

No. 800,933.

PATENTED OCT. 3, 1905.

J. MOORE, JR.

SAW SHARPENING AND GUMMING MACHINE.

APPLICATION FILED APR. 22, 1905.

3 SHEETS—SHEET 1.

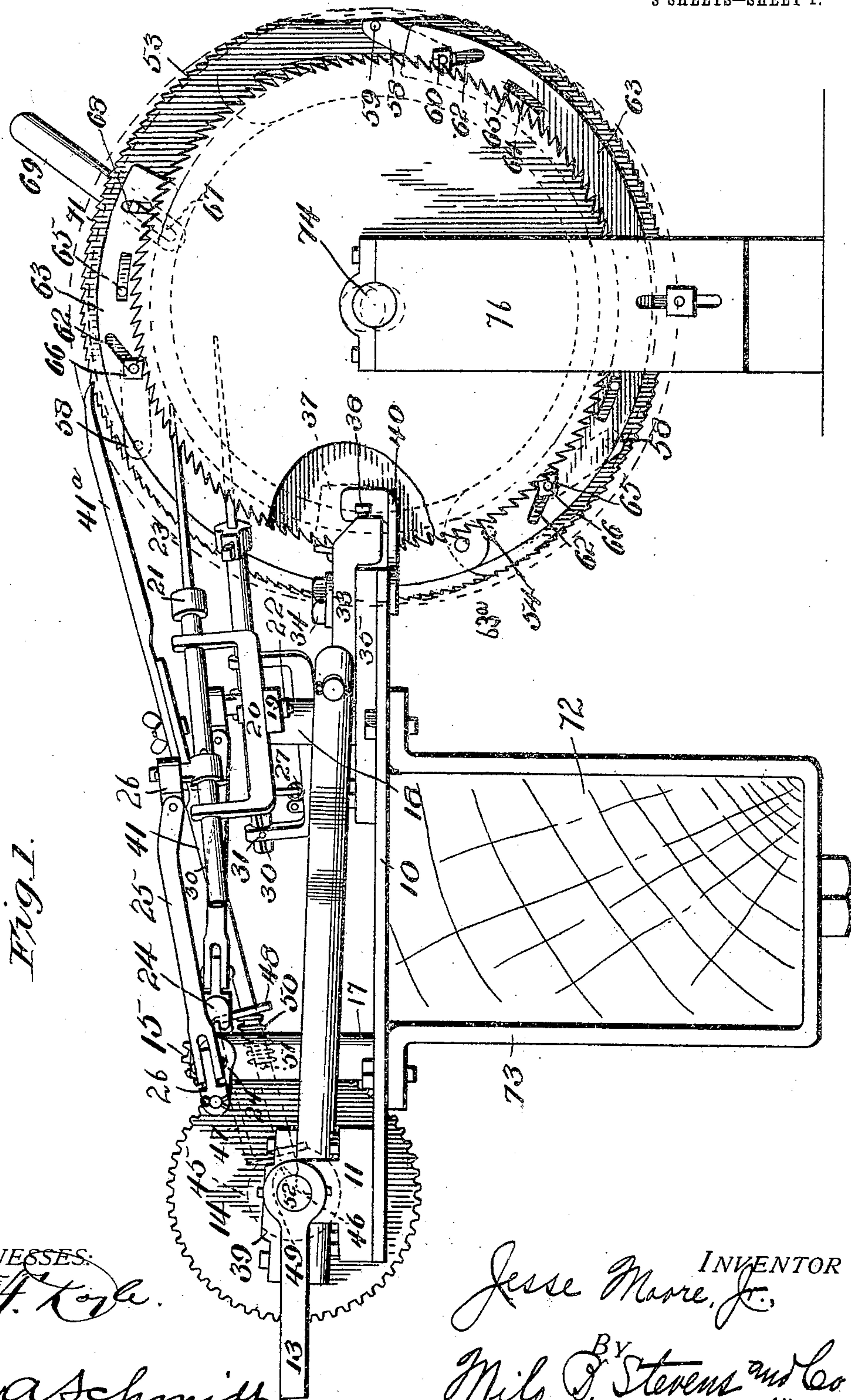


Fig. 1.

