

No. 615,280.

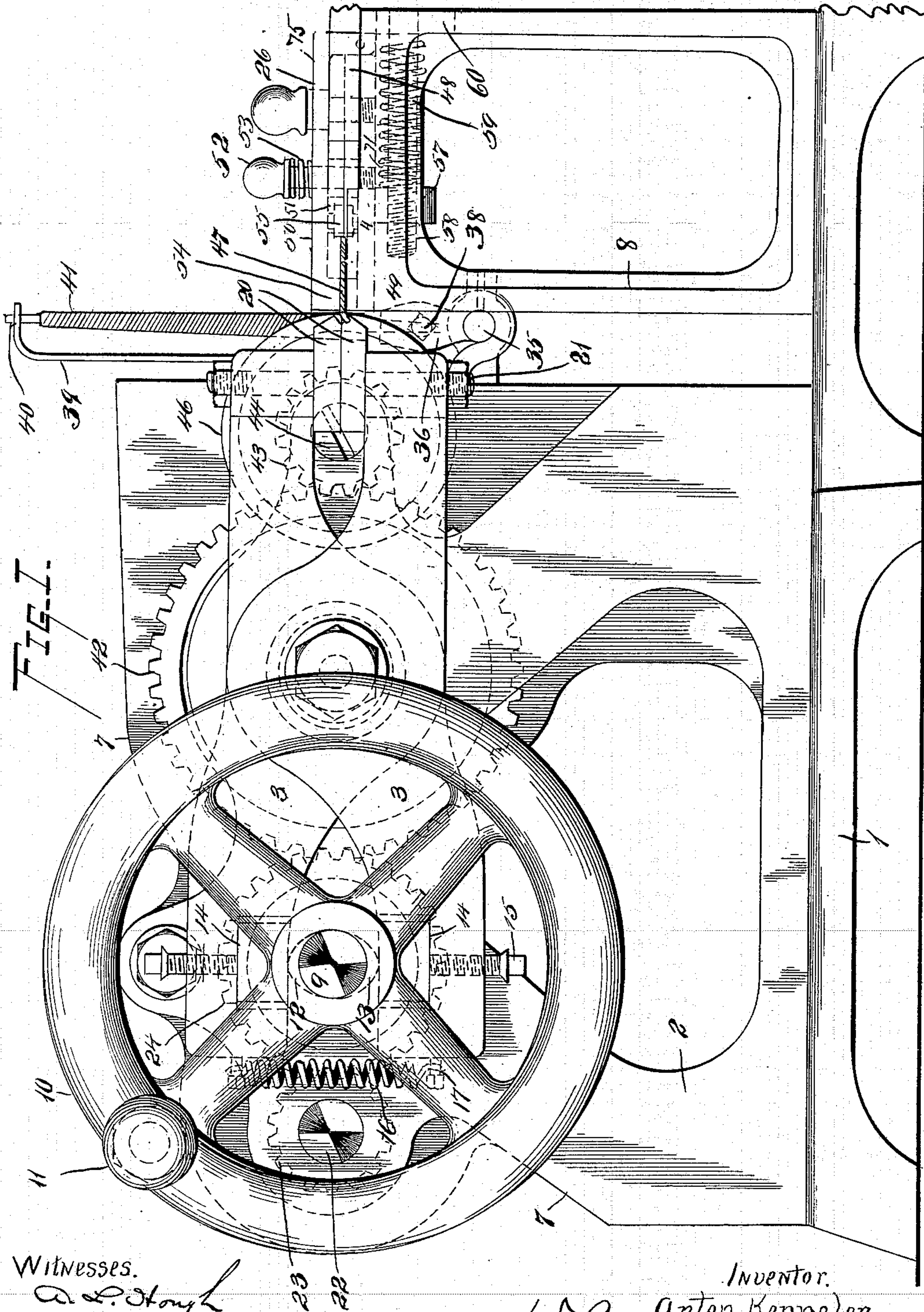
Patented Dec. 6, 1898.

A. KEPPELER.
SAW FILING AND SETTING MACHINE.

(Application filed Oct. 30, 1897.)

(No Model.)

5 Sheets—Sheet 1.



Witnesses.

A. L. Stough
L. C. Hills

Inventor.

Anton Keppeker
by Frank A. Law
Attorney.

