

No. 628,625.

Patented July 11, 1899.

S. W. GUTRIDGE.
SAW FILING MACHINE.

(Application filed Mar. 30, 1899.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

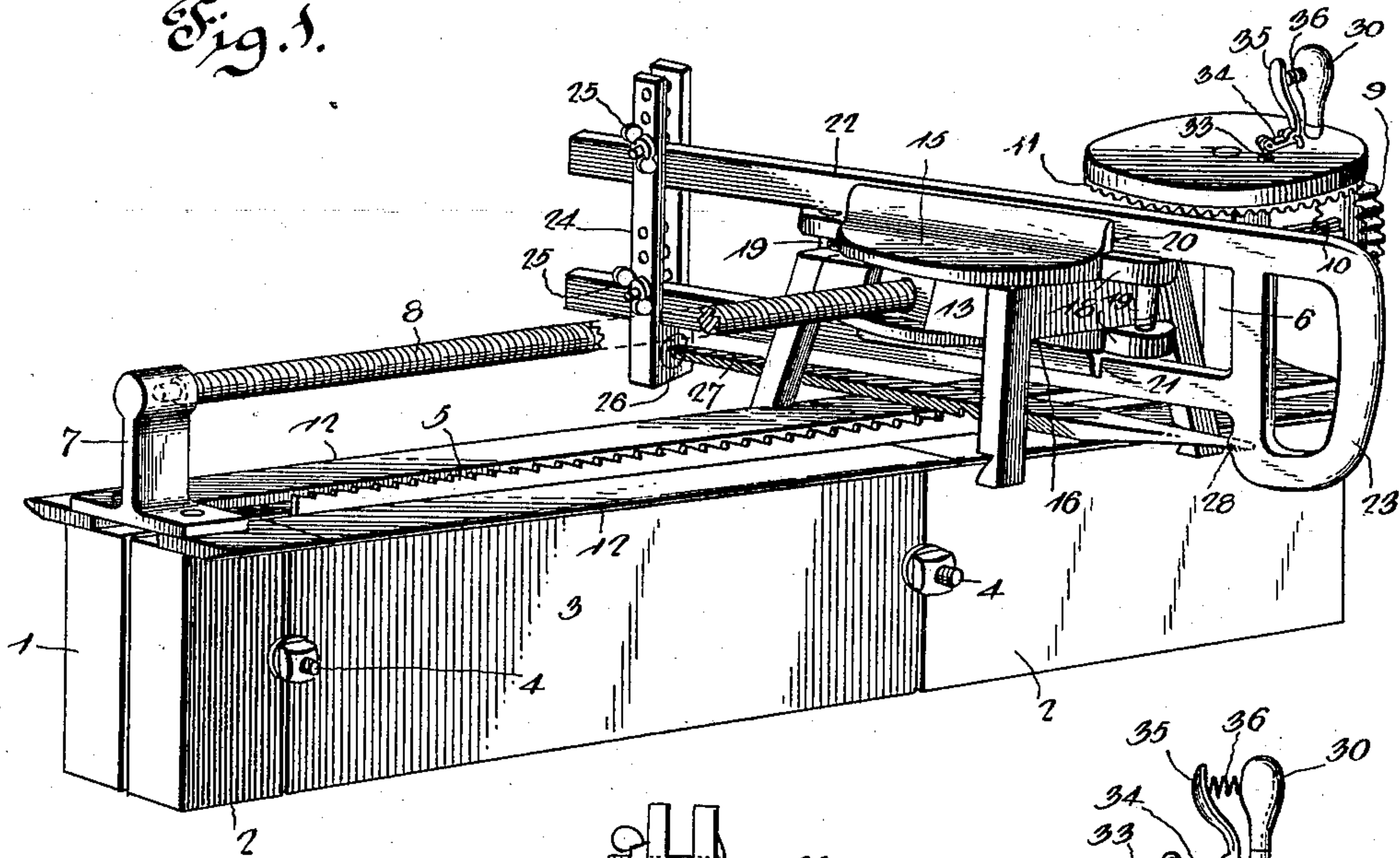
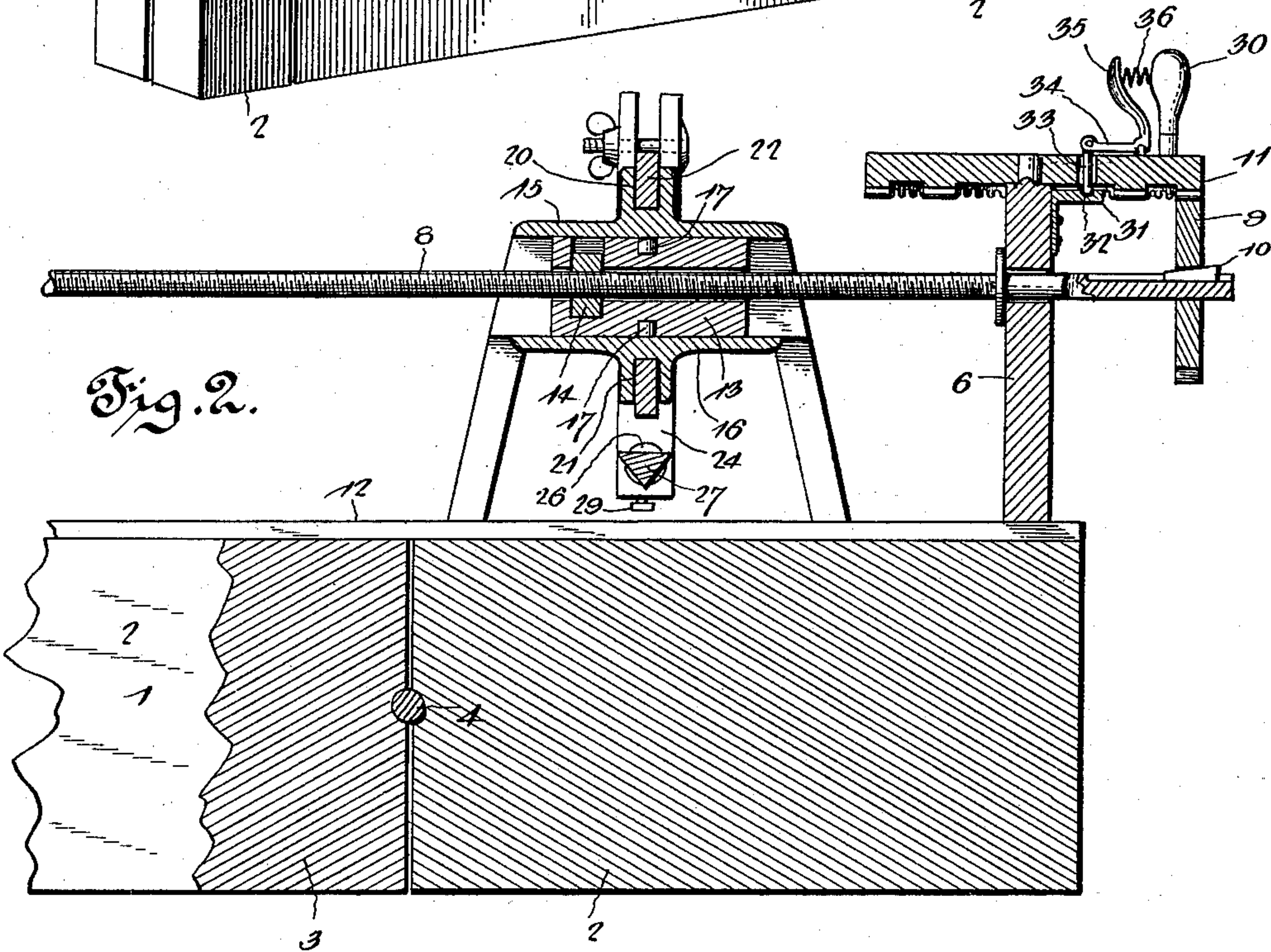


