse of this will keep a poor man always poor, and give a bad reputation to the saw, saw-mill builder and saw-maker.

A good sawyer can tell, with file or set, whether he has a good saw, as he knows about what temper he wants, and, by a straight-edge, can see if it is true and ground to his liking. Let the saw always be tried before tightening up the collars, and you will see if it runs true; should it not do so, let us know at once where the fault is, and we will remedy it; but do not, in any case, attempt to run a saw of which you are doubtful, as by so doing you may spoil the best saw ever made.

The points of a saw should be kept in order with a swage. A saw often improves in temper with use, as the extreme points of a new saw are sometimes a little soft.

HOW TO BE A SUCCESSFUL SAWYER.

1. Acquire sufficient knowledge of machinery to keep a mill in good repair.
2. See that both the machinery and saws are in good order.
3. It does not follow because one saw will work well that another will do the same on the same mandrel, or that even two saws will hang alike on the same mandrel, on the principle that no two clocks can be made to tick alike, no two saws can be made that will run alike.
4. It is not well to file all the teeth of circular saws from the same side of the saw, especially if each alternate tooth is bent for the set, but file one-half the teeth from each side of the saw, and of the teeth that are bent from you, so as to leave them on a slight bevel and the outer corner a little the longest.
5. Never file any saw at two sharp or acute angles under the teeth, but on circular lines, as all saws are liable to crack from sharp corners.

6. Keep your saws round, so that each tooth will do its proportional part of the work, or, if a reciprocating saw, keep the cutting points jointed on a straight line.

7. The teeth of all saws wear narrowest at the extreme points; consequently they must be kept spread so that they will be widest at the very points of the teeth, otherwise saws will not work successfully.

8. Teeth of all saws should be kept as near a uniform shape and distance apart as possible, in order to keep a circular saw in balance and in condition for business.

FILING OR SHARPENING THE TEETH OF SAWS.

The greatest wear of a saw is on the under sides of the teeth. File nearly to an edge (but not quite), leaving a short bevel of say 1-32 of an inch wide on the under side of the point. BUT IN NO INSTANCE FILE TO FINE POINT AND THIN WIRE EDGE.

DIRECTIONS FOR HANGING CIRCULAR SAWS.

1. The fast collar on the saw mandrel must be perfectly true, and slightly concave on the face; the loose collar should be flat or slightly concave. The object of this arrangement of the collars is to insure their pressing the saw at their peripheries, and also for the purpose of maintaining the saw flat and straight on the log side.

2. The mandrel must fill the eye of the saw, go in free, and both pins have a fair bearing.

3. The saw must be in proper line with the carriage, and the carriage must run true.

4. If, after the collars are screwed up, the face of the saw is not flat, or it does not run true, segments of circles cut from thin paper should be put between the fast collar and the saw, sufficient in thickness to remedy the defect.

5. The mandrel must be level, so that the saw will stand plumb. The bearings must fill the boxes, and the end play should be very slight, if there is any.

6. Set the spread wheel full flush with the face of the saw, and half an inch clear of the teeth.

7. Round off the saw so that all teeth will cut the same amount, and be sure that the very points of the teeth are widest.

8. Do nearly all the filing on the under sides of the teeth, and see that they are well spread at the points; file square and have them project alike on both sides of the saw.

9. Adjust the mandrel so as to give the saw a little lead into the log. This lead or deflection should not exceed $\frac{1}{8}$ inch in 20 feet.

10. Adjust the guide pins clear of the teeth, and close enough to touch the plate at some point in its revolution. This should be done while the saw is in motion.

11. Do not try the experiment of bending each alternate tooth for the set when using Inserted Tooth Saws.

12. File the teeth hooking, so that the swage will spread them at the points, and use a light hammer in swaging, say $\frac{3}{4}$ to 1 pound weight.

13. If a saw warms at or near the centre, it is evident that it requires more lead into the log. If it warms near the teeth, it should be led out of the log. The only proper way to change the line of direction of the saw is by slowing the mandrel in the way necessary to accomplish the object.

14. If, after the mandrel and guide pins have been properly adjusted, the saw does not run straight, but will run either way, as the case may be, a thorough examination should be made, and the difficulty ascertained and corrected. The fault most commonly met with is the want of power sufficient to run the saw at a uniform speed. No saw can do work running at high velocity, unless the motion is made uniform. The proper remedy to be applied, when power is deficient, is to reduce the speed of the saw to the velocity that can be maintained, and have the saw hammered stiff. The saw should be hammered special if it is to run a very high speed.

15. In filing solid tooth circular saws, or the teeth of inserted tooth saws, keep the throats or roots of the teeth round, or as the saws are when new. Angles or square corners filed at the roots of the teeth will almost invariably cause a solid saw to crack. The filing of such angles or square corners will cancel the warranty on any saw. The back or top of the teeth leads or guides the saw, and should be filed square across. The under side of the teeth may be filed a little beveled on the teeth of saws that are bent alternately for the set, so as to leave the outer corner of the cutting edge longest.

ON GUMMING SAWS.

Some sawyers think a circular saw should work the same until worn out, if it is not accidentally sprung in use, or strained in gumming. So far as any damage to the saw is concerned, there is no difference between the use of a burr gummer and a file, but if proper care is not exercised in the use of the emery wheel, there is more danger from their use than either the file or burr.

If the condition of the saw is such that a considerable depth is required to be cut into the plate, the operation should be performed by going over the saw several times, only allowing the wheel to grind away so much as can be done without heating the saw to a blue. There is no excuse whatever for crowding the emery wheel so as to heat the saw red hot, as this is sure to injure the saw, often

glazing it, where the wheels come in contact, so hard that a file will make no impression whatever. From these hard spots on the outer surface small cracks commence, invisible at first to the eye, but gradually enlarging, until they become dangerous fractures. After a few times gumming, however, the saw will enlarge on the rim, so that the slightest warmth will cause it to buckle, and there is no remedy left but to send it to a saw-maker and have it re-hammered. A saw re-hammered will generally run better than when new, because all the elasticity (or nearly all) is worked out of the saw by using, and it generally works stiffer than when new.

After saws have been gummed two or three times, no matter how it is done, they will require hammering before they will run properly.

If a press gummer is used, they should be hammered every time they are gummed.

FROZEN TIMBER AND SAWS FULL OF FROST.

