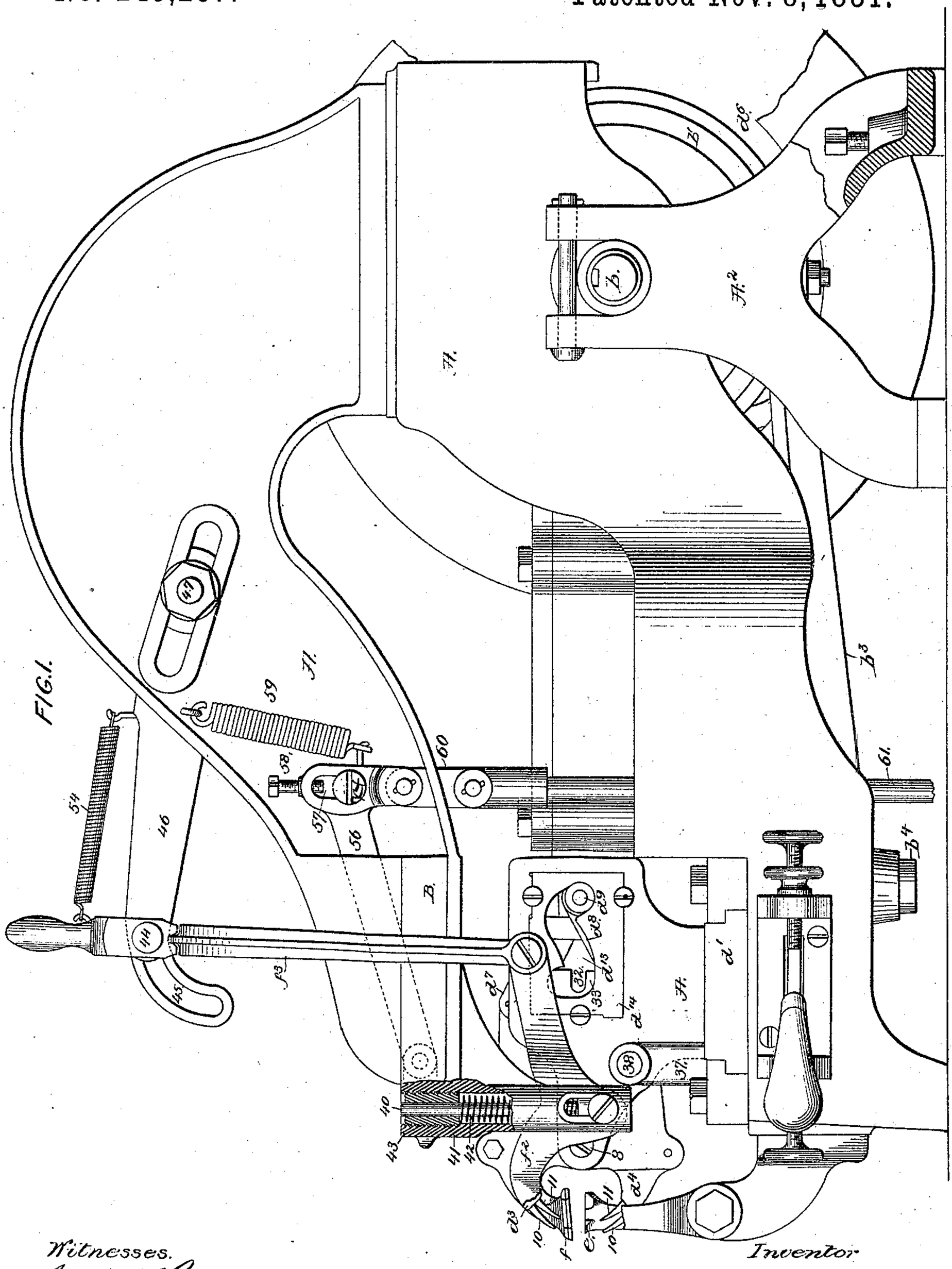
(No Model.) 3 Sheets—Sheet 1.

C. W. GLIDDEN.

MACHINE FOR PRICKING AND TRIMMING SOLES.

No. 249,237. Patented Nov. 8, 1881.



Witnesses.
Arthur Reynolds
W. H. Leighton.

Inventor.
Chas. W. Glidden.
by Crosby & Gregory Attys.

N. PETERS. Photo-Lithographer, Washington, D. C.

(No Model.)