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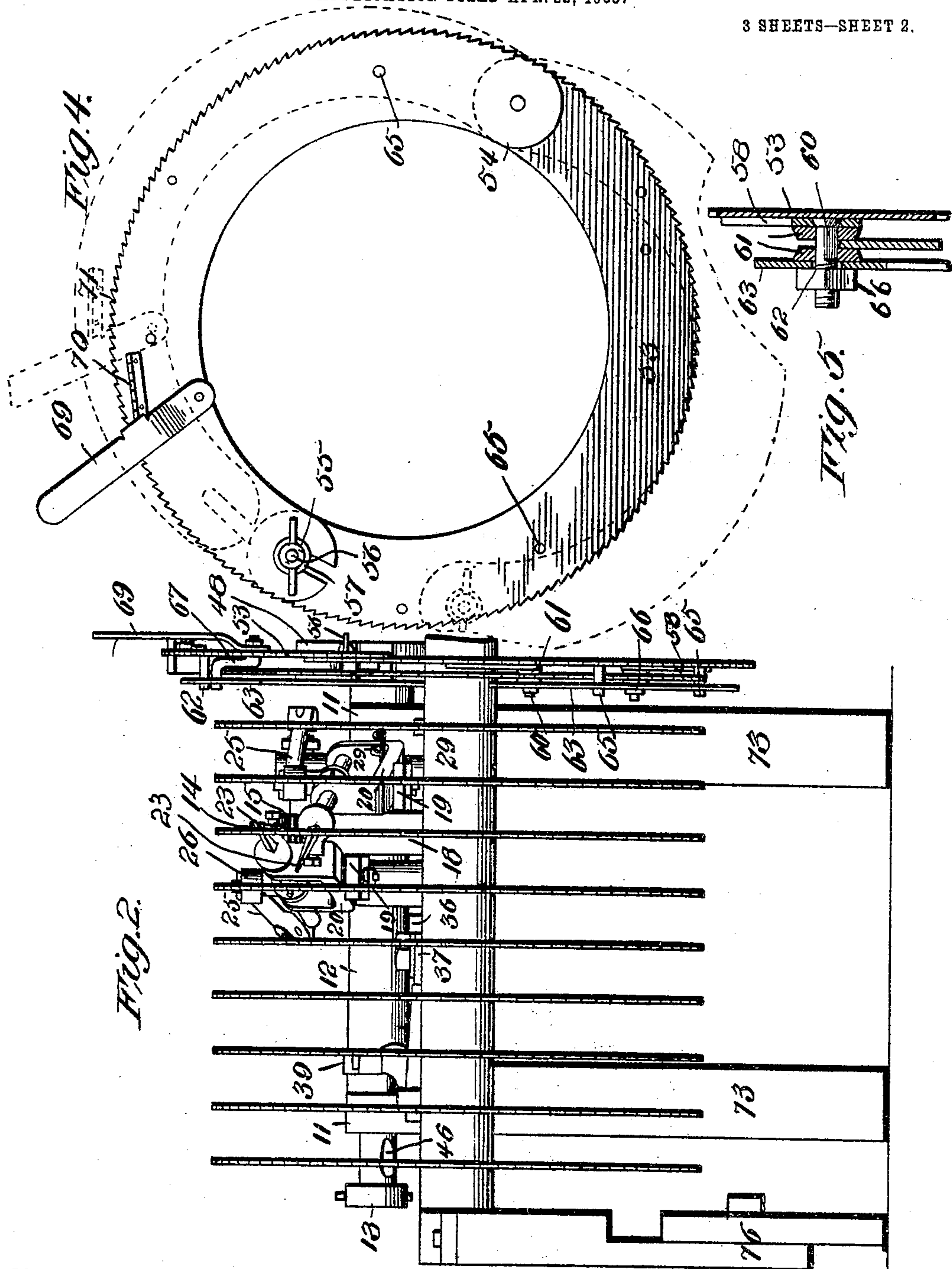