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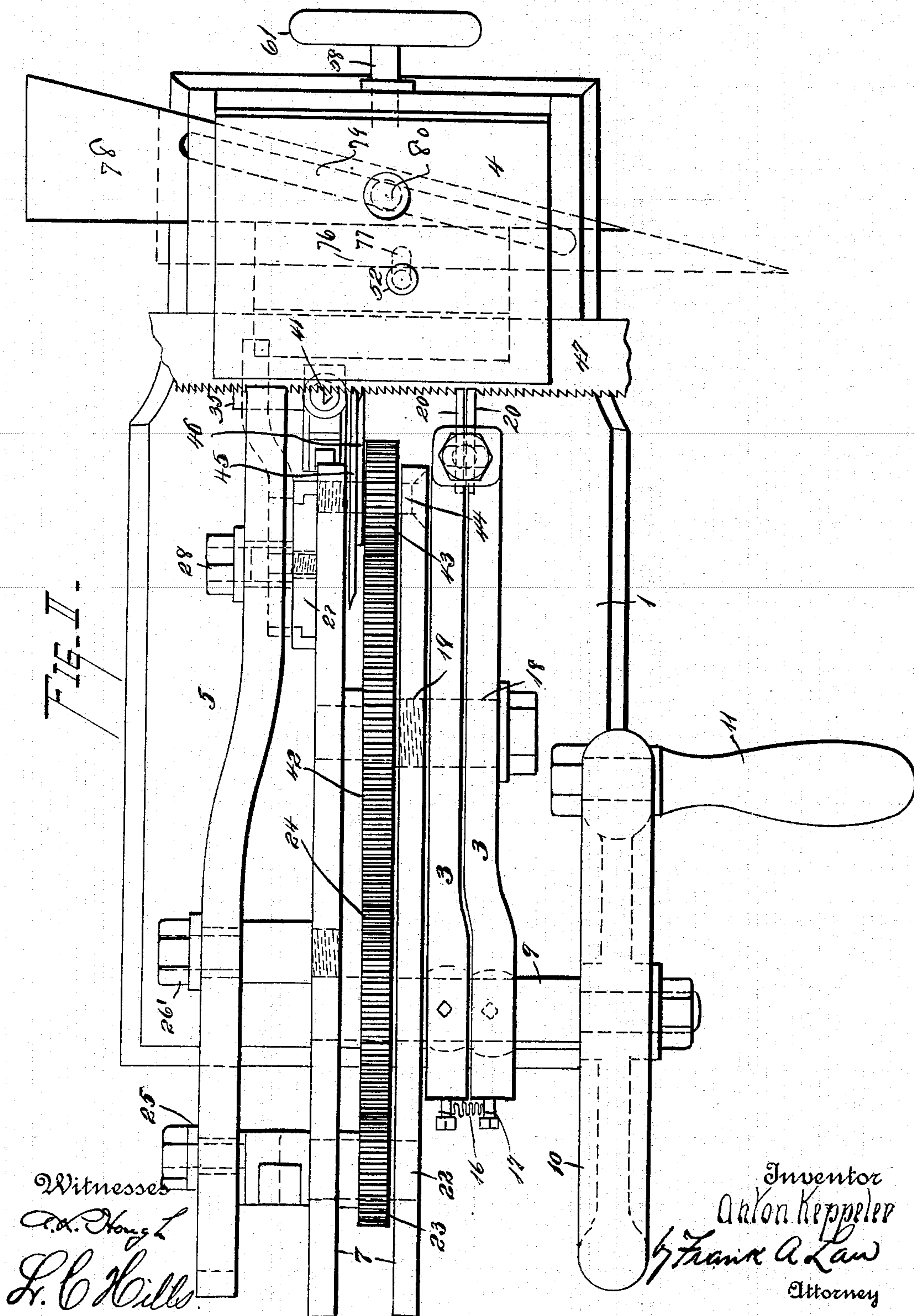
