2 Sheets--Sheet 1.

M. O. SMITH.

Saw-Gummer.

No. 166,313. Patented Aug. 3, 1875.

FIG. 1

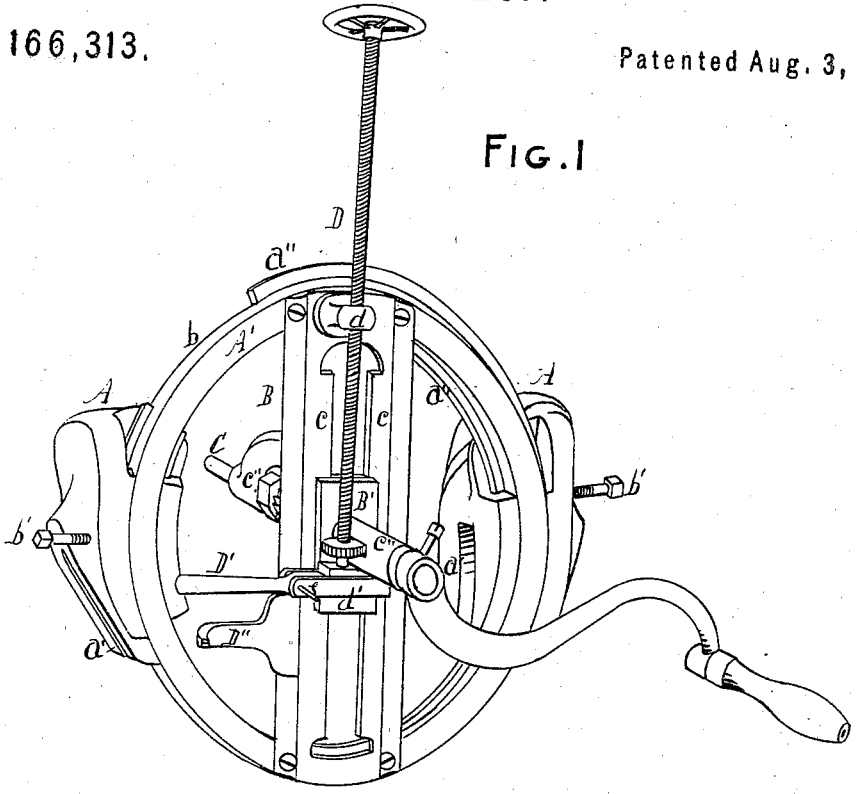
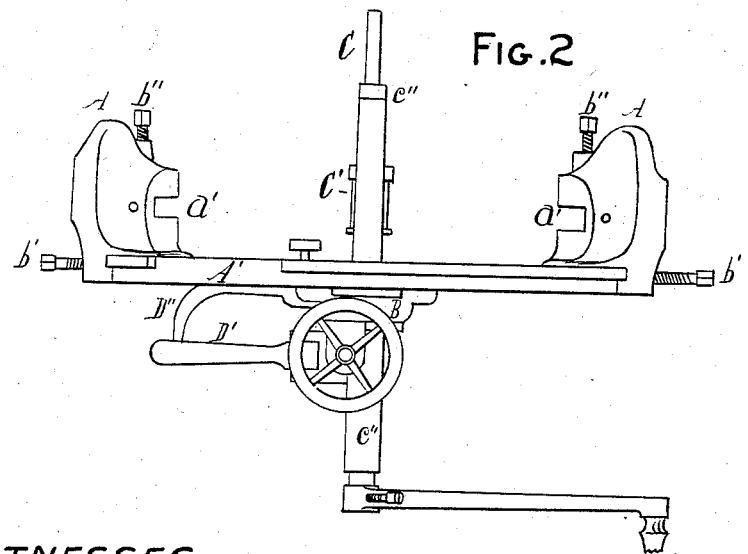


FIG. 2



WITNESSES.

R. D. Ingersoll

T. Z. Ingersoll.

INVENTOR

Merwin O. Smith.

By Ingersoll & Curtis.

His Attys

2 Sheets--Sheet 2.

M. O. SMITH.

Saw-Gummer.