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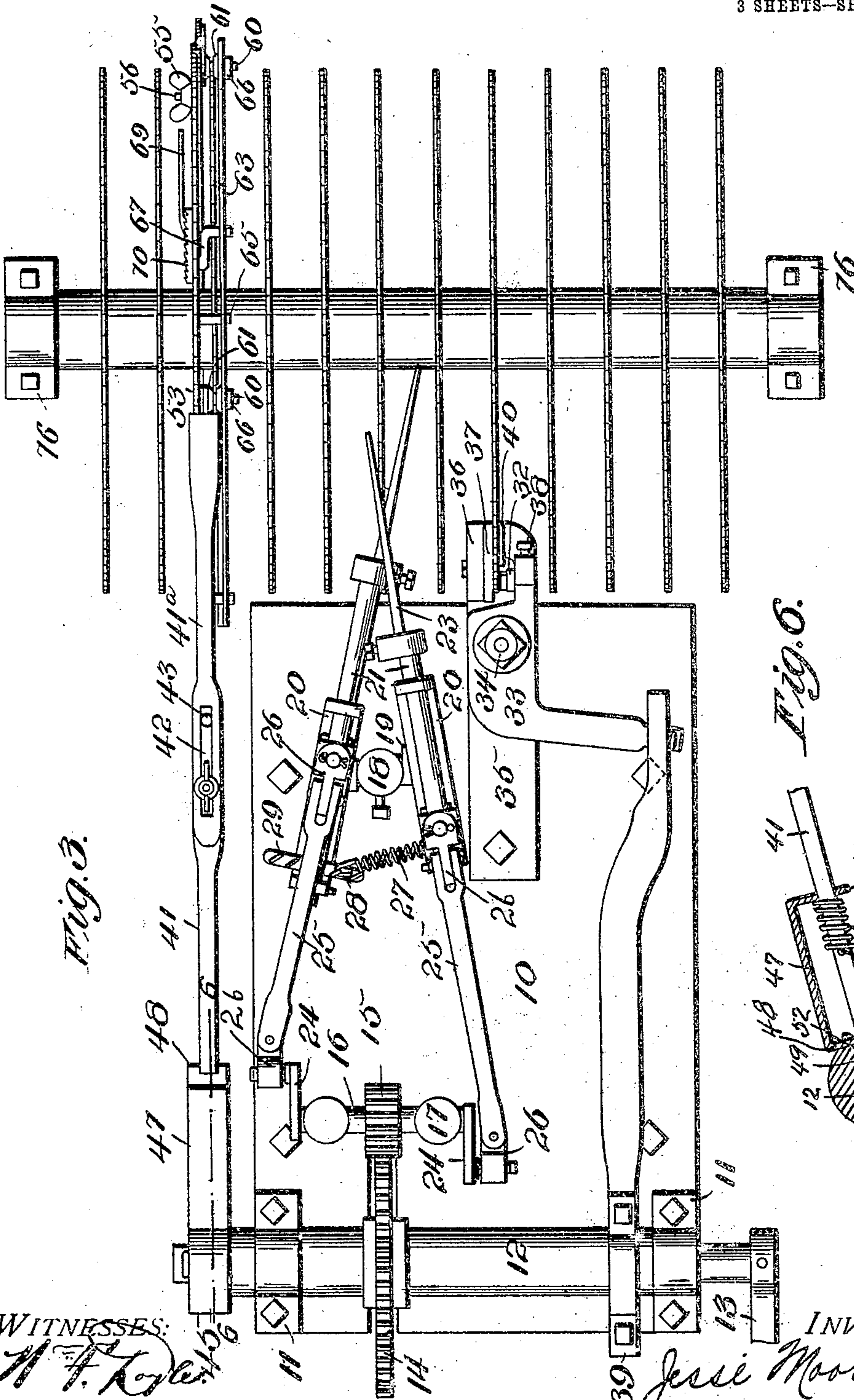
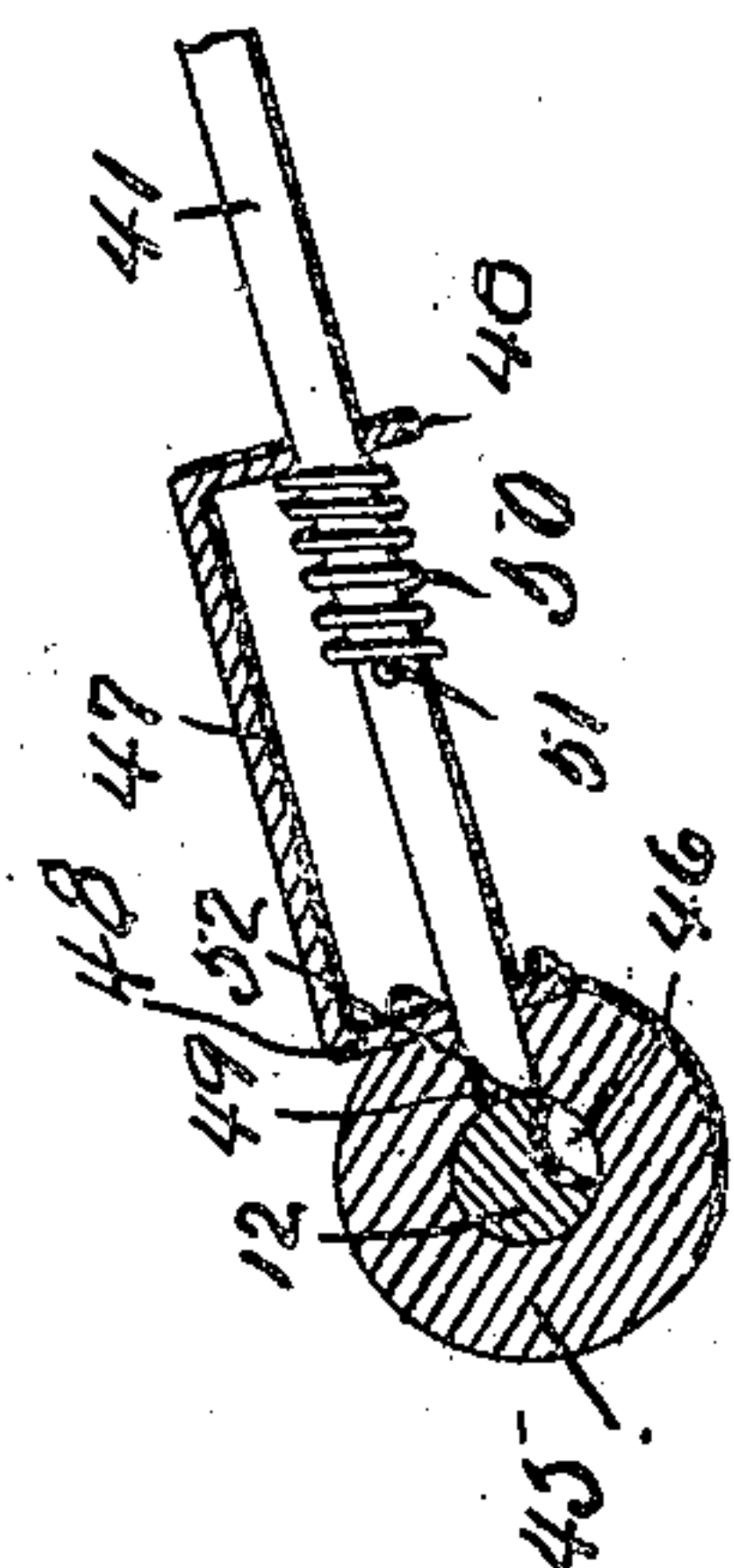