Frosted steel is always brittle. No intelligent woodman will use a good chopping axe on hard frozen timber until after he has taken the frost out of it, and no intelligent sawyer ought to attempt to set the teeth of any saw without taking out the frost, if there is any frost in it. Saws are manufactured at a temperature of about seventy degrees. If heated above this the steel expands. If the temperature of the saw gets below this it contracts in like proportion. The rim, being larger than the centre, contracts the most, and the centre becomes weak, and the saw appears rim bound, as sawyers term it. If a saw is started full of frost in frozen timber, the frost starts from the centre of the saw, because the timber being at a freezing point keeps the saw cool, especially at the rim, unless the friction against the guide pins cause it to warm at that point. The journals, however, soon become warm, and warm up both mandrel and collars, which communicate the heat to the saw, weakening the centre. If at the same time the saw warms at the rim by friction against the pins, leaving the centre contracted by cold, any saw in this condition will work very badly, and just like a saw that we call "fast." It will run crooked at the rim, and at the same time be weak at the centre. The only way to overcome this difficulty is to take the frost entirely out of the saw before it is put to work. This may be done in a steam mill by throwing a few buckets of hot water on the saw, and in a water mill by pressing a piece of board against the sides of the saw when in motion. Frozen timber being very hard to cut, it is necessary that the teeth should be in the very best of order, with full corners, and dressed so that the under sides of the teeth are wider than the upper part at the cutting point.

If a saw is properly handled, it will bear to get a little warm at the rim, or the centre, or both, so that it will feel quite warm to the hand, and still run stiff and true and do good work. A saw may be hammered so open and loose that the centre will push in and out (drop through, first one way and then the other) like the bottom of a tin pan, so that it will not hang straight on the mandrel, and yet be run at such velocity as to expand the rim by the centrifugal force, and run true and work well. Crowding a saw beyond what it will well bear, or when it is out of order, or trying to see how much can possibly be sawed without sharpening or putting in order, is a risk which ought not to be run, and is likely to prove a costly experiment. We have had men tell us of sawing twenty thousand feet of inch lumber with one of our saws without sharpening or putting it in order, and running all day without touching it. This is neither profitable nor prudent. What man could mow all day without whetting his scythe, or drive his horse a hundred miles in a day without feeding him?

Should a saw run a little out of true on the rim, it may be made to run true by packing with writing paper between the saw and fast collar. It is also necessary that the saw mandrel should be PERFECTLY LEVEL, so that the saw will hang EXACTLY PLUMB.

NOTE.—Never attempt to run a saw that is dishing on the log side, as it will be sure to draw towards the log. *The carriage track must be straight, and the carriage run true. The flange that is fast to the mandrel should be a little concave, and the loose flange perfectly flat.*

TERMS OF WARRANTY

Each Saw is warranted perfectly true, or as true as it is possible to make it, free from flaws and seams. If found to be defective in any of these particulars, it may be returned, and if on examination we are satisfied the Saw is at fault, all necessary repairs will be made free of charge, or a new Saw given in exchange (provided it is returned within thirty days from delivery).

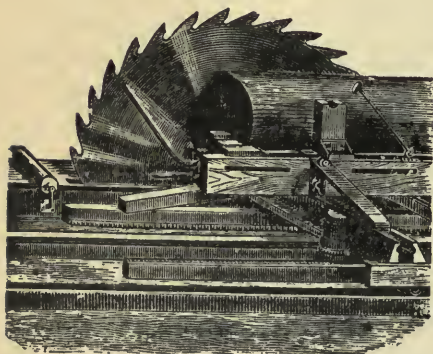
The practice of using a cold chisel as punch for re-toothling a Saw is almost certain to distort or crack the plate, and corners filed square in the gullet of the tooth will frequently produce the same result, particularly in frosty weather. Our warranty does not cover Saws breaking from either of these causes.

E. R. BURNS SAW CO.

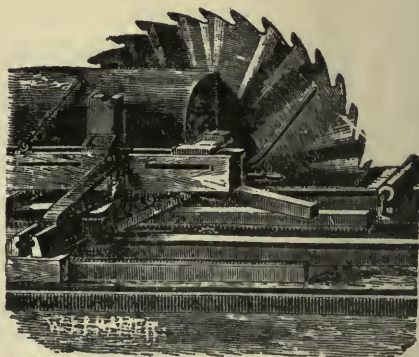
Directions for Ordering CIRCULAR SAWS



Standing in front of Circular Saw, when cutting toward you, if the log or timber passes to the Right of the Saw, it is a Right Hand Saw; if to the Left, it is a Left Hand Saw. Order Blanks furnished on application.



LEFT HAND SAW.



RIGHT HAND SAW.

Diameter of Saw.

Rip or Cross-Cut.

Gauge at Rim.

Gauge at Centre.

Number of Teeth.

Style of Tooth.

Temper to Swage or Spring Set.

Size of Mandrel Hole.

Size of Pin Holes.

Distance from centre to centre
of Pins.

Right or Left Hand. (See above.)

Speed—Revolutions per Minute.

Greatest Feed per Revolution.

Kind of Lumber to be Sawed.

SOLID TOOTH CIRCULAR SAWS

PATENT GROUND AND TEMPERED

Made from Our Celebrated Silver-Steel.

Workmanship Unequalled.

Diameter, Inches	Thickness Gauge	Size of Hole, Inch	List Price, Each	Extra for Each Additional Gauge (Heavier)	Price for Beveled New Saws Gauge
1	24	$\frac{3}{8}$	\$0 55	\$0 01	\$0 06
1 1/2	24	$\frac{3}{8}$	60	01	07
2	23	$\frac{3}{8}$	65	01 1/2	08
2 1/2	22	$\frac{3}{8}$	70	02	09
3	21	1/2	75	02 1/2	10
3 1/2	20	1/2	85	03	12
4	19	3/4	1 10	03	14
5	19	3/4	1 30	04	16
6	18	3/4	1 55	05	18
7	18	3/4	1 85	06	20
8	18	3/4	2 20	08	22
9	17	7/8	2 75	10	25
10	16	1	3 30	12	28
11	16	1	3 80	14	30
12	15	1	4 15	17	35
14	15	1 1/8	5 00	21	40
16	14	1 1/8	6 00	25	50
18	13	1 1/4	7 50	30	60
20	13	1 5/8	9 00	35	70
22	12	1 5/8	11 00	45	80
24	11	1 3/8	13 00	55	90
26	11	1 3/8	15 00	65	1 05
28	10	1 1/2	17 00	80	1 20
30	10	1 1/2	19 00	90	1 30
32	10	1 5/8	22 00	1 00	1 40
34	9	1 5/8	25 00	1 20	1 55
36	9	1 5/8	28 00	1 40	1 70
38	9	1 5/8	31 00	1 75	1 85
40	9	2	36 00	2 00	2 00
42	8	2	42 00	2 50	2 20
44	8	2	50 00	3 00	2 40
46	8	2	60 00	3 50	2 60
48	8	2	70 00	4 00	2 80
50	7	2	80 00	4 50	3 00
52	7	2	90 00	5 00	3 25
54	7	2	100 00	6 00	3 50
56	7	2	115 00	7 00	3 75
58	7	2	130 00	8 00	4 05
60	6	2	145 00	9 00	4 35
62	6	2	160 00	10 00	4 65
64	6	2	180 00	12 00	5 00
66	6	2	200 00	15 00	5 35
68	5	2	225 00	18 00	5 75
70	5	2	255 00	21 00	6 15
72	5	2	290 00	24 00	6 55
74	5	2	330 00	27 00	7 00
76	5	2	375 00	30 00	7 50

No extra charge for saws one gauge thicker than list.

