

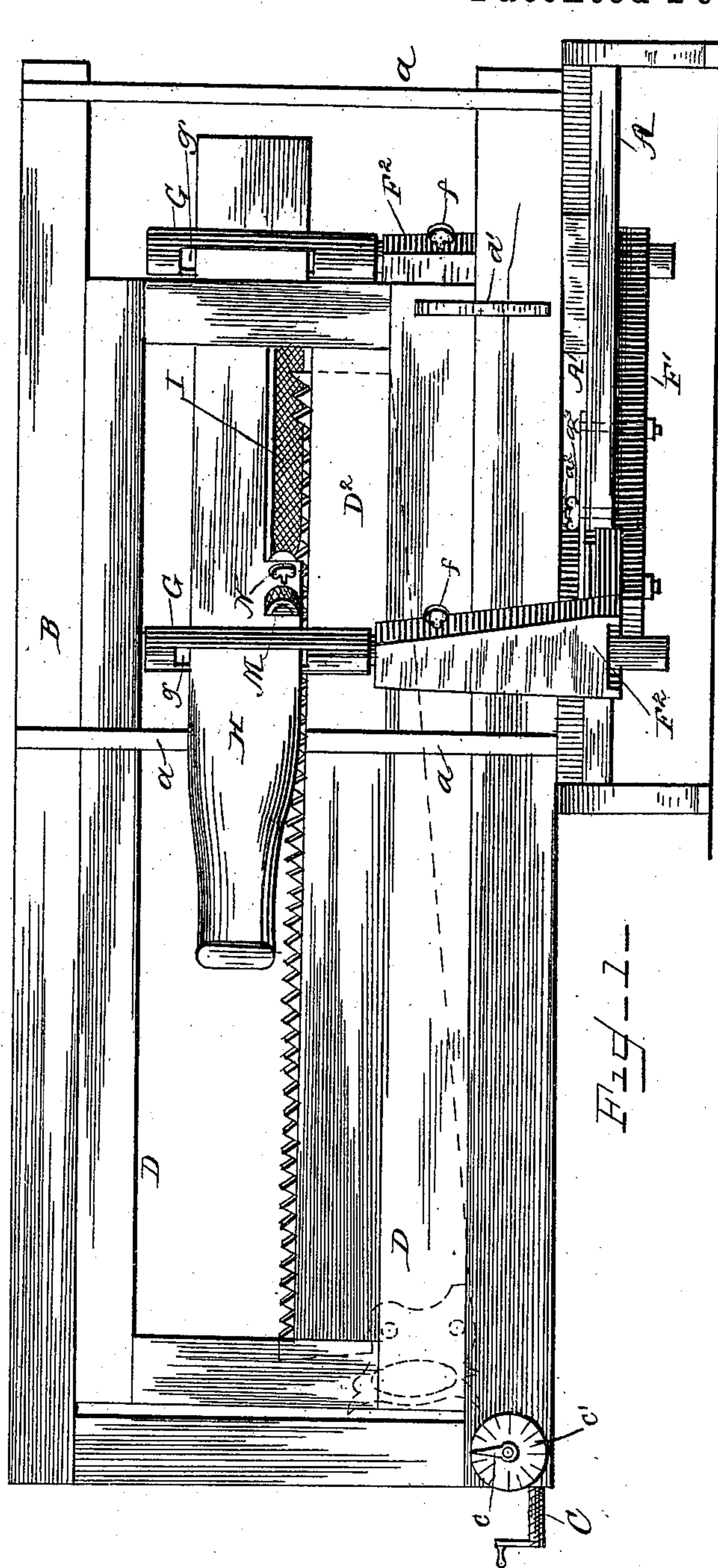
(No Model.)

3 Sheets—Sheet 1.

R. NOLEN, R. W. BISHOP & J. WALTEMEYER.  
SAW FILING MACHINE.

No. 357,091.

Patented Feb. 1, 1887.



Witnesses

A. G. Bishop.  
M. J. Storm.

Inventors

Robert Nolen, R. W. Bishop and  
By their Attorneys Joseph Waltemeyer

H. J. Ennis

(No Model.)