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FIG. 3

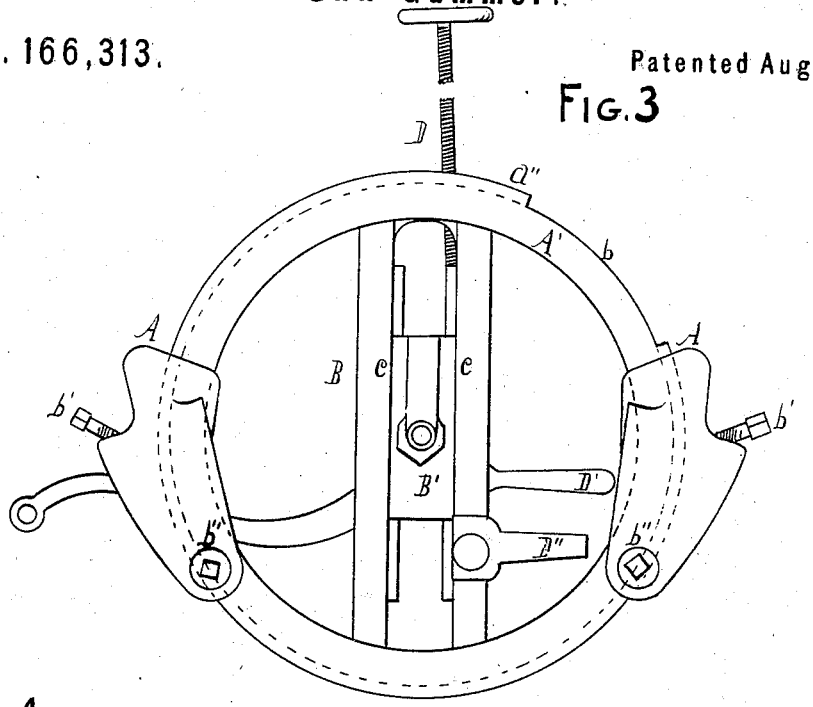

FIG. 4

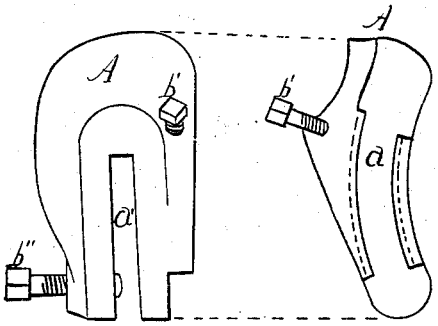

FIG. 5

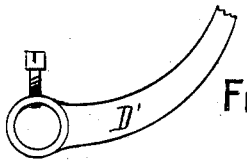

FIG. 6

FIG. 7

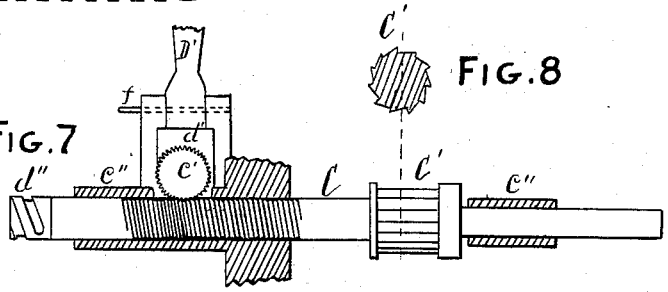

FIG. 8

WITNESSES

R. D. Ingersoll.

T. Z. Ingersoll.

INVENTOR

Merwin O Smith

By Ingersoll & Bray

His Attorneys

UNITED STATES PATENT OFFICE.

MARVIN O. SMITH, OF NEW BUFFALO, MICHIGAN, ASSIGNOR TO ISAAC O. SMITH, OF SAME PLACE.

IMPROVEMENT IN SAW-GUMMERS.

Specification forming part of Letters Patent No. **166,313**, dated August 3, 1875; application filed February 3, 1875.

To all whom it may concern:

Be it known that I, MARVIN O. SMITH, of New Buffalo, in the county of Berrien and State of Michigan, have invented a new and useful Improvement in Saw-Gumming Machines; and I hereby declare the following to be a full, clear, and exact description thereof, which will enable others skilled in the art to which my invention relates to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a perspective view; Fig. 2, top view; Fig. 3, rear view; Fig. 4, side view of jaw; Fig. 5, front view of jaw; Fig. 6, view of cam-lever; Fig. 7, section showing spiral pinion and thread on arbor; Fig. 8, section of cutter.

My invention relates to a saw-gumming machine; and consists in a ring adjustable in jaws, and provided with a carriage or slides, the same carrying a cross-head and cutter-arbor, and with self-feeding mechanism attached; and my invention further consists in a screw-thread on the end or ends of the cutter-arbor to receive the handle.