Saws 38 inches and under beveled one gauge without extra charge.

Saws 40 inches and over beveled two gauges without extra charge.

We furnish Lathe Saws for handle turning machines, and similar work, at special prices.

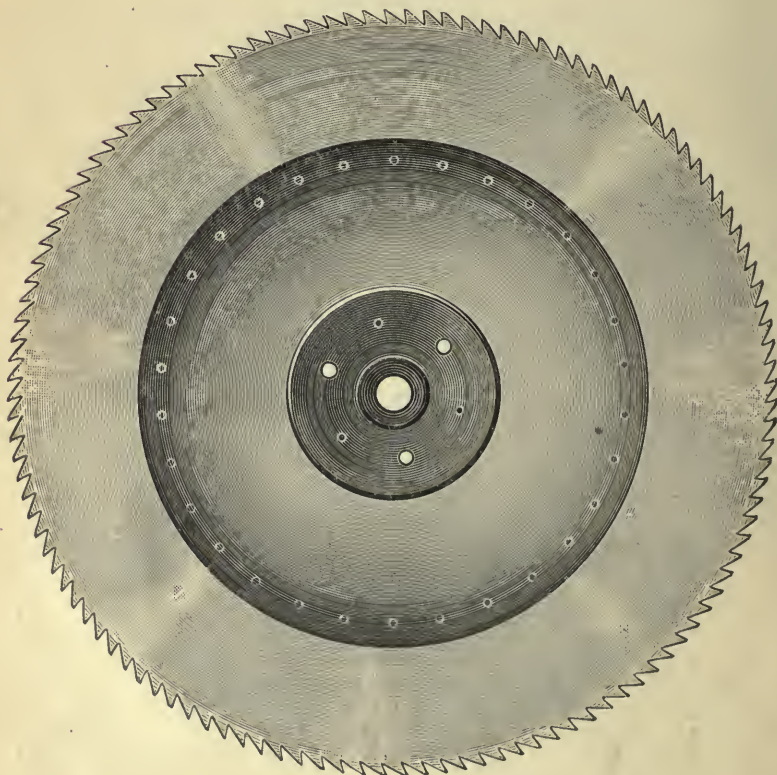
GROOVING SAWS

Thickness Inches..	$\frac{1}{8}$	3-16	$\frac{1}{4}$	5-16	$\frac{3}{8}$	7-16	$\frac{1}{2}$
4 in. diameter....	\$2 60	\$3 00	\$3 40	\$3 80	\$4 20	\$4 60	\$5 00
5 " "	3 00	3 40	3 80	4 20	4 60	5 00	5 40
6 " "	3 40	3 80	4 20	4 60	5 00	5 40	5 80
7 " "	3 80	4 20	4 60	5 00	5 40	5 80	6 20
8 " "	4 20	4 60	5 00	5 40	5 80	6 20	6 60
9 " "	4 60	5 00	5 40	5 80	6 20	6 60	7 00
10 " "	5 00	5 40	5 80	6 20	6 60	7 00	7 40
11 " "	6 00	6 40	6 80	7 20	7 60	8 00	8 40
Space of Teeth....	$\frac{1}{2}$ in.	1 in.	1 in.	$1\frac{1}{4}$ in.	$1\frac{1}{2}$ in.	$1\frac{3}{4}$ in.	2 in.

Saws with less space or special teeth extra price.

SILVER STEEL SHINGLE SAW

PATENT GROUND



RE-SAWING OR SIDING SAWS

Diameter, Inches	Gauge	Price, Each	Diameter, Inches	Gauge	Price, Each
16	13 x 17	\$7 50	28	9 x 13	\$20 60
16	12 x 16	7 75	28	9 x 14	21 80
16	11 x 15	8 00	28	8 x 13	22 60
18	12 x 16	9 30	30	9 x 13	22 90
18	11 x 15	9 60	30	9 x 14	24 20
18	12 x 17	9 90	30	8 x 13	25 10
20	12 x 16	11 10	32	9 x 13	26 20
20	11 x 15	11 45	32	9 x 14	27 60
20	12 x 17	11 80	32	8 x 13	28 60
22	11 x 15	13 40	34	9 x 13	29 65
22	10 x 14	13 85	34	8 x 13	31 20
22	11 x 16	14 20	34	8 x 14	32 75
24	10 x 14	15 70	36	8 x 13	34 80
24	9 x 13	16 25	36	8 x 14	36 50
24	10 x 15	16 60	36	7 x 14	39 60
26	10 x 14	18 15	38	8 x 12	36 55
26	9 x 13	18 80	38	8 x 13	38 40
26	10 x 15	19 20	38	7 x 13	42 00

SHINGLE SAWS

TAPERED TO 14 GAUGE

MACHINE GROUND

30 inches.....	\$22 00	40 inches.....	\$48 00
32 ".....	24 00	42 ".....	58 00
34 ".....	28 00	44 ".....	69 00
36 ".....	34 00	46 ".....	85 00
38 ".....	42 00	48 ".....	99 00

MULAY SAWS

EXTRA TEMPER

Inches Wide	10	11	12	14	Each additional Gauge
6½ feet to 6 gauge....	\$10 75	\$12 00	\$13 00	\$15 25	\$0 50
7 " 6 ".....	12 00	13 50	15 00	16 50	0 55
7½ " 6 ".....	13 75	14 50	15 50	17 50	0 60
8 " 6 ".....	18 00	20 00	0 65

MILL SAWS

EXTRA TEMPER, PATENT GROUND

No. 6 Gauge.....	\$1 40 per foot
No. 7 ".....	1 30 "
No. 8 ".....	1 15 "

