

N. F. Stone,

2. Sheets, Sheet 1.

Saw Gummer.

No. 112,979.

Patented Mar. 21, 1871.

FIG. 2
Bottom view

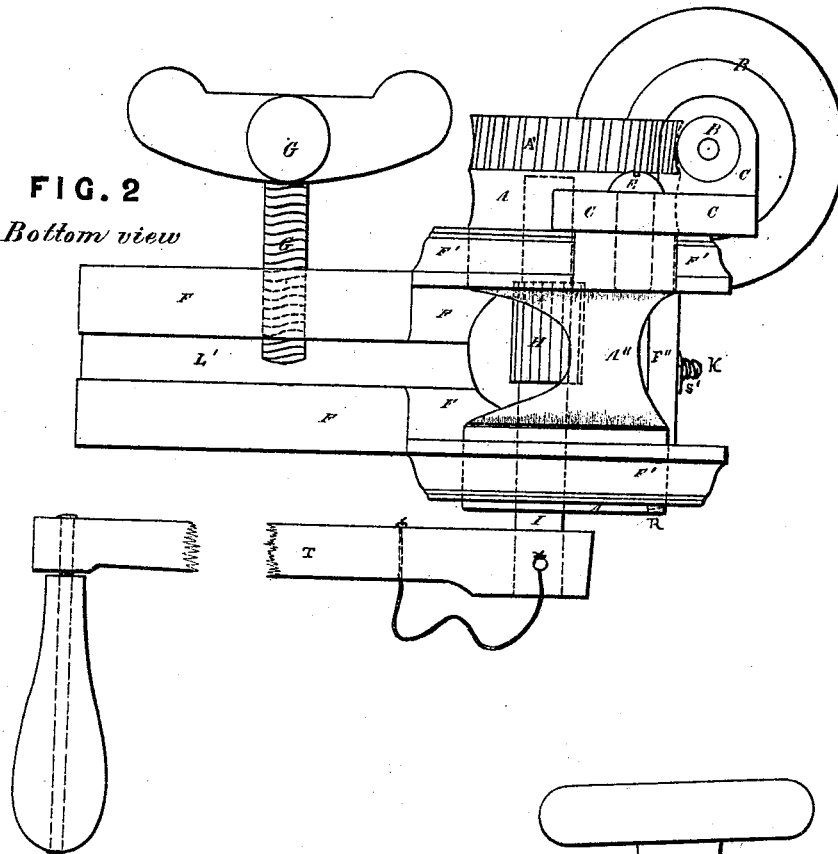
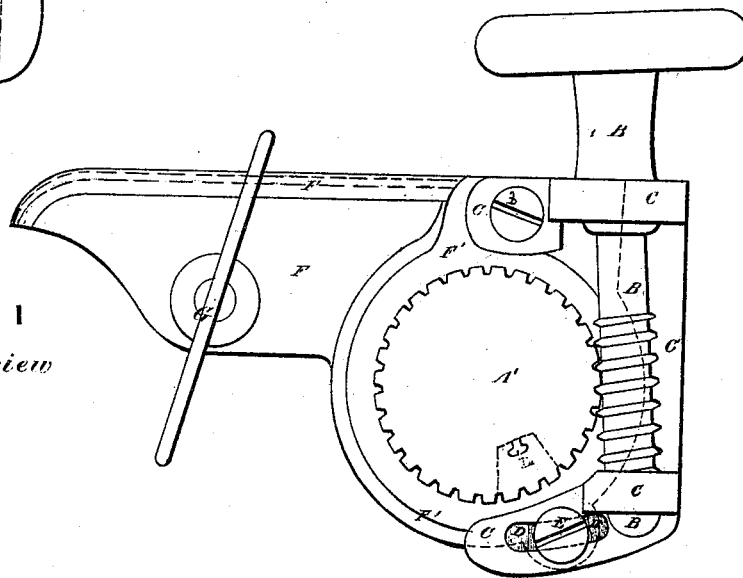


FIG. 1
Side view



Witnesses
L. L. Bond
O. W. Bond

Nathaniel F. Stone
Inventor.