There are several saw-gumming machines in use at the present time; but all of them have some objectionable points. In some it takes too much time to place them in the right position for operation, and in all cases where the cutter is fed down by hand the feeding is irregular; consequently the liability of breaking the cutter is great, and some of them can only be adjusted to suit a particular kind of saw. In all saw-gumming machines where a rotary cutter is used great annoyance is occasioned by the unintentional backward movement of the handle, which, even in the slightest degree, will remove a portion of the edge of the cutter that comes in contact with the saw, all of which defects are overcome by my improvement in saw-gumming machines, and which will be more fully explained hereinafter.

In the accompanying drawing, A represents the jaws, each provided on one side with the dovetail groove *a*, and the lower portion of the jaw provided with the slot *a'*; A', ring provided with the flange *a''* upon its periphery, and a corresponding flange on the inner surface of the ring. A portion of the flanges are removed at *b*, this being necessary, as the jaws are placed on the ring at this point, and the flange *a''* enters the dovetail grooves *a*, and the jaws are then moved to any point desired on the ring, and secured in position by forcing the set-screws *b'* against the periphery of the ring. B is a carriage-way, provided with the slides *c*, and carrying the cross-head B'; C, arbor carrying the cutter C'. The arbor is secured in boxes *c''*, attached to and a part of the cross-head B'. The arbor is provided with screw-threads, that engage the spiral pinion *c'*. D, threaded feed-screw passing through a threaded hole in the lug *d*, and the bottom journaling in movable box *d'*. To the feed-screw D is secured the spiral pinion *c'*. D', cam-lever, pivoted at *f*, and when forced to the position represented in Fig. 1, the cam, operating upon the movable box *d*, forces the spiral pinion *c'* to engage the threads on the arbor C. When the tooth of the saw is cut to the desired depth the outer end of the lever D' comes in contact with the stop D'', which forces the cam-lever to a perpendicular position, and allows a spring behind the box to force the same out enough to allow the pinion *c'* to disengage the threads on the arbor. *d''*, screw-thread on the end of the arbor to receive the handle. The handle contains a corresponding thread or pin, and when placed in position to turn the arbor it can move it in but one direction, and that is in the direction for the cutter to cut; if it is moved in the opposite direction it will soon be disengaged from the arbor, and by so doing will save the cutter from being broken. The machine can be operated with one or more handles.

The operation of my machine is as follows: When a saw is to be gummed the machine is placed upon the same so that the saw occupies the slots *a'* in the jaws A. The set-screws *b''* are forced down upon the saw, so as to hold the machine firmly to the same. The ring A' is then adjusted in the jaws to the desired angle of the tooth to be cut. When this is accomplished the set-screws *b'* are forced down and secure the ring firmly in position. The cam-lever D' is then placed in the position represented in Fig. 1, which movement forces the

teeth on the spiral pinion c' to engage the screw-thread on the arbor C. The handle is then turned in the desired direction. The threads on the arbor engage the teeth on the pinion c', and cause the same to revolve, which movement revolves the feed-screw. The threads on the same, engaging the corresponding threads in the lug d, cause the same to force the cross-head in the direction required. The arbor containing the cutter, working in boxes secured to the cross-head, must necessarily carry the cutter against the saw. When the required depth is reached the cam-lever D′ comes in contact with the stop D″, which movement disengages the cam from the movable box d', and allows the same to move enough for the pinion c' to disengage the thread of the arbor. The feed-screw D is then turned backward with the hand, raising the cross-head to the required height for the next tooth. The set-screws b'' are then loosened, and the machine moved to the next tooth and placed in position, as before.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a saw-gumming machine, the combination of the ring A′, provided with the flanges a'', jaws A, having dovetail grooves a and slots a', carriage-way B, provided with slides c, and cross-head B′, arbor C, cutter C′, boxes c'', spiral pinion c', feed-screw D, cam-lever D′, movable box d, lug d', and stop D″, when the several parts are arranged to operate substantially as described, and for the purpose set forth.

2. In a saw-gumming machine, the combination of the rim A′, provided with the flanges a'', with the jaws A, having the dovetailed grooves a and slots a', said rim A′ being adapted for adjustment within the jaws A, to suit the different angles necessary in gumming saws, substantially as described and shown.

3. In a saw-gumming machine, the combination of the arbor C and cutter C′ with the spiral pinion c', secured near the base of the feed-screw D, substantially as and for the purpose described.

The above specification signed by me this 28th day of January, 1875.

MARVIN O. SMITH.

Witnesses:
J. M. SMITH,
A. D. HODGE.