3 Sheets—Sheet 2.

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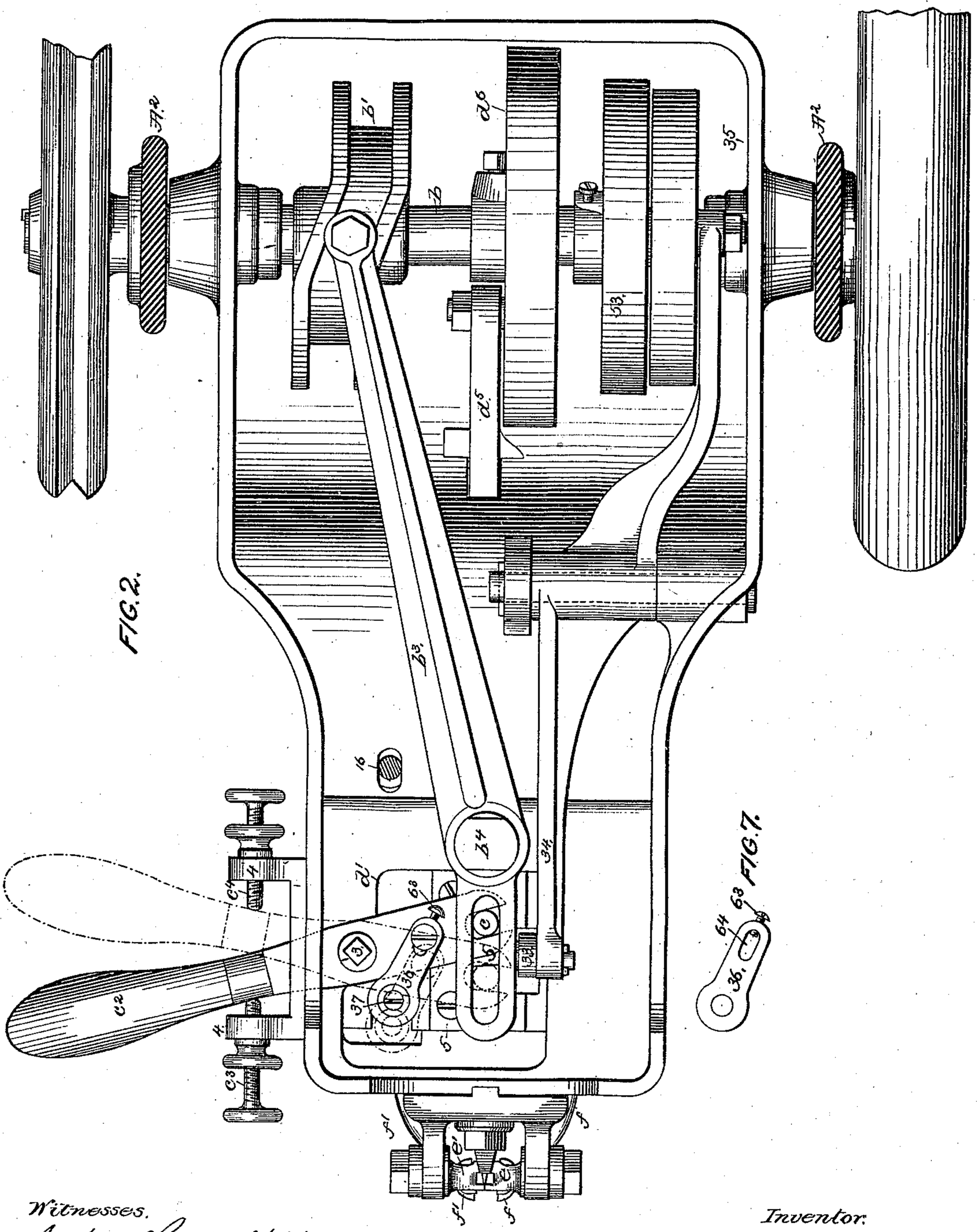

FIG. 2.

FIG. 7.

Witnesses.
Arthur Reynolds.
W. A. Ligiston.

Inventor.
Chas. W. Glidden,
by Crosby & Gregory Attys

N. PETERS, Photo-Lithographer, Washington, D. C.

(No Model.)

3 Sheets—Sheet 3.

C. W. GLIDDEN.

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FIG. 4.