N. F. Stone,

2. Sheets, Sheet 2.

Saw Gummer.

No. 112,979.

Patented Mar. 21, 1871.

FIG. 5

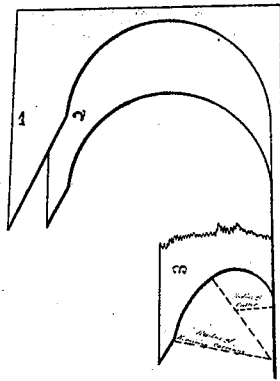


FIG. 4

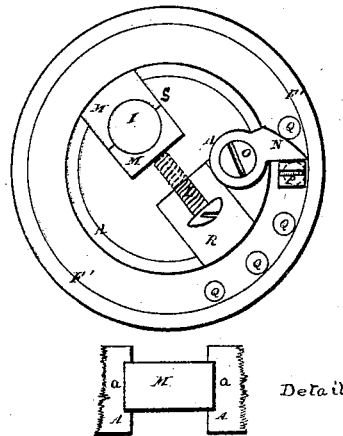
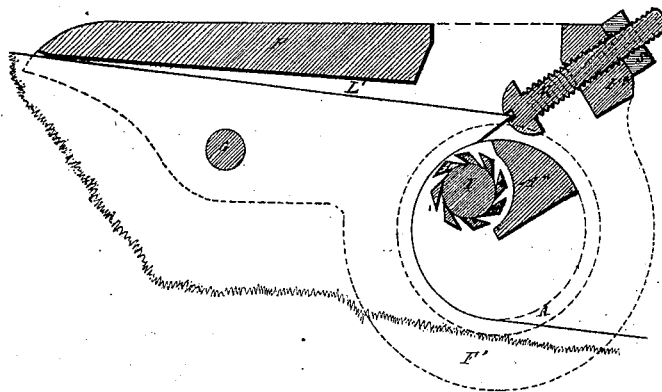


FIG. 3



Witnesses
L. L. Bond
W. Bond

Nathaniel F. Stone
Inventor

United States Patent Office.

NATHANIEL F. STONE, DECEASED, (AMANDA STONE AND BENJAMIN HOLBROOK, ADMINISTRATORS,) OF CHICAGO, ILLINOIS.

Letters Patent No. 112,979, dated March 21, 1871; antedated March 14, 1871.

IMPROVEMENT IN SAW-GUMMERS.

The Schedule referred to in these Letters Patent and making part of the same.

I, NATHANIEL F. STONE, of the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Saw-Gummers, of which the following is a full description, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 represents a side view of the gummer;

Figure 2, a side view;

Figure 3, a vertical longitudinal section with a saw-tooth inserted;

Figure 4, a detached view, showing the journal-bearings of the cutter; and

Figure 5, views of saw-teeth, showing the effect of the set-screw.

Like letters refer to the same parts in all of the figures.

This invention relates to that class of saw-gummers which is used with rotary cutters; and

Its nature consists in the application of a set-screw, so that the teeth of the saw will be cut the same distance from the points, however irregular the spaces between the teeth may be; in the application of a rotating shaft, carrying with it the rotary cutter; and in the application of a stop to limit and determine the cut for each tooth of the saw.

To enable others skilled in the art to make and use my invention, I will now describe its construction and operation.

The frame or case F is made of cast-iron, usually cast in a single piece, and of the form and dimensions shown, the drawing being full size.

In the curved portion F' of the frame I place the shaft A, which is cut away in the middle, as shown at A', figs. 2 and 3, and has its bearings in the posts F.

At the outer end of this shaft I attach a toothed or cog-wheel, A', which is operated by the worm-thread C' on the shaft B.

The wheel A' is usually cast with the shaft, but it may be made separate and be attached by screws or bolts.

At the side of this shaft I cut in square recesses, as shown at S, fig. 4, which recesses are provided with grooves or slots, as shown at a in the detail, into which the journal-bearings or boxes M are placed.