Fig. 3.

Fig. 6.



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UNITED STATES PATENT OFFICE.

JESSE MOORE, JR., OF SHARON, GEORGIA.

SAW SHARPENING AND GUMMING MACHINE.

No. 800,933.

Specification of Letters Patent.

Patented Oct. 3, 1905.

Application filed April 22, 1905. Serial No. 256,919.

To all whom it may concern:

Be it known that I, JESSE MOORE, Jr., a citizen of the United States, residing at Sharon, in the county of Taliaferro and State of Georgia, have invented new and useful Improvements in Saw Sharpening and Gumming Machines, of which the following is a specification.

My invention is a gin-saw sharpening and gumming machine, and more particularly a machine of this kind having crossed reciprocating files for sharpening the saw-teeth and a die-cutter for gumming by removing the metal from the bases of the teeth.

Improved means for feeding the saws are also provided; and the invention consists in certain novel features of construction hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a side elevation, and Fig. 2 a front elevation, of the machine. Fig. 3 is a top plan view. Fig. 4 is an elevation of the feed-index, the side opposite the one in Fig. 1 being shown. Fig. 5 is a sectional detail showing the manner in which the index is clamped to the saw. Fig. 6 is a sectional detail on the line 6-6 of Fig. 3.

Referring specifically to the drawings, 10 indicates the bed-plate or base of the machine, at the rear end of which are pillow-blocks 11, in which the drive-shaft 12 is journaled. One end of the drive-shaft is fitted with a crank 13 or other suitable means for imparting motion thereto. A spur-wheel 14, mounted on the drive-shaft, meshes with a pinion 15, the latter being mounted on a shaft 16, having its bearings in posts 17, rising from the bed-plate. At the front end of the bed-plate is a post 18, having laterally-projecting arms 19, on which the bearings 20 of the file-holders 21 are pivotally mounted, as at 22. The files are indicated at 23 and are fastened to the holders by set-screws or in any other suitable manner. At the ends of the shaft 16 are cranks 24, which are connected by pitmen 25 with the file-holders. The files are crossed, as usual in gin-saw-sharpening machines, and are reciprocated by rotating the drive-shaft 12 through the gearing described. As the file-holders extend and move at an oblique angle to the axis of the shaft 16, the pitmen are connected to the cranks 24 and the file-holders by gimbal-joints 26. The bearings 20 being pivoted, the file-holders can be adjusted to vary the angle at which the files engage the saws. A tension device for regu-

lating the pressure of the files against the saw-teeth is provided and comprises a coiled spring 27, connecting the rear ends of the bearings 20. One of said bearings has a bracket 28, provided with a number of eyes 29, to receive one end of the spring to enable the tension of the latter to be adjusted to vary the degree of pressure of the files against the saws. The file-holders are formed with spiral grooves 30, which receive pins 31, extending through the bearing 20, whereby the holders are given a rotary movement as they are reciprocated in their bearings, and the files are thus given a rolling reciprocating movement.

The die-cutter or punch 32 for gumming is secured to a bell-crank 33, which is fulcrumed at 34 on top of a plate 35, bolted to the base 10. The plate has a projecting portion 36, which extends outwardly from the base and to which the die 37 is bolted. The cutter is fastened by a set-screw 38 in a recess made in the outer end of one of the arms of the bell-crank, said arm projecting beyond the base to bring the cutter opposite the die. The cutter is operated by means of an eccentric 39 on the shaft 12, the eccentric-rod being connected with the bell-crank. A stripper-plate bolted to the bed-plate is indicated at 40.

The feed mechanism comprises a pawl which is in two parts, 41 and 41^a, respectively, each of said members being slotted, as at 42, and having projecting pins 43, the pin of one of the members fitting in the slot of the other. This construction enables the pawl to be lengthened or shortened, according to the size of the saw or the number of its teeth. A thumb-nut holds the parts in adjusted position. A block 45 fits loosely on the shaft 12, and the latter is formed with a depression 46. The block carries a supporting-bracket for the pawl, said bracket comprising a plate 47 having downturned ends 48 provided with aligned holes, through which the pawl member 41 extends. The block also has an opening 49, through which the member 41 extends into contact with the shaft. A spring 50 is coiled around the member 41 and confined between a pin 51, extending therethrough and through one of the ends 48. The depression 46, made in the shaft 12, forms a cam which acts on the beveled end 52 of the pawl member 41, and thus imparts motion to the pawl, said end 52 being continually held in contact with the shaft by the spring 50.

The feed-pawl coöperates with an index to feed the saws. The index comprises a flat annular plate 53, which is in two sections connected by a hinge 54. The free ends of the sections are fastened together by a thumb-nut 55, which is screwed on a threaded stem 56, extending from one of the sections through a slot 57 in the other. A number of plates 58 are pivotally secured to one side of the plate 53, as at 59, and carry projecting stems 60, on which two buttons 61 are mounted. These stems extend through slots 62 in a second flat annular plate 63, which is spaced from the plate 53 by the buttons 61. The plate 63 is also in two sections, which are connected by a hinge 63^a adjacent the hinge 54, and has guide-slots 64, receiving pins 65, projecting from the plate 53. The outer ends of the stems 60 are threaded to receive nuts 66. The slots 62 extend diagonally across the plate 63 and by their engagement with the stems 60 act as cams to move the buttons 61 inwardly or outwardly when the plate 63 is shifted around, the plates 58 swinging freely on their pivots 59. The plate 63 is actuated by a crank-shaped stem 67, mounted in the plate 53 and extending through a slot 68 in the plate 63. The stem 67 is fitted with an operating-lever 69, and a rack 70, secured to the plate 53, is provided for locking the lever in any desired position. The guide-slots 64 are so arranged that the plate 63 swings concentrically with respect to the plate 53. The periphery of the plate 53 is notched, as at 71, which notches are engaged by the feed-pawl.