NET RATES FOR REPAIRING CIRCULAR SAWS

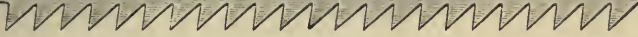
Diameter	Hammering	Gumming and Hammering	Cutting down, Re-Toothing and Hammering	Grinding and Beveling per Gauge
4	\$0 20	\$0 30	\$0 40	\$0 18
6	30	45	55	25
8	40	55	65	35
10	50	70	80	45
12	60	85	95	50
14	70	1 00	1 25	60
16	80	1 10	1 35	70
18	90	1 25	1 55	80
20	1 00	1 40	1 70	90
22	1 10	1 55	1 80	1 00
24	1 20	1 70	1 90	1 20
26	1 30	1 85	2 15	1 40
28	1 70	2 55	2 90	1 60
30	1 80	2 70	3 15	1 80
32	1 95	2 90	3 60	2 00
34	2 05	3 05	3 95	2 20
36	2 15	3 25	4 25	2 40
38	3 40	4 95	6 35	2 60
40	3 60	5 20	6 95	3 00
42	3 80	5 45	7 45	3 50
44	3 95	5 75	7 75	3 70
46	4 15	6 00	8 10	3 80
48	4 30	6 25	8 50	4 00
50	5 00	8 50	11 00	4 20
52	5 20	8 85	11 50	4 30
54	5 40	9 20	12 15	4 50
56	6 15	11 20	14 45	4 70
58	6 40	11 60	15 05	4 80
60	6 60	12 00	15 65	5 00
62	9 30	15 50	19 50	5 20
64	9 60	16 00	20 20	5 40
66	9 90	16 50	21 00	5 50
68	10 20	17 00	21 30	5 70
70	10 50	17 50	21 75	5 90
72	10 80	18 00	22 50	6 00

BUSHING, 4 inch to 30 inch, 50 cents; 32 inch to 48 inch, 75 cents; 50 inch to 72 inch, \$1.00.

NET RATES FOR REPAIRING CIRCULAR SHINGLE SAWS

Diameter	Hammering	Gumming and Hammering	Grinding and Hammering		
			1 Gauge	2 Gauge	3 Gauge
30	\$2 75	\$3 90	\$4 50	\$6 00	\$7 50
32	2 90	4 15	4 80	6 30	7 80
34	3 05	4 45	5 10	6 60	8 10
36	4 30	7 20	5 40	6 90	8 40
38	4 55	7 60	5 70	7 20	8 70
40	4 80	8 00	6 00	7 50	9 00
42	5 00	8 40	6 30	7 80	9 30
44	5 25	8 80	6 60	8 10	9 60
46	5 50	9 20	6 90	8 40	10 00

Taking off and fitting on collar\$1 25



SILVER STEEL GANG SAWS

GANG SAWS

15 to 13 gauge.....	\$1 00 per foot
12 to 11 "	1 10 "
10 to 9 "	1 15 "
8 "	1 30 "
7 "	1 55 "
6 "	1 75 "

Standard width, 8 inches; each additional inch in width, 10 per cent. added to above prices.

IMPROVED CHAMPION DRAG SAWS

\$1 20 per foot, set and filed.

DRAG OR BUTTING SAW

Cross-Cut Tooth.....	\$0 87 cents per foot, set and filed
Mill Tooth.....	87 " " " "

PERFORATED AND PLAIN LANCE TOOTH
DRAG SAWS

PRICES ON APPLICATION.



PRICES OF OUR CHISEL-TOOTH CIRCULAR SAWS WITH No. 2 TEETH

Diameter in inches	Gauge at Rim	Number of Teeth in Saw	PRICE	Greatest Number of Teeth that can be put in a Saw	Size of Mandrel Holes	Number of Bits given with each Saw	Extra Shanks given with each Saw	Diameter in inches	Gauge at Rim	Number of Teeth in Saw	PRICE	Greatest Number of Teeth that can be put in a saw	Size of Mandrel Holes	Number of Bits given with each Saw	Extra Shanks given with each Saw
10		10	\$12 00	10	1	100	2	42					2	400	4
12		12	15 00	12	1	100	2	44					2	400	4
14		14	17 00	14	1 1/8	100	2	46					2	400	4
16		16	20 00	16	1 1/8	100	2	48					2	400	4
18		18	23 00	18	1 1/4	100	2	50					2	400	4
20		20	27 00	20	1 1/8	100	2	52					2	500	5
22		20	31 00	24	1 1/8	200	2	54					2	500	5
24		20	35 00	26	1 3/8	200	2	56					2	500	5
26		24	40 00	28	1 3/8	200	2	58					2	500	5
28		24	45 00	30	1 1/2	200	2	60					2	500	5
30		28	50 00	32	1 1/2	200	2	62					2	500	5
32		28	55 00	34	1 5/8	300	3	64					2	500	5
34		32	60 00	36	1 5/8	300	3	66					2	500	5
36		32	65 00	38	1 5/8	300	3	68					2	500	5
38		34	70 00	42	1 3/4	300	3	70					2	500	5
40		34	75 00	44	2	300	3	72					2	500	5

PRICES OF OUR CHISEL-TOOTH CIRCULAR SAWS WITH No. 2 1/2 TEETH

Diameter in inches	Gauge at Rim	Greatest Number of Teeth that can be put in a Saw	PRICE	Number of Bits given with each Saw	Extra Shanks given with each Saw	Diameter in inches	Gauge at Rim	Greatest Number of Teeth that can be put in a Saw	PRICE	Number of Bits given with each Saw	Extra Shanks given with each Saw
12		12	\$21 00	100	2	44		50	\$118 00	400	4
14		14	24 00	100	2	46		52	128 00	400	4
16		16	28 00	100	2	48		54	142 00	400	4
18		18	31 00	100	2	50		56	154 00	400	4
20		20	34 00	100	2	52		60	176 00	500	5
22		24	45 00	200	2	54		62	196 00	500	5
24		26	48 00	200	2	56		64	220 00	500	5
26		28	52 00	200	2	58		66	250 00	500	5
28		30	56 00	200	2	60		70	284 00	500	5
30		32	61 00	200	2	62		74	323 00	500	5
32		34	66 00	300	3	64		76	358 00	500	5
34		36	75 00	300	3	66		78	398 00	500	5
36		38	84 00	300	3	68		80	444 00	500	5
38		42	89 00	300	3	70		82	494 00	500	5
40		44	94 00	300	3	72		84	544 00	500	5
42		46	104 00	400	4						