Fig. 2.



Witnesses

J. Frank Culverwell.
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By his

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Attorneys,

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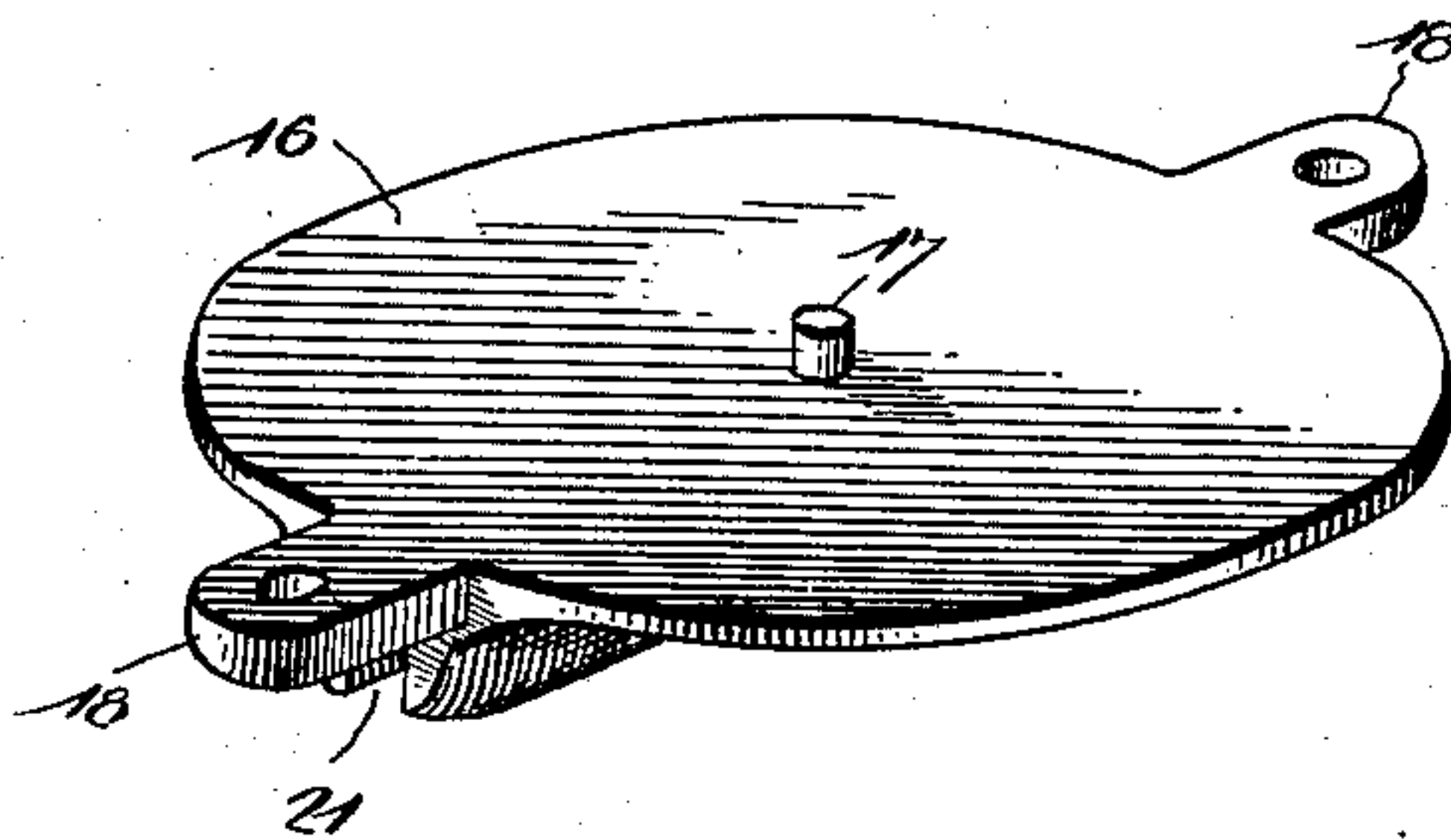
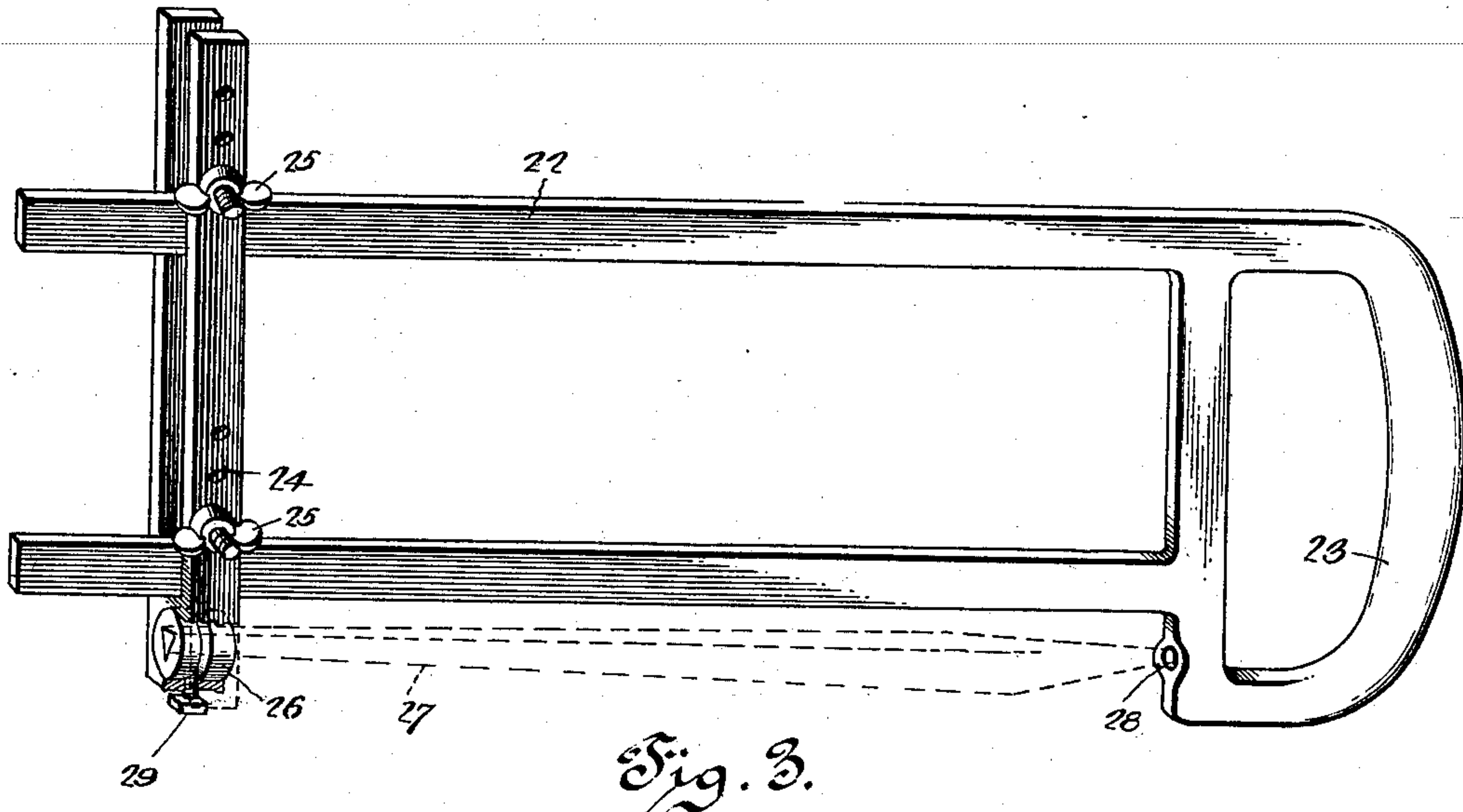