To fasten the index to the saw, it is swung open, as shown by dotted lines in Fig. 4. The saw is placed between the plates 53 and 63, and the index is closed and fastened by the thumb-nut 55. The plate 63 is now swung around by means of the crank and lever, whereby the stems 60, by reason of their engagement with the slots 62, are caused to approach the edge of the saw. The plate is swung around until the stems tightly bind the edge of the saw, after which the lever 69 is locked in the rack 70. The buttons 61 engage the saw on its sides, and upon tightening up the nuts 66 the saw is tightly clamped on its sides. As the clamping means described move together when the plate 63 is swung, the index will be properly centered on the saw. The saw is fed by the engagement of the pawl with the notches 71, the pawl being actuated by the cam arrangement on the drive-shaft 12, heretofore described.

The operation of the machine is as follows: The machine is fastened to a suitable support 72 by clamps 73 bolted to the base 10. The arbor 74, on which the saws 75 are mounted, is journaled in a supporting-frame 76. The machine is adjusted so that the die-cutter takes the first saw at the left end of the arbor. In this position the files are to the left of all the saws. The feed-pawl is put on the shaft

12 at the right side of the machine, a depression 46, as heretofore described, being made in the shaft near each end, so that the pawl can be placed on either side of the machine. The index is clamped to a saw opposite the feed-pawl, so as to be engaged by the latter. The drive-shaft 12 is now rotated until the first saw is gummed, the cutter removing the metal at the bases of the teeth, and the pawl, through the index, feeding the saw. The machine is now moved to the right to take the next saw, and the index is also removed and fastened to the next saw, after which the second saw is gummed, as before. After gumming three or four saws in this manner the files reach the first saw that was gummed, so that thereafter the filing and gumming operation is simultaneous. The machine and index are moved one saw to the right until the index reaches the last saw on the right end of the arbor, after which the feed-pawl is removed and placed on the opposite end of the drive-shaft and the index on a saw on the left end of the arbor. The operation of the machine is now continued until all the saws are filed and gummed.

The index will be made in various sizes to suit different saws, and each index will have as many notches as there are teeth on the saw for which it is intended. The pin-and-slot connection of the feed-pawl members enables the feed-pawl to be properly adjusted according to the size of the index used and also enables the feed to be correctly started. The notches 71 on the plate 53 being uniformly spaced, the feed is accurate and the teeth are correctly sharpened. By an adjustment of the saws the teeth can be given any desired angle or slant. Thus if the teeth are too straight the saws are lowered, and if the teeth are too slanting the saws are raised, as shown by dotted lines in Fig. 1. In these positions the die-cutter engages the saws at the proper angle to give the teeth the desired slant.

The machine can be used to gum or file separately, if desired. By removing the cutter it can be used as a filing-machine only, and by removing the spur-wheel 14 it can be used as a gummer only.

Having thus described my invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. In a saw-sharpening machine, a feed-index comprising an annular plate having a notched periphery; swinging pins carried by the plate; means for swinging said pins into engagement with the edge of the saw; clamping means to engage the sides of the saw carried by the pins; and a feed-pawl engaging the notches.

2. In a saw-sharpening machine, a feed-index comprising an annular plate having a notched periphery; swinging pins carried by the plate; means for swinging said pins into

engagement with the edge of the saw to clamp the index thereto; and a feed-pawl engaging the notches.

3. In a saw-sharpening machine, a feed-in-
5 dex comprising an annular plate having a
notched periphery; swinging pins carried by
the plate; a second annular plate having cam-
slots to receive the aforesaid pins; means for
shifting the last-mentioned plate to swing
10 the pins into engagement with the saw edge;

clamping means carried by the pins to engage the saw on opposite sides; and a feed-pawl engaging the notches.

In testimony whereof I have signed my name to this specification in the presence of two sub- 15
scribing witnesses.

JESSE MOORE, JR.

Witnesses:

G. L. MOORE,
WM. T. FLYNT.