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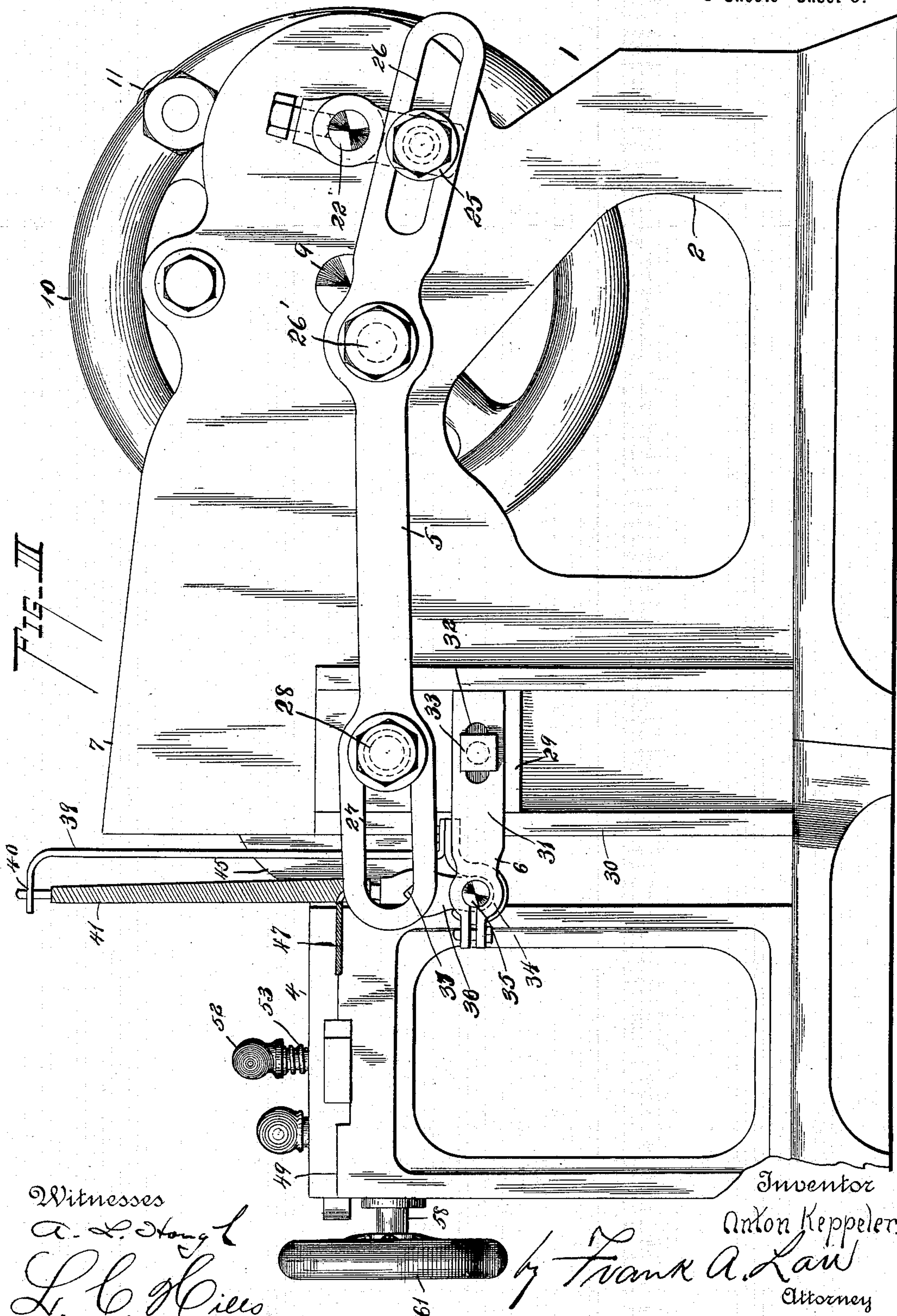
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