Fig. 4.

Witnesses

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UNITED STATES PATENT OFFICE.

SAMUEL WILLIAM GUTRIDGE, OF GRANITE, OREGON.

SAW-FILING MACHINE.

SPECIFICATION forming part of Letters Patent No. 628,625, dated July 11, 1899.

Application filed March 30, 1899. Serial No. 711,084. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL WILLIAM GUTRIDGE, a citizen of the United States, residing at Granite, in the county of Grant and State of Oregon, have invented a new and useful Saw-Filing Machine, of which the following is a specification.

My invention relates to saw-filing machines, and has for its object to provide a simple, compact, and efficient construction and arrangement of parts designed for filing the teeth of reciprocating saws, such as hand-saws, at any desired angle, the successive positions of the file being regulated by feeding devices for securing uniformity of dress.

Further objects and advantages of this invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings, Figure 1 is a perspective view of a saw-filing machine constructed in accordance with my invention. Fig. 2 is a longitudinal section of a portion of the same. Fig. 3 is a detail view, partly broken away, of the file-holder. Fig. 4 is a detail view of one of the members of the file-holder guide.

Similar reference characters indicate corresponding parts in all the figures of the drawings.

1 designates a saw-clamp comprising a fixed member 2, which constitutes the supporting frame or base of the saw-filing devices, and a removable member 3, which is adapted for adjustment toward and from the plane of the stationary member by means of bolts 4 to provide for clamping a saw-blade 5 in operative position therebetween. Erected at opposite ends of the supporting-frame are standards 6 and 7, in suitable bearings of which are mounted the terminals of a feed-screw 8, which is thus disposed above and parallel with the clamp and preferably in the vertical plane of the seat formed between the clamp members for the reception of the saw-blade. This feed-screw is extended beyond the front upright or standard 6 and is squared, feathered, or otherwise constructed to carry a feed-pinion 9, which is fitted upon said seat for axial adjustment, any suitable means, such as a key 10, being employed to secure the pinion at the desired adjustment. Mounted upon

the upper end of the standard 6 is a driving-gear 11, which is preferably provided upon its under side with two or more series of gear-teeth for engagement with the feed-pinion, and it is obvious that by axially adjusting the feed-pinion upon the seat extension of the feed-screw it may be arranged in operative relation with different series of teeth on the driving-gear to cause different relative movements of the feed-pinion, it being my object to so arrange the parts that one complete revolution of the driving-gear will cause the advance of the file-supporting devices through a distance equal to the interval between two adjacent teeth of the saw which is being filed, as will be more fully understood from the following description.

Mounted upon parallel guides 12, formed by flanges on the saw-clamp, is a carriage 13, having depending legs forming slides to traverse said guide-flanges, and also carrying a feed-nut 14, which is engaged by the feed-screw to provide for the communication of motion from the feed-screw to the carriage to advance the latter in a direction parallel with the saw-blade. Also mounted upon the carriage, of which the body portion is preferably parallel with the upper surface of the support or saw-clamp, is a file-holder guide consisting of upper and lower members 15 and 16, provided with central coaxial pivots 17, mounted in suitable bearings in the upper and lower sides of said body portion of the carriage, and having extensions or ears 18 connected by adjusting devices, such as screws 19, to provide for causing such frictional contact of said guide members with the upper and lower surfaces of the body portion of the carriage as to secure the guide at any desired angular adjustment with relation to the vertical plane of the feed-screw or the path of the carriage when actuated by the feed-screw. These guide members are provided in their remote or outer sides with guide-channels 20 and 21, into which are fitted the parallel upper and lower arms of a file-holder 22, suitably provided at one end with a grip 23 and at the other end with a chuck-support 24. This chuck-support consists of parallel arms arranged, respectively, in contact with the opposite sides of the file-holder arms and provided with set-screws 25, by which it may be

secured at any desired angular adjustment upon said holder-arms. Also mounted in a suitable bearing in the lower end of the chuck-holder is a chuck 26, having an axial seat for the reception of one end of a file 27, the other end of said file being fitted in a corresponding seat 28 in a shoulder or offset of the holder adjacent to the grip. The chuck may be secured at any desired angular adjustment in the bearing provided for its reception by means of a set-screw 29, whereby the faces of the file may be arranged in any desired angular positions with relation to the teeth of the saw which is being filed.

It will be understood that when the file is arranged in place and the saw secured in the clamp the file-holder may be reciprocated manually to cause the file to traverse the faces of the saw-teeth, and the angular adjustment of the file-holder guide provides for securing a uniform bevel of the saw-teeth and also for reversing the position of the file to dress alternate teeth upon opposite sides.

As above indicated, the advance of the carriage parallel with the saw-blade is accomplished by turning the driving-gear, for which purpose the latter is provided with a handle or crank 30, and the extent of the advance movement for each revolution of the driving-gear may be regulated by arranging the feed-pinion in operative relation with different series of teeth on the drive-gear and also by employing different feed-pinions having teeth spaced at different intervals. In order, however, that the drive-gear may be secured for each adjustment of the carriage in a fixed position during the filing of a tooth, I employ locking devices consisting of a segmental plate 31, secured to the standard 6 adjacent to the plane of the under side of the drive-gear and having a socket 32 for the reception of the lower end of a locking-pin 33, which is mounted upon the drive-gear. Any suitable means may be employed for holding this locking-pin yieldingly in engagement with the socket or for withdrawing the same from said socket when it is desired to turn the drive-gear to advance the carriage. In the construction illustrated the locking-pin is connected with a lever 34, suitably mounted upon the gear, adjacent to the handle of the same, and provided with a trip-handle 35, which is within reach of a finger of the hand of an operator grasping said gear-handle. A spring 36 is employed to normally hold the locking-pin in a depressed position.