3 Sheets—Sheet 2.

R. NOLEN, R. W. BISHOP & J. WALTERMEYER.  
SAW FILING MACHINE.

No. 357,091.

Patented Feb. 1, 1887.

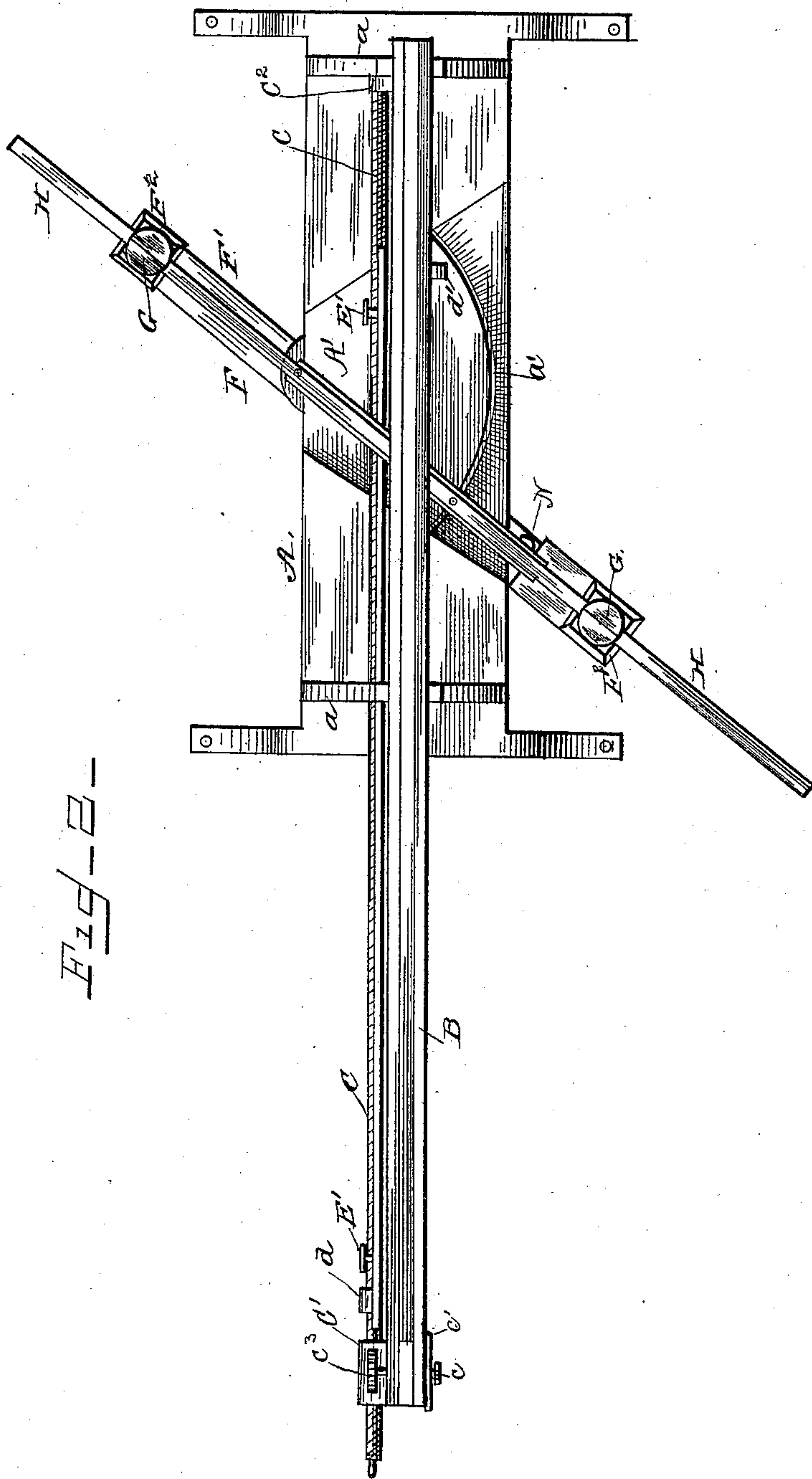


Fig. 2

Witnesses

A. G. Bishop.  
M. J. Storm.

Inventor  
Robert Nolen, R. W. Bishop and  
Joseph Waltermeyer  
By their Attorneys