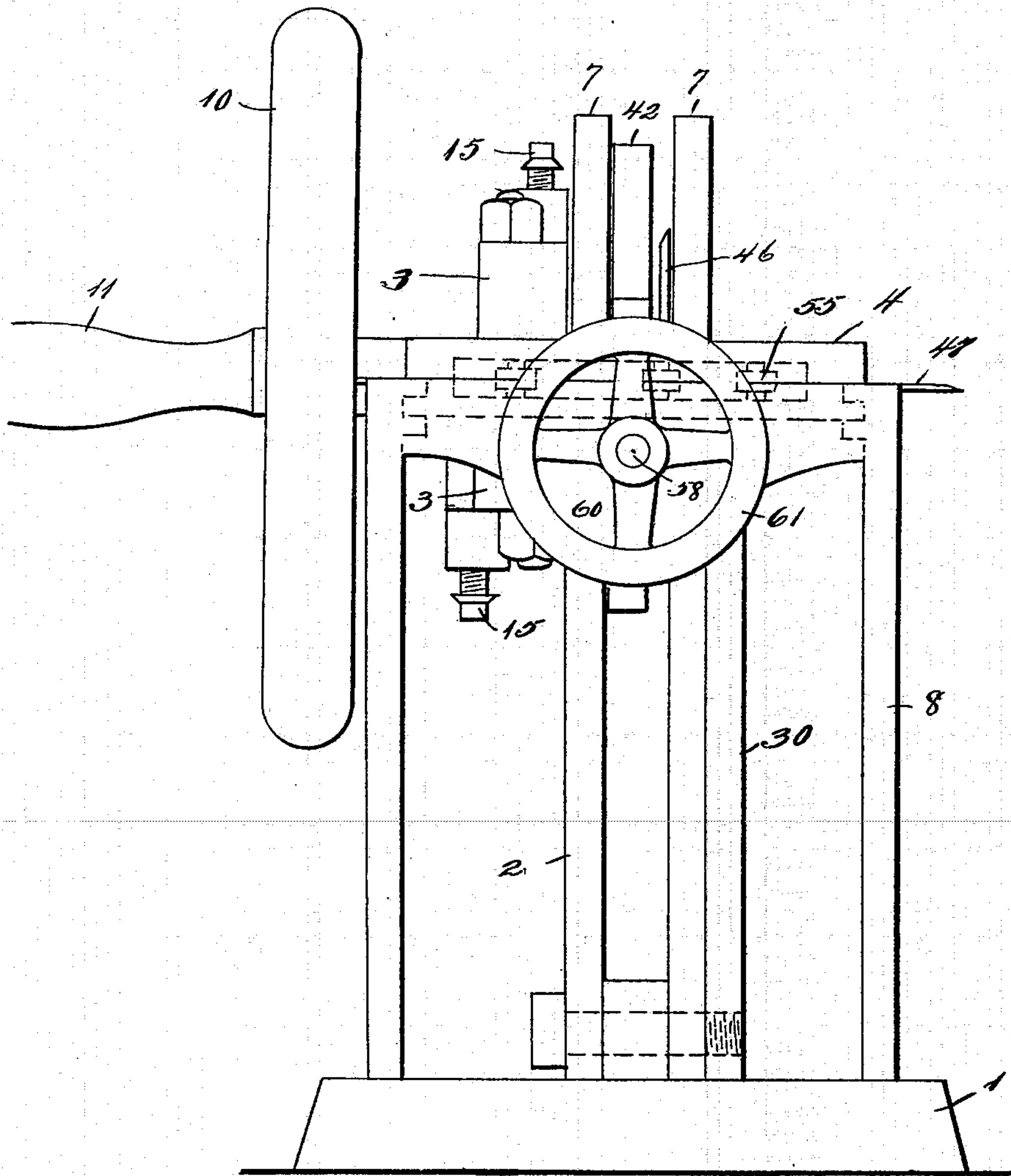
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FIG. IV.