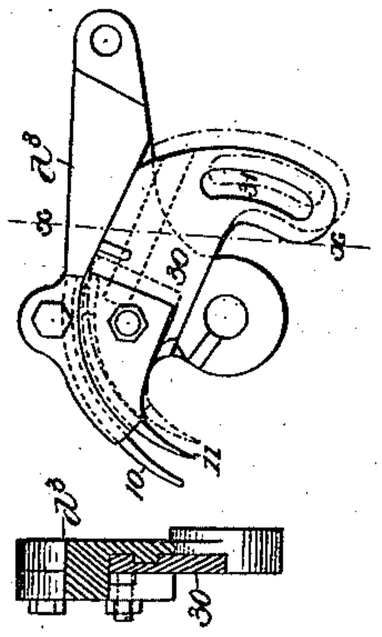


FIG. 5.

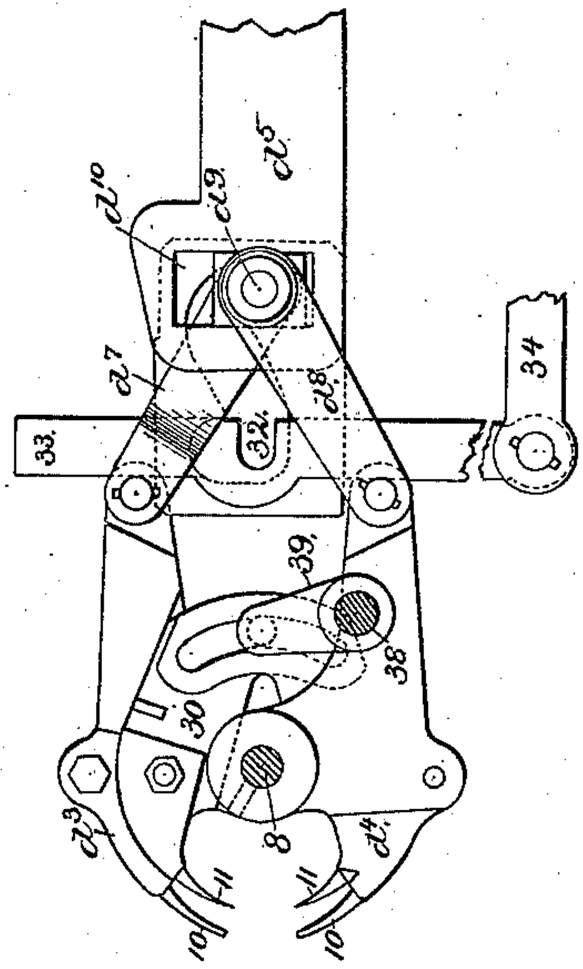


FIG. 6.