N. J. Ennis

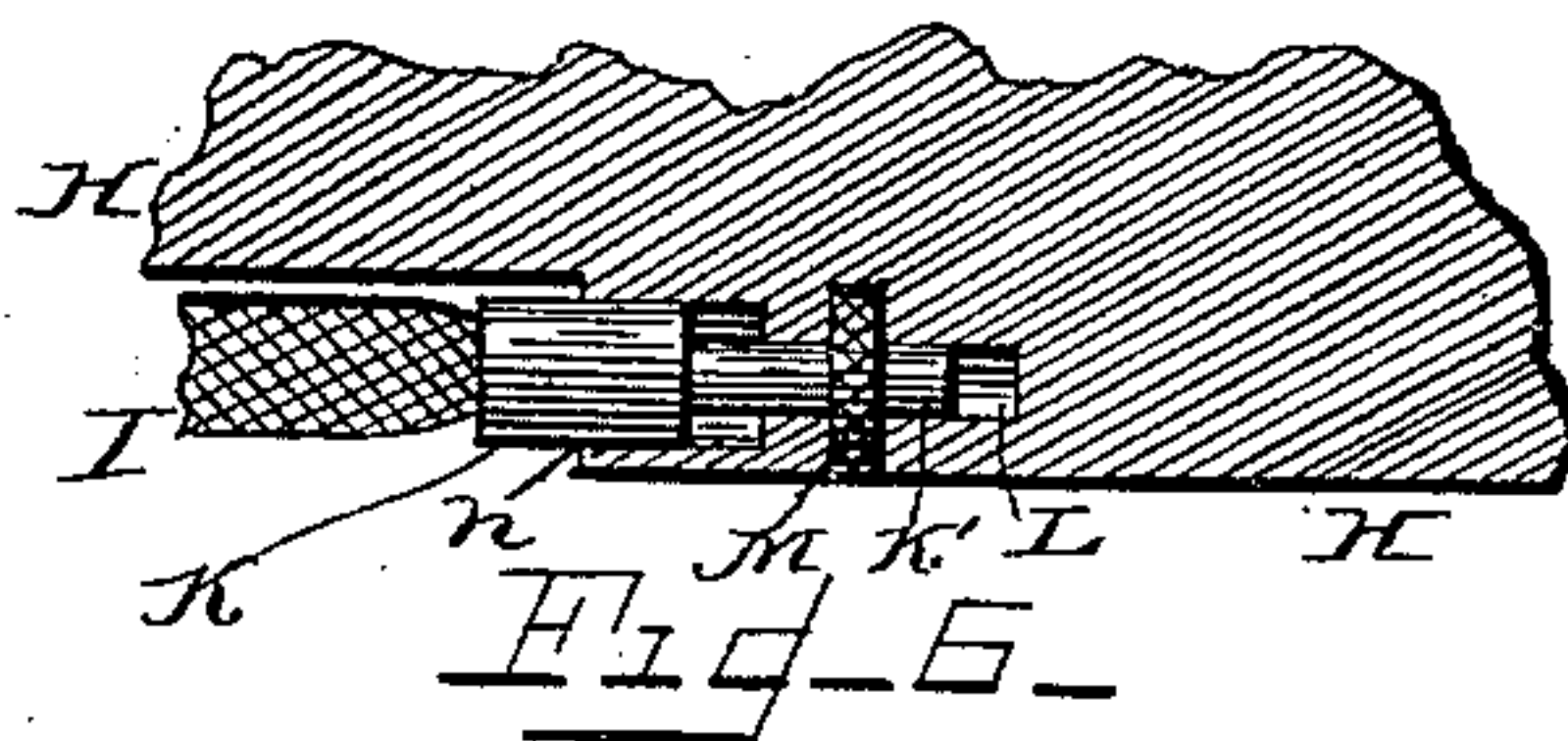
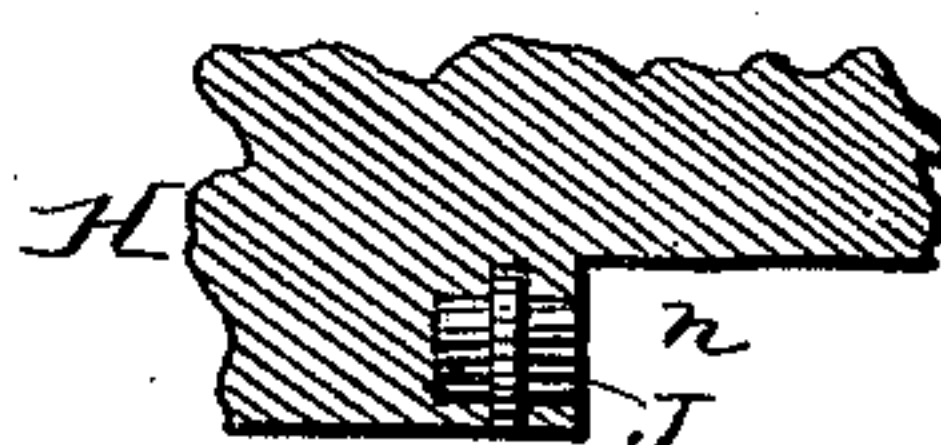