Witnesses
a. a. Hough
L. C. Mills.

Inventor
Anton Keppeler.
By Frank A. Law
Attorney

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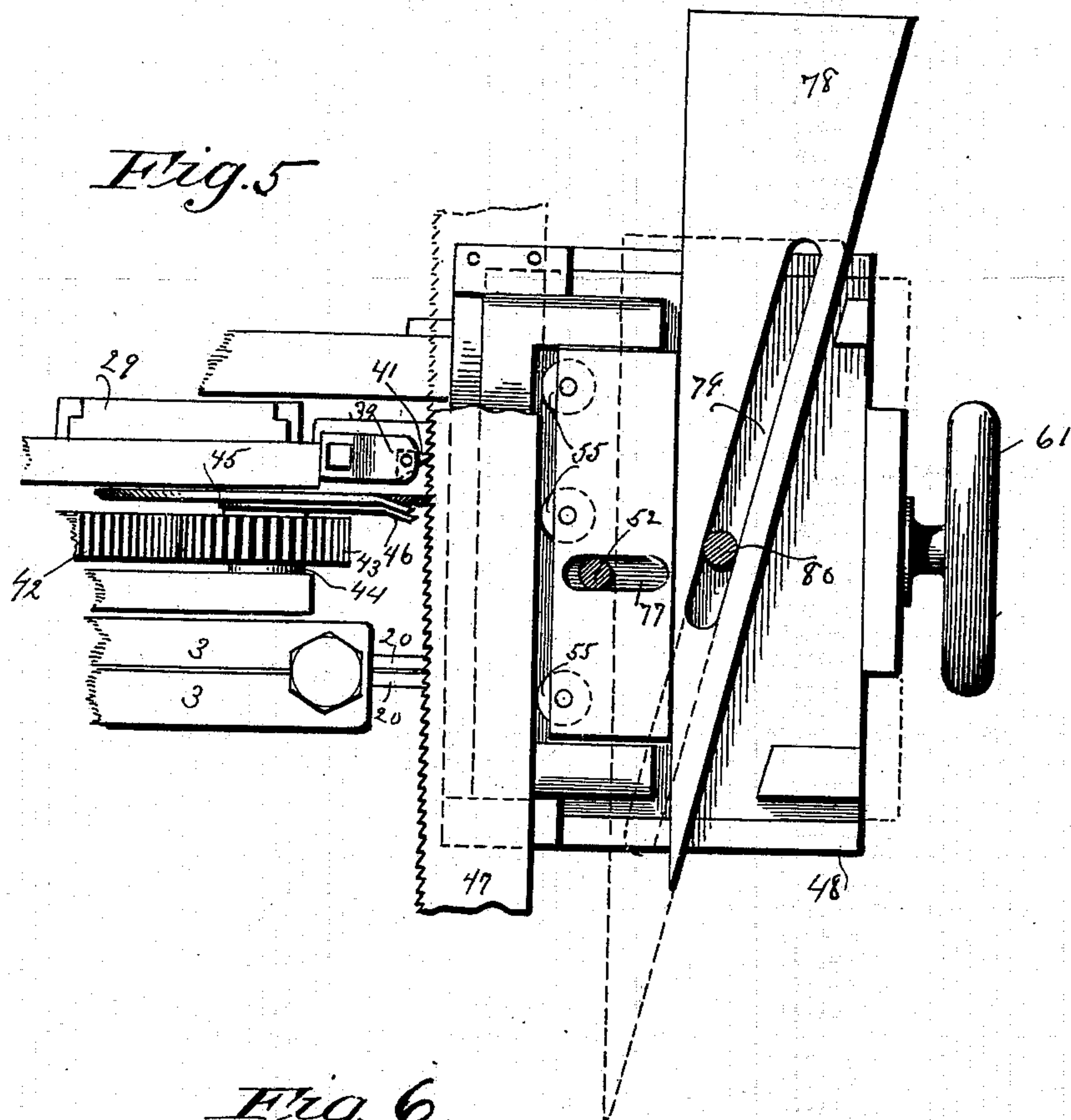