The outer one has its outer surface curved so as to fit the bearing of the shaft A.

The two bearings of the shaft A are similarly constructed, and the boxes are adjusted by means of the screws L, one of which is inserted in the end of the shaft, as shown at R, fig. 4, and the other in a hole in the neck of the shaft, as indicated by the dotted lines in fig. 1.

In these bearings I place the cutter-shaft I, which is provided with the cutters H. The shaft I is provided with elongated bearings, so that the cutter can

be moved back and forth so as to utilize its entire length; otherwise it would cut continually at one point and soon wear out.

The inner end projects out sufficiently far to afford a proper attachment for a crank, T.

At the inner end of the shaft A I place a movable stop N, which limits the movement of that shaft, and makes the cutting between each tooth of a saw of a uniform depth, the depth being regulated by the pin P, which is placed in such one of the holes Q as may be desired, or according to the size of the saw-teeth.

The stop N is so made and attached that it can be folded into the opening R for the purpose of permitting the withdrawal of the shaft A for the purpose of inserting a new cutter, or the taking out of a cutter for the purpose of sharpening it.

In order to facilitate this withdrawal I hang the worm-shaft B in a movable frame, C.

This frame is furnished with suitable bearings for the shaft B, and is attached to the frame F by the screw B, which acts also as a pivot, and by the screw E, which passes through a slot, D.

By loosening the screw E the frame C can be thrown back so as to disengage the worm and wheel, when, by folding in the stop N, the shaft A can be drawn out from this side of the frame and the cutter-shaft I taken out.

When the shaft is replaced the frame C is turned so as to engage the worm with the wheel, which, by reason of the concave form of the face of the cogs, operates a check to prevent its falling or working out when the screw E is tightened.

At or near the middle of the cross-bar F'' of the frame I insert a set-screw, K, which is or may be provided with a lock-nut S'. This screw is provided with a notch at the inner end to receive the point of the saw-tooth, so as to prevent its being bent or dulled.

When this set or gauge-screw is set, as shown at fig. 3, the tooth will be cut as shown at 2, in fig. 5; and when it is run up against the bar F'', the tooth will be cut as shown at 1.

The saw-plate is placed in the opening or groove L', and the machine is secured to it by the thumb-screw G.

In operation, when gumming small teeth, when the opening between them is about the size of the cutter H, the pin P is set in the upper hole and the gauge-screw K run down until it comes nearly in contact with the shaft A. The gummer is then placed in position and the crank T turned without revolving the shaft A.

When larger teeth are to be gummed, the gauge-screw is set so as to give the desired point, and the pin P placed in one of the lower holes.

The machine is then placed and secured in position, and the crank is taken in one hand and the shaft B in

the other, and the shaft *a* revolved until the stop *N* operates.

The shaft *A* is then turned back to its original position, when the gummer is taken off and placed on another tooth and the operation repeated. By this means a cut on a circle two or more inches in diameter can be made with a half-inch cutter.

It is obvious that the stop *N* can be used alone to hold the shaft *A* in place, and the worm be so arranged by changing the size of the wheel or the angle of the cogs that this part of the machine will not interfere with the withdrawal of the shaft.

Having thus fully described my improved saw-gummer,

What I claim as new, and desire to secure by Letters Patent, is—

1. The revolving shaft *A*, in combination with the rotary cutter, substantially as described.

2. The stop *N*, in combination with the shaft *A*, frame *F*, and pin *P*, when constructed and operating substantially as set forth.

3. The combination and arrangement of the shafts *A* and *I* with the wheel *A'* and the worm *B*, substantially as described.

4. The pivoted frame *C*, when so constructed and attached that the worm can be disengaged or adjusted, substantially as specified.

5. The combination and arrangement of the shaft *A*, provided with the adjustable bearings *M* for shaft *I*, cutter *H*, wheel *A'*, worm *B*, gauge-screw *K*, and stop *N* with the frames *F* and *C*, substantially as and for the purposes described.

NATHANIEL F. STONE.

Witnesses:

L. L. BOND,

G. W. BOND.