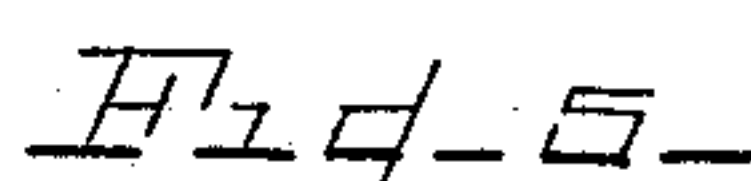
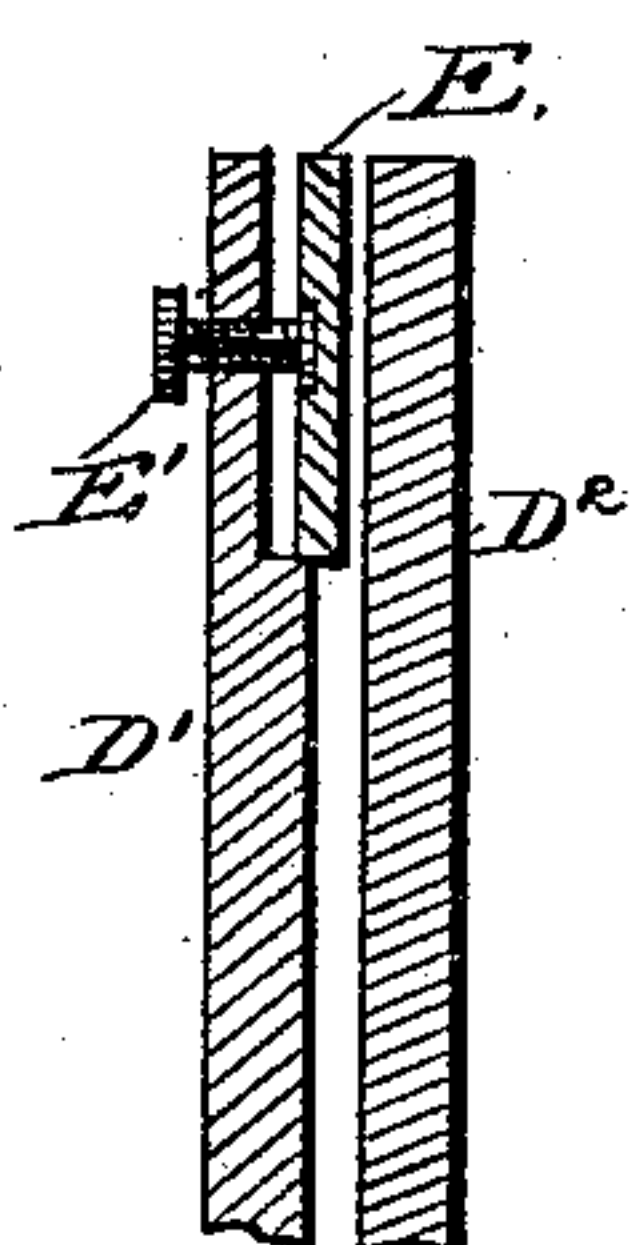
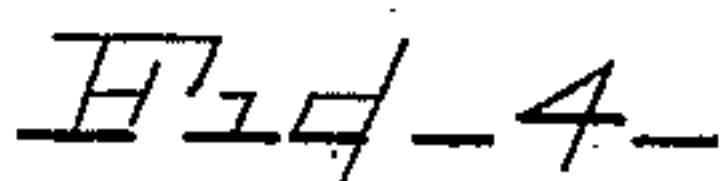