Fig. 6

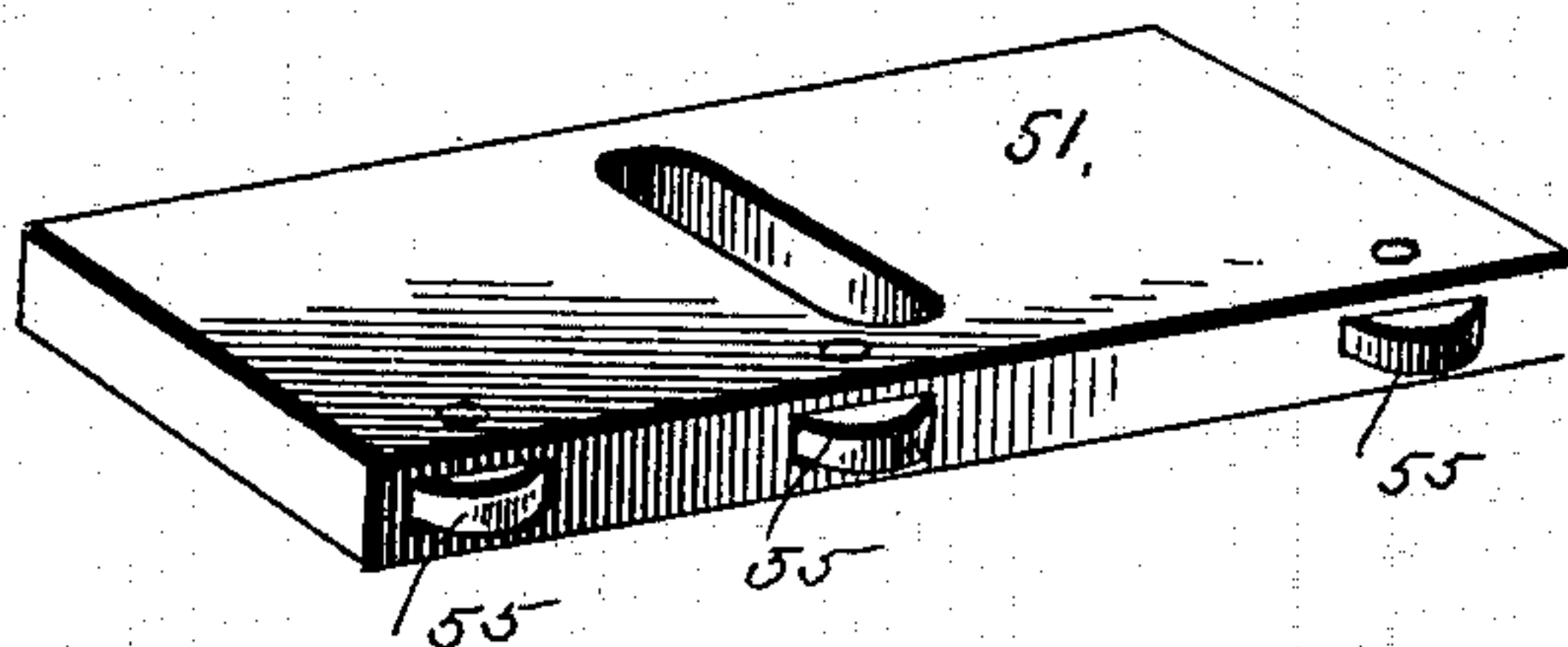
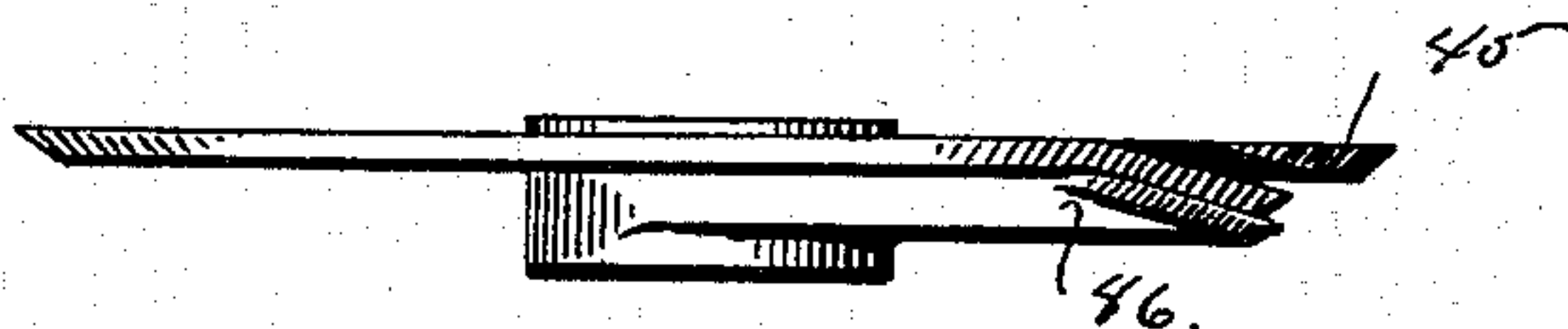


Fig. 7



Witnesses

L. C. Hills
A. L. Hough

By his Attorney

Anton Keppler
Inventor

Frank A. Lair

UNITED STATES PATENT OFFICE.

ANTON KEPPELER, OF BUTTE, MONTANA.

SAW FILING AND SETTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 615,280, dated December 6, 1898.

Application filed October 30, 1897. Serial No. 656,912. (No model.)

To all whom it may concern:

Be it known that I, ANTON KEPPELER, a naturalized citizen of the United States, residing at Butte city, in the county of Silver Bow and State of Montana, have invented certain new and useful Improvements in Saw Filing and Setting Machines; and I do hereby 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.

This invention relates to improvements in machines for sharpening and setting saws; and it consists of certain novel constructions, combinations, and arrangements of parts, all of which will be hereinafter more particularly set forth and claimed.

In the accompanying drawings, forming part of this specification, Figure 1 represents a side elevation of the machine embodying my invention. Fig. 2 represents a top plan view of the same. Fig. 3 represents a side elevation taken on the side opposite from that shown in Fig. 1, and Fig. 4 represents a front elevation of my said improved machine. Fig. 5 is a top plan view of the table and the feeding mechanism, a portion of the table being removed to better illustrate the construction of parts of the invention. Fig. 6 is a detail in perspective of the saw-adjusting block carrying antifriction-rollers. Fig. 7 is an edge elevation of the feeding-disk and segment.