PRICES OF OUR CHISEL-TOOTH CIRCULAR SAWS WITH No. 3 TEETH

Diameter in inches	Gauge at Rim	Number of Teeth in Saw	PRICE	Greatest Number of Teeth that can be put in a Saw	Size of Mandrel Holes	Number of Bits given with each Saw	Extra Shanks given with each Saw	Diameter in inches	Gauge at Rim	Number of Teeth in Saw	PRICE	Greatest Number of Teeth that can be put in a Saw	Size of Mandrel Holes	Number of Bits given with each Saw	Extra Shanks given with each Saw
16	11 to 6 Gauge inclusive	12	\$20 00	12	1 1/8	100	2	46	11 to 6 Gauge inclusive	32	\$100 00	38	2	400	4
18		12	23 00	14	1 1/4	100	2	48		32	110 00	38	2	400	4
20		12	26 00	16	1 3/8	100	2	50		36	122 00	40	2	400	4
22		12	29 00	16	1 3/8	200	2	52		36	140 00	42	2	500	5
24		12	32 00	18	1 3/8	200	2	54		40	160 00	44	2	500	5
26		14	36 00	20	1 3/8	200	2	56		40	180 00	44	2	500	5
28		14	40 00	22	1 1/2	200	2	58		44	210 00	46	2	500	5
30		16	45 00	24	1 1/2	200	2	60		44	240 00	48	2	500	5
32		16	50 00	26	1 5/8	300	3	62		46	275 00	50	2	500	5
34		20	55 00	26	1 5/8	300	3	64		48	310 00	52	2	500	5
36	24 to 10 Gauge inclusive	20	60 00	28	1 5/8	300	3	66	24 to 10 Gauge inclusive	48	350 00	54	2	500	5
38		24	65 00	30	1 5/8	300	3	68		52	400 00	58	2	500	5
40		24	70 00	32	2	300	3	70		54	450 00	60	2	500	5
42		28	80 00	34	2	400	4	72		56	500 00	62	2	500	5
44		28	90 00	36	2	400	4								

PRICES OF OUR CHISEL-TOOTH CIRCULAR SAWS WITH No. 4 TEETH

Diameter in inches	Gauge at Rim	Number of Teeth in Saw	PRICE	Greatest Number of Teeth that can be put in a Saw	Size of Mandrel Holes	Number of Bits given with each Saw	Extra Shanks given with each Saw	Diameter in inches	Gauge at Rim	Number of Teeth in Saw	PRICE	Greatest Number of Teeth that can be put in a Saw	Size of Mandrel Holes	Number of Bits given with each Saw	Extra Shanks given with each Saw
22	9 to 5 Gauge inclusive	12	\$29 00	12	1 1/8	200	2	48	9 to 5 Gauge inclusive	26	\$110 00	32	2	400	4
24		12	32 00	14	1 3/8	200	2	50		28	122 00	34	2	400	4
26		12	36 00	14	1 3/8	200	2	52		28	140 00	36	2	500	5
28		14	40 00	16	1 1/2	200	2	54		32	160 00	38	2	500	5
30		14	45 00	18	1 1/2	200	2	56		32	180 00	38	2	500	5
32		16	50 00	20	1 5/8	300	3	58		36	210 00	40	2	500	5
34		16	55 00	22	1 5/8	300	3	60		36	240 00	42	2	500	5
36		18	60 00	22	1 5/8	300	3	62		38	275 00	44	2	500	5
38		20	65 00	24	1 5/8	300	3	64		38	310 00	46	2	500	5
40		20	70 00	26	2	300	3	66		40	350 00	48	2	500	5
42	24 to 10 Gauge inclusive	24	80 00	28	2	400	4	68	24 to 10 Gauge inclusive	40	400 00	50	2	500	5
44		24	90 00	30	2	400	4	70		44	450 00	52	2	500	5
46		26	100 00	30	2	400	4	72		44	500 00	54	2	500	5

DIRECTIONS FOR RUNNING THE CHISEL-TOOTH SAWS

First, the saw should be placed on the mandrel where it is to be run, observing carefully our instructions for hanging circular saws.

Before commencing to insert the teeth, provide a cup of oil, which, together with the box of teeth, place conveniently near where you will stand at the back of saw. Take the wrench in the right hand, place the pins in the holes in the shank, and turn it so that the hook projects sufficiently to receive the bit, pick up a tooth with the left hand and dip its grooved segment into the oil, then place it in position on the hook and hold firmly and evenly with the sides of the hook, at the same time pressing the lever downward until the shoulders on the tooth and socket meet. Do not use undue force, but let the stops meet lightly.

The chisel teeth are exact in width, and the spread uniformly good, and make smoother lumber than is made by the old style saws, even when in the hands of first-class sawyers; but, if extra nice work is desired, try a gauge on the side of each tooth, and, if any are found to project a trifle too far, reduce them with a file, being careful to reserve the same relief of the corner. No flat surface should be allowed on the sides of the teeth, they must be relieved from the very edge, then the saw will run straight and with least possible expenditure of power and make smooth lumber.

The past five years' use of the chisel bits has proven, conclusively, that, in order to get the most and best use of them, when a set has been inserted and properly adjusted, they should remain until they are worn out, and, as often as may be required, edge them by applying a file to their face or under side. After being sharpened several times they should be relieved on the sides, so as to keep their corners sharp. Should a shank become strained or compressed by reason of the saw having been run on iron, so that it will not hold the bit firmly, lay it on an anvil and strike it with a hammer on the side near the inner circle, opposite the hole in the bottom of the slit in the jaw, until it is expanded sufficiently to hold the bit.

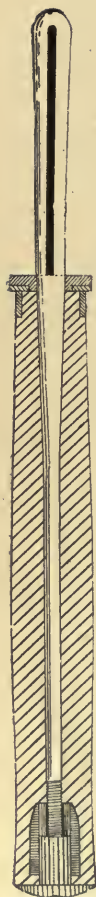
THE CLAIMS OF THE CHISEL-TOOTH SAW

They require less power, make better lumber, and produce it at less cost than any other saw. The saws are furnished ready to put on the mandrel, and any person of ordinary ability can insert the bits when required. The round socket, the only one in which a tooth was ever fixed firmly in a saw blade without rivets or keys, has now received its finishing accompaniment in the rotary locking shank, by which the cutting bit is seized, carried it to the socket, and held it in a positive position. This device is strong and simple in construction, so reliable and expeditious that at each insertion of a new set our Chisel-Tooth Saw is in a much better condition than it is possible for an expert sawyer to put a solid saw by dressing it in any of the ordinary ways. The chisel bits are forged into such perfect shape that they do not break when cutting knots, and cut iron and stone at one-twentieth the cost and damage occasioned to a solid tooth saw. A large circular, it is true, in cutting a nail or stone, seldom dulls more than half a dozen teeth, but it must be cut down, rounded, and, all the teeth swaged out and filed to an edge, so that it would not be safe to estimate the reduction of the saw, expense of files, labor, and loss of time at less than five dollars, while it would cost the chisel bit saw, at the most, only half a dozen bits, worth say thirty cents. The admirable mechanical construction of the Chisel-Tooth Saw is manifest in the great strength and durability of its parts. The cutting bits, being short, are exceeding stiff, and the matching of the circular back with the plate precludes the possibility of any lateral or rocking movement. They will run a long time before sharpening is necessary, and may be pointed up ten or twenty times. Each tooth in the saw will cut from one to three thousand feet of lumber, depending upon the quality of the logs and the feed carried.