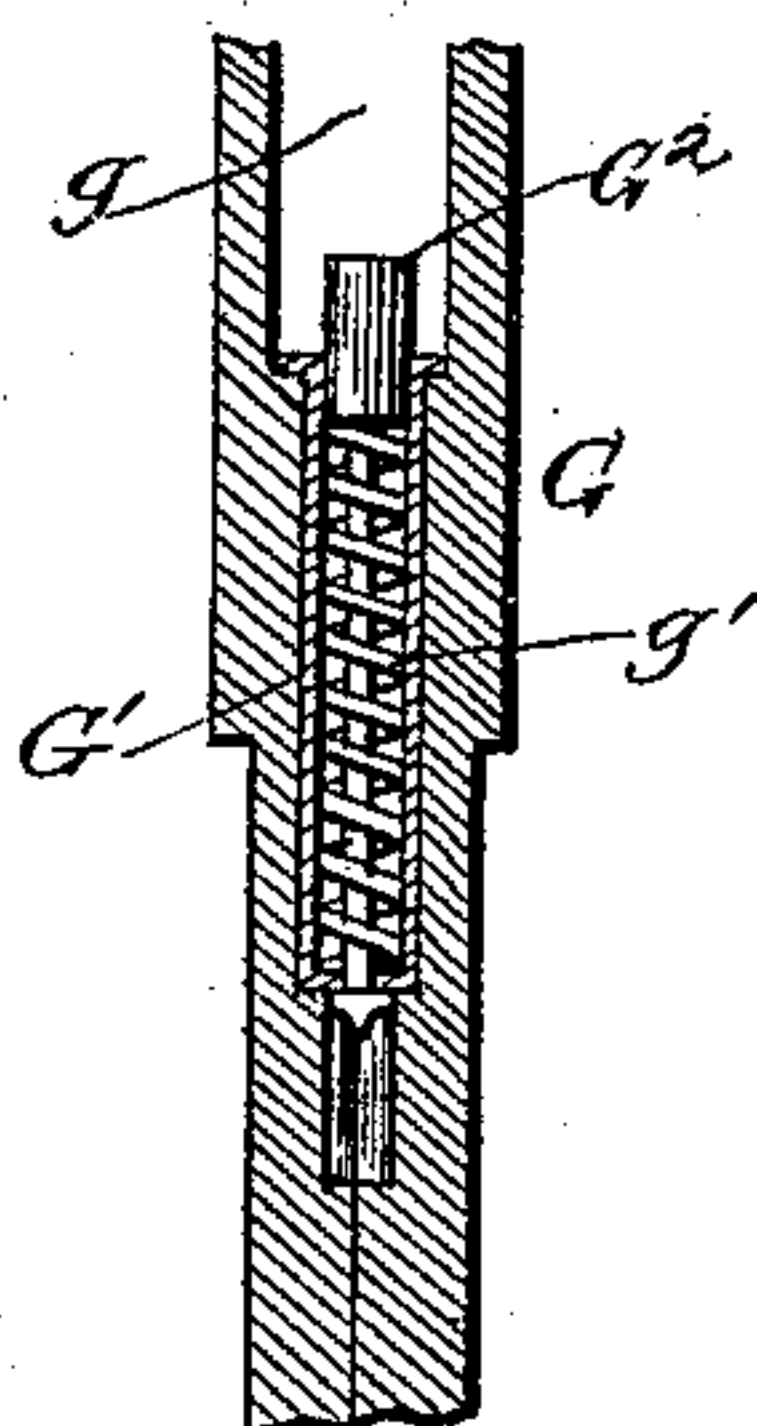
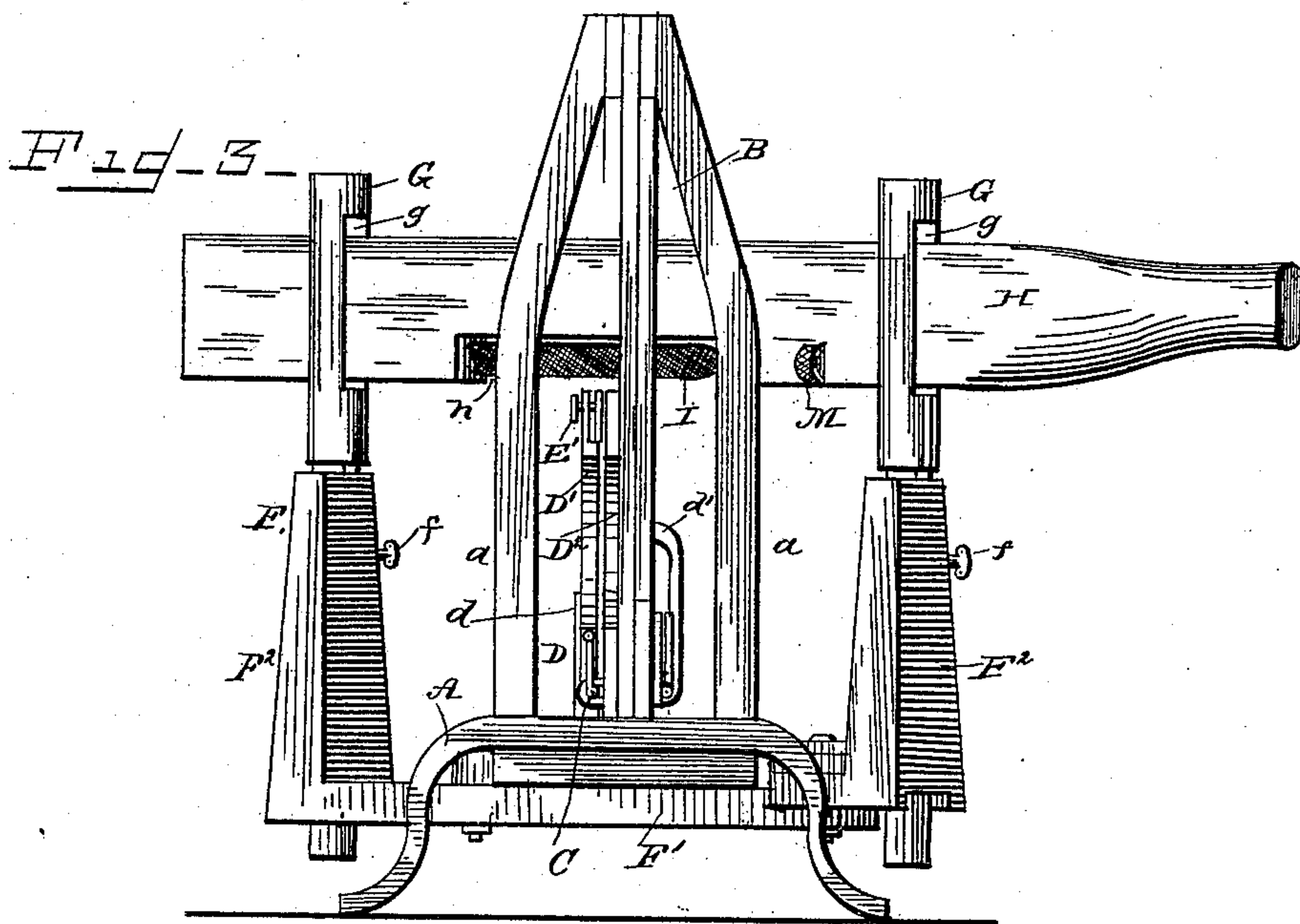
(No Model.)