1 in the drawings represents the base of my improved saw sharpener and setter; 2, the supporting-frame mounted thereon; 3 3, the setting-lever; 4, the saw-supporting table; 5, the file-operating lever, and 6 the file-holder. Said frame 2 comprises two vertical-spaced parallel plates 7 7 and curved table-supporting plates 8 8, suitably bolted to the forward ends of the same. The said plates 7 7 form a support for the main power-shaft 9, upon the outer end of which is mounted a balance-wheel 10, carrying an operating-handle 11. Said shaft 9 further carries two cams 12 and 13, respectively, secured side by side thereon. These cams are adapted to engage adjustable blocks 14, mounted in the rear ends of the respective setting-levers 3 3 and adapted to be adjusted in their relation to said levers by set-bolts 15, that pass through said levers and engage said blocks.

A coil-spring 16 has its respective opposite ends connected by screw-bolts 17, mounted in the respective ends of the levers 3 3, so as to normally draw the ends of said levers together. Said levers 3 3 are pivoted upon an auxiliary shaft 18, mounted upon the frame 2, and are held normally together in contact with each other.

Setting-dies 20 20 are mounted in the respective forward ends of the levers 3 3 by means of screw-bolts 21, which pass through said levers and engage said dies. These dies are so arranged that while one of the same strikes a tooth up the other forces the adjoining tooth down, and thus equalizes the shock to the blade and prevents the edge of said blade being bent either up or down by a constant pounding in one direction only. This peculiar arrangement of dies and the relative arrangement of the cams 12 and 13 cause the forward ends of the levers 3 3 to be brought together once upon each revolution of the main power-shaft, so that said dies are simultaneously brought into contact with the saw-teeth.

A transverse shaft 22 is journaled in the frame 2 and is provided between the respective plates of said frame with a gear-wheel 23, which latter meshes with a gear-wheel 24, fast on the main power-shaft 9. Said shaft 22 is provided at its outer end with a crank portion 25, which projects through an elongated slot 26, formed in the rearwardly-projecting portion of the lever 5. Said lever 5 is journaled, as at 26', upon one of the plates of the frame 2, and has formed at its forward end an elongated slot 27, through which passes a pin or bolt 28. This latter engages a slide 29, mounted in vertical guides 30, secured to the base 1, so that as said lever 5 is oscillated by the movements of the crank 25 said slide will be moved up and down. Said slide 29 carries an adjustable horizontal arm 31, formed with a slot 32, through which passes a securing-bolt 33, whereby said arm may be moved in and out at will. The other end of said arm is bifurcated and formed into a split journaled portion 34, in which is mounted the journal 35 of the file-support 36. This latter is formed with a socket 37, into which the lower end of the file is secured by means of a bolt 38, passing through the wall of said

support. This socket 37 is three-cornered, also the stock of the file, so that the operator after one edge of the file is dull can turn the file around to the next edge and the file will stand in the same position as before. A spring 39 is suitably secured upon the arm 31 and is provided at its upper end with an aperture 40, adapted to receive the upper end of the file 41. By this means said file 41 is pressed forward under spring tension and may yield backward when necessary to relieve any excessive friction between it and the saw-teeth. The said gear-wheel 24 is adapted to mesh with a gear-wheel 42, mounted loosely upon the shaft 18, which in turn meshes with a gear-wheel 43, mounted upon a shaft 44, to which is secured the feeding-segment 46, having threads on its end which are diagonally disposed, and also the guide or disk 45 with an offset. The circumference of said disk 45 has an offset which is disposed obliquely to the face of the disk, and this offset is designed to engage with a tooth of the saw at each revolution of the said disk for the purpose of advancing the saw the distance of one tooth. The oblique threads on the segment 46 are provided to also engage with the teeth of the saw to make the feeding sure in case the offset of the disk 45 happened to fail to feed the saw by reason of a broken tooth coming opposite the offset. After the saw has been advanced by the offset the periphery of the disk bears against the edge of the tooth and steadies the same until the saw is ready to be fed forward again, which will occur each time the disk makes a revolution. Said saw 47 is supported upon the table 4, which latter is mounted upon the supporting portion 8 of the frame. This table is mounted to slide horizontally on the support 49 and has a depending portion 57, through which the threaded bolt 58 passes, whereby as the hand-wheel 61, which is keyed to the end of said bolt 58, is turned in one direction or another the tension of the spring 49, interposed between the depending portion 57 and the outer portion of the frame, may be regulated and the table may be moved backward and forward to adjust it to the width of saw being set and filed. Pivoted to the sliding table 4 at 4^x, on the edge thereof, is the plate 75, which is adapted to swing back to allow the saw to be placed under the free edge of the plate. In order to hold the plate down, the thumb-screw 52 is provided, which has its lower end threaded and engages in a threaded aperture 71 in the table, and interposed between the plate and the head of the said screw is a spring 53, and by raising or lowering the screw the tension of the spring 53 is regulated. Mounted on the top of the table is a block 76, which is apertured at 77, and said block carries on its inner edge a series of antifriction-rollers 55, against which the rear edge of the saw being set and filed is designed to bear. At the rear of said block and loosely held on the table-top is the wedge 78, which is pro-