THE E. R. BURNS CROSS-CUT SAW HANDLE

The strongest, most durable and easily adjusted handle ever invented.

BURNS, per pair - - - - - 50 cents



PATENTED
JUNE 26TH,
1893

THE object of this invention is to make a Cross-cut Saw Handle strongest at the point where the strain is the greatest, and it consists essentially of a spindle of a Cross-cut Handle, thickest at the point nearest to the saw, and extending through the wooden portion with a nut screwed on to the end of the spindle, and butting against the end of a wooden handle, substantially as shown in the cut. The spindle is fitted on to the saw in the usual manner. Instead of being connected to the wooden handle near its bottom, the spindle is extended nearly through the handle, where it is screwed into a nut. In other handles it is customary to put the nut near the bottom of the handle, making the weakest point in the handle the point where the greatest strain is exerted; whereas by my device that point is made strongest, and the joint is placed at a point where practically no strain is directed against the handle.

In order to hold the nut from revolving while the spindle is being screwed into it, I form a feather or feathers on it, which feather or feathers penetrate the wood in the handle as the nut is drawn into the hole made in the handle. As the feather or feathers are thin, and penetrate the wood at a point where the handle is thick, there will be no fear of the feather splitting the wood. It will be noticed that the nut has a hole through it, so that in case the saw is narrower than usual, the said spindle may be screwed through the nut if necessary.



E. R. BURNS.

ASK YOUR HARDWARE MERCHANT FOR IT.

Manufactured only by E. R. BURNS SAW CO.

THE PINE CONE

FOUR AND ONE-HALF GAUGES THINNER ON BACK THAN TEETH

Easiest Running Saw

Fastest Cutting Saw



PRICE, \$1.00 PER FOOT

This Saw is made from a very high grade of steel, more costly than that used by any other manufacturer of Cross-cut Saws, and is ground a straight taper of $4\frac{1}{2}$ gauges from teeth to back. Fastest and easiest running Saw made; it excels them all.

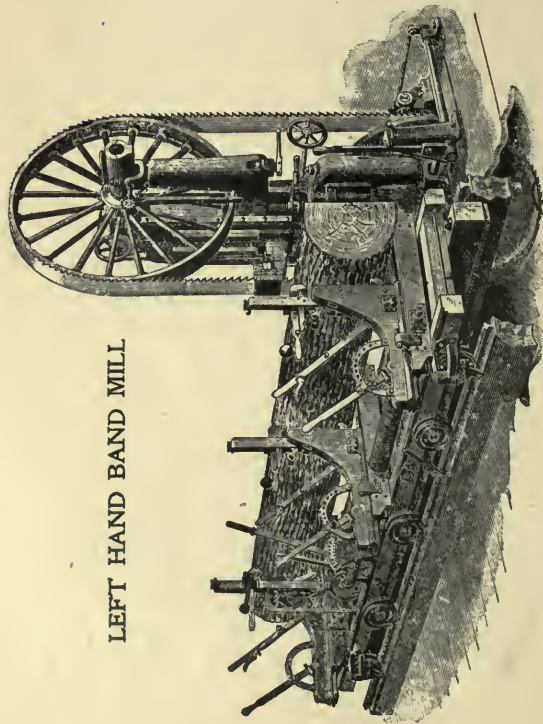
DIRECTIONS FOR FILING AND SETTING

For hardwood, file the rakers a little less than the thickness of a five cent piece. For soft wood, file the rakers the thickness of a five cent piece. Use small set as they are ground a very even taper of $4\frac{1}{2}$ gauges.

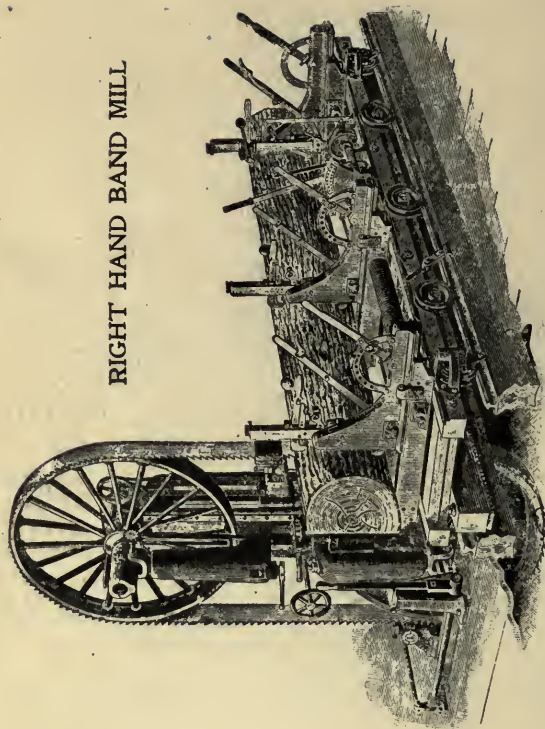
E. R. BURNS BAND SAWS

All "E. R. BURNS" Band Saws and Band Re-Saws are made of our **NEW PROCESS STEEL**, hardened and tempered by a Special Method that is unequalled and exclusively our own.

LEFT HAND BAND MILL

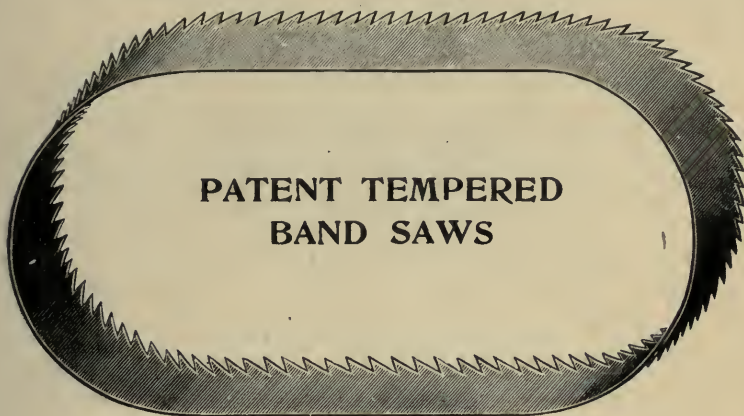


RIGHT HAND BAND MILL



WHEN ORDERING SAWS GIVE FULL PARTICULARS PER SPECIFICATIONS.