3 Sheets—Sheet 3.

R. NOLEN, R. W. BISHOP & J. W. ALTEMEYER.  
SAW FILING MACHINE.

No. 357,091.

Patented Feb. 1, 1887.



Witnesses

A. G. Bishop.

M. J. Storm

Robert Nolen, R. H. Bishop and  
By the Attorney Joseph Waltemeyer

H. J. Ennis



# UNITED STATES PATENT OFFICE.

ROBERT NOLEN, OF COLORADO, TEXAS, AND RUDOLPH W. BISHOP AND JOSEPH WALTEMEYER, OF WASHINGTON, DISTRICT OF COLUMBIA; SAID BISHOP AND WALTEMEYER ASSIGNORS TO SAID NOLEN.

## SAW-FILING MACHINE.

SPECIFICATION forming part of Letters Patent No. 357,091, dated February 1, 1887.

Application filed August 20, 1886. Serial No. 211,464. (No model.)

*To all whom it may concern:*

Be it known that we, ROBERT NOLEN and RUDOLPH W. BISHOP and JOSEPH WALTEMEYER, citizens of the United States, residing at Colorado, in the county of Mitchell and State of Texas, and Washington, in the District of Columbia, respectively, have invented certain new and useful Improvements in Saw-Filing Machines; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

Our invention has relation to improvements in saw-filing machines, and has for its object to provide a machine by means of which the saw-teeth will all be filed an equal amount, and which will be certain and rapid in its operation.

To these ends the novelty consists in certain novel features, which will be hereinafter fully described, and then pointed out in the claims.

In the accompanying drawings, which fully illustrate our invention, Figure 1 is a front elevation. Fig. 2 is a plan view, and Fig. 3 is an elevation, of a machine embodying our improvements. Fig. 4 is a detail sectional view of the saw-holding clamp. Figs. 5 and 6 are detail views showing the manner of holding the file, and Fig. 7 is a detail view of one of the buffers over which the file-handle works.

Referring to the drawings by letter, A indicates the base, which is rigidly secured to the work-bench and is provided with the vertical standards *a*, arranged in pairs near its ends, as shown. A guide-frame, B, is secured between these standards *a*, and is held in position by being attached to the base A and the standards, as will be understood. The frame B is open at one end, as shown in Fig. 1, and the other end is closed and extends past the base, as shown, so as to allow sufficient play to the saw-carrying frame, as will be presently described. A screw, C, is arranged near the

lower edge of this guide-frame B, on its rear side, and is held in a fixed position by the bearings *C'* *C''*, secured, respectively, to the closed end of the frame B and to the base A at the opposite end of the frame. This screw meshes with a worm-gear wheel, *C'''*, secured on the rear end of a shaft which is journaled in the frame B and extends through the same. The front end of this shaft carries a pointer, *c*, which moves in front of a dial, *c'*, graduated to correspond with the pitch of the screw C.

D is the saw-carrying frame which works within the guide-frame B, and moves along the same by reason of the action of the screw C, as will be presently described, to bring the saw-teeth into position to be acted upon by the file. This frame D is provided at one end with an offset, *d*, the lower end of which is screw-threaded and engages the screw C when the saw is being carried forward. A similarly-constructed offset, *d'*, is provided at the opposite end and opposite side of the frame D, and engages the screw C when the frame has been reversed and the saw is being drawn back, as will be more fully referred to hereinafter.

The saw is held between two bars, *D'* *D''*, which are secured to and form part of the saw-carrying frame. The outer bar, *D'*, has its upper edge provided with a deep groove running its entire length, and a clamping-bar, E, is held in this groove and adjusted toward the saw by means of thumb-screws *E'*, as shown. By tightening the thumb-screws *E'* the saw is securely clamped and held in position.

The base A is formed with a triangular depression, *A'*, in its upper side, which depression forms approximately a quadrant. A curved slot, *a'*, in the bottom of this depression extends from side to side of the same, and is marked with degrees, in order that the file may be set to form the edge of the saw-teeth at any desired angle, as will hereinafter appear.