vided with a longitudinal aperture 79, through which the thumb-screw 80 passes. This wedge is provided to adjust the block by forcing it toward the rear edge of the saw, and when adjusted the thumb-screw 80 may be tightened and the wedge held in a fixed position.

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

1. In a saw-sharpening machine, the lever pivoted to the frame of the machine, the shaft carrying a crank and wrist-pin, which latter travels in a slot in said lever, the reciprocating cross-head to which the lever is pivoted and the file carried by the cross-head, combined as set forth.

2. In a saw-sharpening machine, the lever pivoted to the frame of the machine, the shaft, crank and wrist-pin, which latter travels in an elongated slot in said lever, the vertically-reciprocating cross-head having a sliding pivotal connection with one end of the said lever, combined with a horizontally-adjustable file-carrying bracket, as set forth.

3. In a saw-sharpening machine, the combination with the vertically-reciprocable cross-head, the lever having a sliding pivotal connection with the said cross-head, the shaft carrying the wrist-pin, the latter having a pivotal connection with the opposite end of the said lever in an elongated slot, a horizontally-adjustable bracket secured to the cross-head, and jaws on the bracket to receive a file socket-piece, as set forth.

4. In a saw-sharpening machine, the combination with the cross-head and lever having sliding pivotal connection therewith, and with an operating-crank to which power is conveyed, of the bracket, horizontally adjustable on the cross-head and having clamping-jaws, of the file-carrying socket-piece held therein, and file carried by the socket-piece, as set forth.

5. In combination with the reciprocating cross-head and means as described for operating same, the horizontally-adjustable bracket mounted on the said cross-head, clamping-jaws on the bracket, file-carrying socket-piece held by the jaws, the file fastened in the socket and the spring-arm carried by the bracket, and connected to the upper end of the file, as set forth.

6. In a saw-sharpening machine, a concentric disk having a portion of its periphery obliquely offset, a segment provided with a plurality of obliquely-arranged thread-like ribs, corresponding in obliquity and position to the offset portion of said disk, a shaft upon which said disk and segment are mounted, and means for rotating said shaft, combined with a longitudinal guide and means for adjusting the same to cause the thread of the disk to lie in and engage the throat of a saw-tooth, to intermittently feed and hold stationary the saw-blade, substantially as described.

7. In a table for a saw-filing machine, the

horizontally-sliding saw-carrying top and screw-threaded shaft, spring mounted thereon, and hand-wheel for operating the shaft, combined with the spring-actuated plate pivoted to the horizontally-movable portion of the table as shown and described.

8. In a table for saw sharpening and filing machines, the combination with the horizontally-movable top and plate pivoted thereto, the block, with antifriction-wheels mounted therein, which block rests freely on the horizontally-movable portion of the table, means for holding the block in a fixed position, and a wedge for adjusting the said block, as set forth.

9. In combination with the horizontally-

movable table-top, the plate pivoted thereto, the loosely-mounted block with antifriction-wheels mounted therein, the threaded adjusting thumb-screw passing through a transversely-disposed aperture in the said block, a spring interposed between the upper surface of the said pivoted plate and the shouldered head of the adjusting-screw, and the slotted wedge and tightening thumb-screw held in the slot therein as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

ANTON KEPPELER.

Witnesses:

CHARLES G. STORBECK,
AUGUST REUHLE.