STYLE AND QUANTITY	{ LOG BAND BAND RE-SAWS	WIDTH	DEPTH OF TOOTH	RIGHT OR LEFT HAND
		GAUGE	SHAPE OF TOOTH	JOINED
		SPACE OF TOOTH	STRAIGHT OR CROWNING BACK	SET AND SHARPENED
		LENGTH		



PATENT TEMPERED BAND SAWS

NARROW BANDS

Every saw is guaranteed to the satisfaction of the purchaser. Customers can do their own brazing, if they so choose. Prices are for unbrazed saws. Brazing extra, as per list. Give extreme length in ordering, and be particular to say whether you want the saws brazed or unbrazed.

Price Per Foot in Length

$\frac{1}{8}$ in.	10c.	$\frac{1}{4}$ in.	14c.	1 in.	22c.
3-16 "	10½c.	"	16c.	1½ "	26c.
½ "	11c.	"	18c.	1¾ "	30c.
¾ "	12c.	"	20c.	2 "	40c.
Brazing, each.....	25c.	Brazing, each.....	40c.	Brazing, each.....	60c.

WIDE BAND SAWS

JOINED AND FITTED

Width.	Usual Gauge.	Price per ft.	Width.	Usual Gauge.	Price per ft.
2 in.	19 to 21	\$ 50	7 in.	15 to 17	2 15
2½ "	17 to 20	65	8 "	14 to 16	2 50
3 "	17 to 20	80	9 "	14 to 16	3 00
3½ "	17 to 19	1 00	10 "	14 to 16	3 50
4 "	16 to 19	1 20	11 "	14 to 16	4 20
4½ "	16 to 19	1 35	12 "	14 to 16	5 00
5 "	16 to 19	1 50	13 "	13 to 15	6 00
5½ "	16 to 18	1 65	14 "	13 to 15	7 00
6 "	15 to 18	\$1 80			

In ordering Band Saws, state length, width, gauge, space of teeth; also whether right or left hand. Blanks furnished at same prices—but not warranted.

BAND SAW SUPPLIES

Silver Solder, per oz.....	\$2 00	Filing Clamps, each	\$ 4 00
5-in. 3-Square Files, per doz.....	2 75	Brazing "	3 50
6 " " " "	3 00	Brazing Tongs, each.....	1 50
7 " " " "	3 50	Band Saw Sets, "	12 00
		Wheel and Board, each.....	10 00

These Files are made specially for filing the Band Saws, so as to preserve the round corner of the toothing.

Suggestions on the Use of Band Saws

Keep the correct pitch upon the tooth, to give the saw a proper lead into the cut. This will take the friction entirely off the stay pin. By the use of a round edge file, the saw will be kept from galling and breaking. To save trouble and expense, a proper pitch must be held for each kind of work and wood.

Band saws of any width, length and tooth, set, sharpened and joined complete.



LIST PRICE PER FOOT, ALL WIDTHS, ADVANCE OF 10% ON
RE-SAW AND LOG BAND SAW LISTS.

From the inception of the band saw we have advocated as the most perfectly working saw, parallel edges and straight back; we have always put up our saws this way when left to our judgment. A great many orders call for crowning back; we have made them as much as four inches deflecting from a line. Without discussing the question we would call attention to our justification, in the working of the double-edge band saw, which must be put up in perfect line.

A feature of band-saws of our manufacture is that the edges are perfectly parallel and are guaranteed to give unqualified satisfaction if properly used.

BAND-SAW BLADES

WARRANTY

FOR LOG AND RE-SAW.

*We WARRANT all Band-Saw Blades when leaving our hands
To be made from steel best adapted to their special work;
To be THE BEST for quality, durability and workmanship;
To be practically ready for use;
To be free from all defects, visible or invisible;
To be replaced if found defective in the above particulars.*

We DO NOT WARRANT them against cracking in use. All users of band saws know that numerous contingencies arise during work, which may cause a blade to crack, against which the quality of the saw, the skill of the filer, or the competency of the sawyer are of no avail, and for which the manufacturer cannot be held responsible.

We do not deny that there are saws made which crack by reason of poor material or faulty manufacture—as too hard, or too soft, irregular temper, unequal tension or poor workmanship generally. Such a saw from OUR HANDS would be condemned by OUR OWN warranty.

We do not send saws on trial, and require all goods to be paid for as billed, but pledge ourselves that we will not knowingly allow a defective saw of our make to remain out of our possession, and to this end

We shall esteem it a mark of favor to be notified at once should there be any cause of complaint.

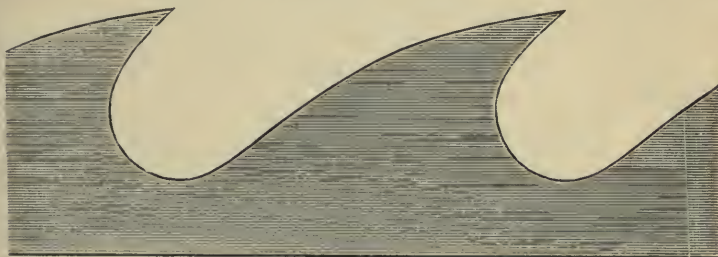
BAND SAW TEETH

Immediately following are shown full-size illustrations of teeth for band saws as made by us and used in many of the best mills in the different sections of this continent and abroad.

These shapes are not given as covering the universal demand, but as a convenience to many of our customers, enabling them to order shapes of teeth by number.

SHAPES, SIZES AND SPACES FOR BAND SAW TEETH

The widest space here shown is 2 inch. We have frequent calls for $2\frac{1}{2}$ inch space.



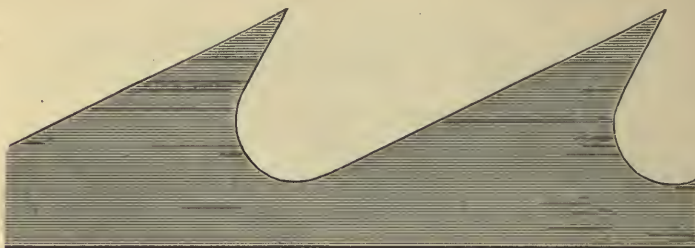
No. 1

2 inch space, $\frac{7}{8}$ inch deep, band saws to 14 inches wide, 14 gauge or thicker.
Used in yellow pine, white pine, redwood and fir.