From the above description it will be seen that the mechanism is of simple construction, and that the file-holder guides may be adjusted to cause the holder to operate in a plane perpendicular to the saw-blade or at any other desired angle thereto, and that the extent of the advance movement of the carriage may be varied to suit the gage of the saw. When the teeth of a saw are being filed on an oblique plane, whereby every alternate tooth is filed with a given adjustment of

the file-holder guides, two revolutions of the drive-gear are necessary to adjust the carriage after the filing of each saw-tooth is completed. It will be understood, furthermore, that various changes in the form, proportion, size, and the minor details of construction within the scope of the appended claims may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

Having described my invention, what I claim is—

1. The combination with a saw-clamp having guides, of a feed-screw, a carriage mounted upon the guides and having a feed-nut engaged by said feed-screw, a drive-gear having a plurality of series of gear-teeth, a file-holder guide mounted upon the carriage, and a feed-pinion for axial adjustment upon the feed-screw to arrange it in operative relation with different series of teeth on the drive-gear, substantially as specified.

2. In a saw-filing machine, the combination with a supporting-frame, a feed-screw, a carriage for actuation by said feed-screw and having file-holder guides, a feed-pinion, and a drive-gear meshing with the feed-pinion, of a locking device for the drive-gear consisting of a yielding pin mounted upon the drive-gear for engagement with a fixed socket, and exposed means, arranged adjacent to the handle of the drive-gear, for facilitating the disengagement of the locking-pin from said socket, substantially as specified.

3. In a saw-filing machine, the combination with a supporting-frame, a feed-screw and means for operating the same, of a carriage for actuation by the feed-screw, a file-holder guide having relatively movable members pivotally mounted upon the carriage and arranged at opposite sides of an interposed part of the same for frictional contact therewith, said members being horizontally disposed in reverse position and rotatably adjustable, means for securing said members in their adjusted positions, and a file-holder mounted for reciprocation in the guide, substantially as specified.

4. In a saw-filing machine, the combination with a supporting-frame, a feed-screw and means for operating the same, of a carriage for actuation by the feed-screw, a file-holder guide having spaced members arranged upon opposite sides of and pivotally mounted upon an interposed portion of the carriage, said members being horizontally disposed in reverse position and rotatably adjustable for angular adjustment with relation to the feed-screw, set-screws connecting said members for causing frictional contact thereof with the interposed portion of the carriage, and a file-holder mounted in said guide, substantially as specified.

5. In a saw-filing machine, the combination with a supporting-frame, a feed-screw and means for operating the same, of a carriage for actuation by said feed-screw, a file-

holder guide pivotally mounted upon the carriage for angular adjustment with relation to the path thereof and comprising horizontally-disposed pivoted members in reverse position and provided with channels on their outer faces, means for securing said guide at the desired adjustment, and a file-holder having parallel arms mounted in said channels in said guide and provided with means for engaging the extremities of a file, substantially as specified.

6. In a saw-filing machine, the combination with a supporting-frame, a feed-screw and means for operating the same, of a carriage for actuation by said feed-screw, said members being horizontally disposed in reverse position and rotatably adjustable and having channels in their outer faces, an angularly-adjustable file-holder guide mounted upon the carriage, means for securing said guide at the desired adjustment, a file-holder having parallel arms mounted in said channels in said guide, a chuck-support connecting and mounted upon said arms of the holder and mounted upon said arms of the holder for longitudinal adjustment with relation thereto, means for securing said chuck-support at the desired adjustment, and a chuck revolubly mounted upon the support for receiving one end of a file, substantially as specified.

ceiving one end of a file, substantially as specified.

7. In a saw-filing machine, the combination with a supporting-frame, a feed-screw and means for operating the same, of a carriage adapted for actuation by the feed-screw, a file-holder guide mounted upon the carriage and comprising horizontally-disposed pivoted members in reverse positions and provided with channels on their outer faces, a file-holder mounted for reciprocatory movement in the channels upon the guide, a chuck-support mounted for longitudinal adjustment upon the file-holder, means for securing the chuck-support in its adjusted positions, a chuck revolubly mounted in a bearing in said support and provided with a socket for the reception of one end of a file, and a set-screw for securing said chuck in its adjusted positions, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

SAMUEL WILLIAM GUTRIDGE.

Witnesses:

L. N. FORD,
Mrs. S. J. BROWN.