The file-carrying frame F is pivotally secured to the rear edge of the base A, and swings between the walls of the depression *A'*. This frame consists of a base-bar, *F'*, having posts *F''* at its ends, which posts may be formed



integrally with the said bar, or formed separately and secured thereto, as may be desired. These posts  $F^2$  are hollow and carry standards  $G$ , which are secured therein at any desired height by the set-screws  $f$ . These standards  $G$  are formed in two parts, and are provided near their upper ends with slots  $g$ , through which the file carrying and operating handle  $H$  works. A cylinder,  $G'$ , is secured within the standards  $G$ , and encircles a cylindrical rod or buffer,  $G^2$ , upon which the handle  $H$  rests. A spring,  $g'$ , encircles the buffer  $G^2$ , and, acting between the head of the buffer and the bottom of the cylinder  $G'$ , allows the buffer to yield somewhat to the pressure exerted thereupon through the handle.

The file carrying and operating handle  $H$  is provided on its under edge with a recess,  $h$ , within which the file  $I$  is held. The end walls of this recess are provided with sockets  $J$   $K$ , which receive the opposite ends of the file and secure it in position. The socket  $J$  is swiveled in the rear end of the recess  $h$ , and the socket  $K$  is inserted in an opening,  $L$ , in the forward end of the said recess. The socket  $K$  is provided with a screw-threaded portion,  $K'$ , which is encircled by a thumb-nut,  $M$ , and is operated thereby to tighten the file in its operating position. A set-screw,  $N$ , is provided in the side of the handle and bears upon the socket  $K$ , serving to hold it in any desired position.

The operation of our machine will be readily understood, and consists in carrying the saw-teeth into position to be engaged by the file and then reciprocating the file across the teeth. When it is desired to file a saw by our machine, the file-handle-carrying frame is swung around so that the file will be at the same angle to the saw-carrying frame that it is desired the cutting-edge of the saw-teeth should have to the plane of the saw, and the file is turned so as to cut the sides of the teeth at the desired angle to the line of the teeth. The graduations along the curved slot  $a'$  show when the file-carrying frame is at the desired angle, and a bolt,  $a^2$ , extending through this slot is provided with a thumb-nut,  $a^3$ , for the purpose of securing the frame in its adjusted position. By loosening the set-screw  $N$  the file can be turned by hand until it has been given the desired position, when it can be secured by tightening the said screw, as will be understood. The standards  $G$  can be set at any desired height, according to the height of the saw-teeth, or according as it is desired to file horizontally across the edge of the saw or at an inclination. When one tooth has been filed to the desired extent, the screw  $C$  is turned, and as it engages the offset  $d$  will cause the saw-carrying frame to move toward the file until the tooth next the one last filed will be in position to be filed, which

will be shown by the indicator  $c$ . When the saw-carrying frame has been moved forward until all the teeth have been filed on one side, it is taken from the guide-frame through the open end of the same, and, after being reversed end for end, is placed back in the guide-frame, and by turning the screw in the reverse direction the saw will be moved back and the unfiled side of the teeth can be filed. The same result could be accomplished by moving the saw-carrying frame back to the starting-point and shifting the file-carrying frame toward the other side of the depression  $a'$  until it marks the proper angle, when the former operation is repeated.

We have shown and described the standards  $G$  as being formed in two parts; but they could be formed in one piece, and we do not wish to be limited to the exact details of construction and arrangement shown, as it is obvious that various changes could be made therein without departing from the principles of our invention.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. The combination, in a saw-filing machine, of the base, the guide-frame secured to the base, the saw-carrying frame held in the guide-frame, and a feed-screw secured in stationary bearings and meshing with a screw-threaded offset on the saw-carrying frame, whereby the saw-carrying frame may be adjusted along the guide-frame, substantially as set forth.

2. The combination, with the guide-frame, of the feed-screw and an indicator operated by the feed-screw, substantially as specified.

3. The combination, with the base of the machine, of the base-bar of the file-carrying frame having tubular posts at its ends, standards adjustably secured in the tubular posts, and the file-carrying handle supported by the standards, substantially as set forth.

4. The combination of the base-bar provided with tubular posts at its ends and pivotally secured to the base of the machine, the standards adjustably secured in the tubular posts and slotted near their upper ends, spring buffers or cushions in the bases of the slots, and the file-carrying handle inserted through the slots in the standards and resting on the buffers or cushions, substantially as set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

ROBERT NOLEN.  
RUDOLPH W. BISHOP.  
JOSEPH WALTEMEYER.

Witnesses:

H. J. ENNIS,  
E. H. BRADFORD.