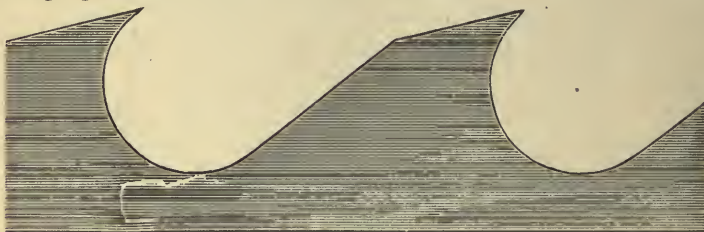
No. 2

2 inch space, $\frac{5}{8}$ inch deep, band saws to 12 inches wide, 14 gauge or thinner.
Used in all the woods named for No. 1—also in cypress and hard woods.



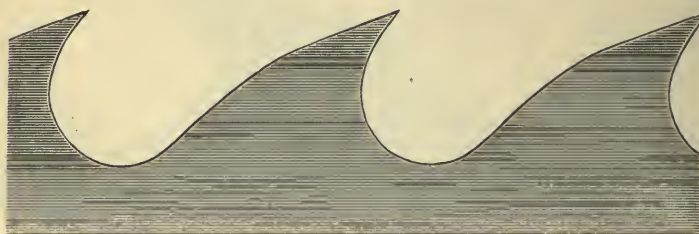
No. 3

2 inch space, $\frac{7}{8}$ inch deep, straight back, band saws 12 inches to 14 inches wide, 14 gauge full or thicker. Used in soft woods.



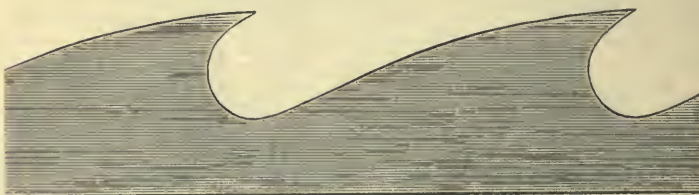
No. 4

2 inch space, $\frac{7}{8}$ inch deep, band saws 12 inches to 14 inches wide. Used in soft or hard woods.



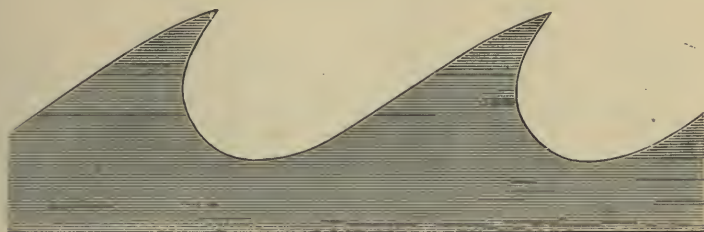
No. 4A

1 $\frac{1}{2}$ inch space, $\frac{3}{4}$ inch deep, band saws, 10 inches to 12 inches wide.



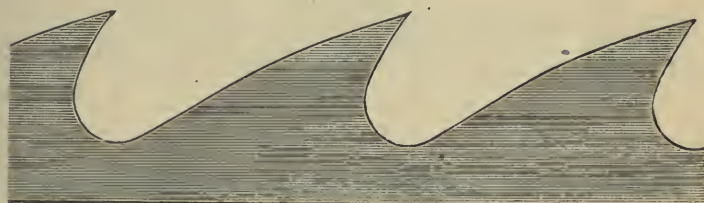
No. 5

2 inch space, $\frac{1}{2}$ inch deep, band saws, 16 inch and 17 inch gauge, 9 inches and 10 inches wide. Used with light swage for all kinds of foreign hard-woods. Illustration shows extreme hook, which, in use, is varied according to density of the grain. This tooth, with hook as shown, is good for saw-mill band re-saws.



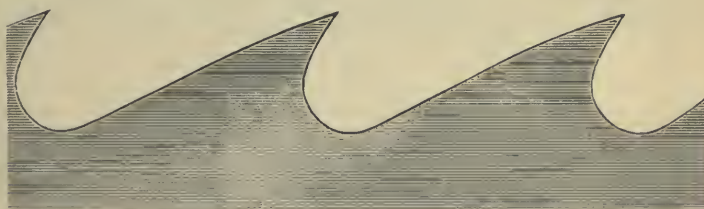
No. 6

$1\frac{3}{4}$ inch space, $\frac{3}{4}$ inch deep.
Our regular style tooth for all soft woods.



No. 7

$1\frac{1}{2}$ inch space, $11/16$ inch deep, for band saws thinner than 14 gauge. Our regular style tooth for soft woods.



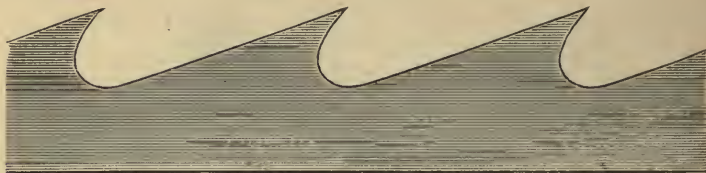
No. 8

$1\frac{1}{2}$ inch to $1\frac{3}{4}$ inch space, $\frac{5}{8}$ inch deep.
Our regular style tooth for hard woods.



No. 9

$1\frac{1}{4}$ inch space, $\frac{1}{2}$ inch deep, for band saws 14 gauge and thinner.
Our regular style tooth for hard and soft woods.
For soft woods only, this tooth may be $\frac{5}{8}$ inch deep.



No. 10

$1\frac{1}{4}$ inch space, $\frac{3}{8}$ inch deep, straight back.

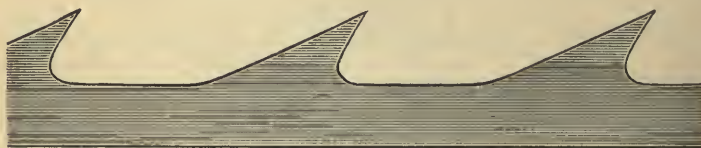
One of our regular style band re-saw teeth.



No. 11

$1\frac{1}{4}$ inch space, $\frac{5}{16}$ inch deep, flat bottom.

Our regular style tooth for band re-saws, 22 to 26 gauge. In saws thicker than 22 gauge we make this tooth $\frac{3}{8}$ inch deep.



No. 12

$1\frac{1}{2}$ inch space, $\frac{3}{8}$ inch deep, flat bottom.

Our regular style flat bottom tooth for band re-saws 18 to 21 gauge.



PRESS OF THE
HUNTER, ROSE CO., LIMITED,
TORONTO.