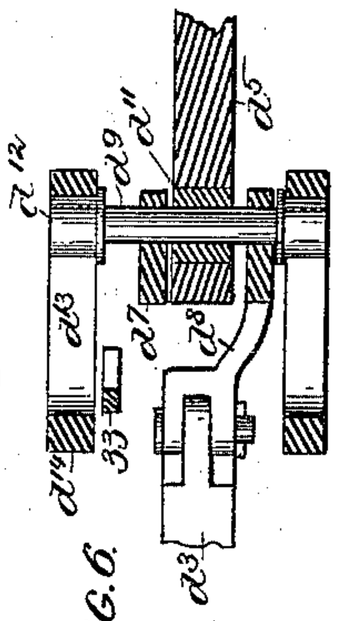
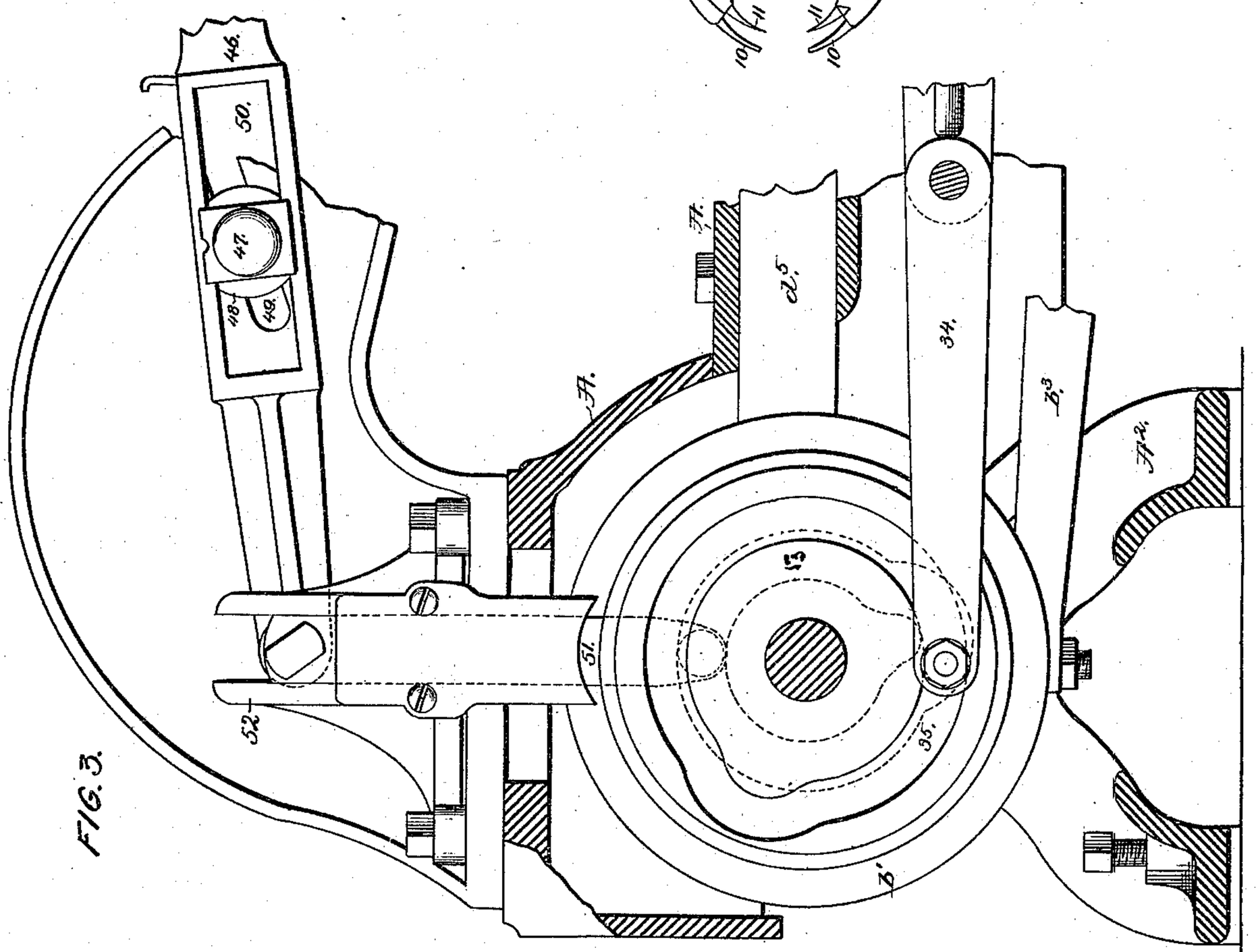


FIG. 3.



Witnesses.
Arthur Reynolds
W. A. Sigston

Inventor.
Chas. W. Glidden,
by Crosby & Gregory Attys

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

CHARLES W. GLIDDEN, OF LYNN, MASSACHUSETTS.

MACHINE FOR PRICKING AND TRIMMING SOLES.

SPECIFICATION forming part of Letters Patent No. 249,237, dated November 8, 1881.

Application filed April 19, 1881. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. GLIDDEN, of Lynn, county of Essex, State of Massachusetts, have invented an Improvement in Machines for Pricking and Trimming Soles, of which the following description, in connection with the accompanying drawings, is a specification.

This invention is an improvement on United States Patent No. 215,547, May 20, 1879, to which reference may be had, and relates, chiefly, to improvements in mechanical details, whereby the said machine may be more easily and readily operated, and whereby the knives or cutters are made automatically adjustable toward and from the awls or piercing-instruments, to thus leave more or less of the sole outside the line of holes made for the thread or stitches.

Figure 1 is a side elevation of a machine containing the invention herein described; Fig. 2, an under side view thereof; Fig. 3, a partial section of the rear of the machine; and Figs. 4, 5, 6, and 7, details to be referred to.

The frame-work A, of suitable shape to receive the working parts, has its main shaft *b* placed in suitable bearings, A^2, screwed to a bench, or the floor, or other proper support, so that the frame A may be turned upward, the shaft *b* acting as its journals when it is desired to gain access to the under side of the machine. The cam b', lever b^2, lever b^3, having its fulcrum at b^4, and slotted at its forward end to receive the stud *c*, made movable in ways of the carriage d', which supports the fulcrum 8 for the awls 10, the lever c^2 and stops c^3, and the pressers $f f'$, and supports $e e'$ are all as in the patent referred to, so need not be herein further described. In that patent the awls and cutters were directly connected with the carriers d^3 d^4, having a common center on the pin 8, substantially as herein shown by the same letters, and the said carriers were actuated by a wedge, cam, and springs; but in this present invention the said carriers are connected by links d^7 d^8 with a pin, d^9, extended into a bushing-block, d^{11}, fitted to an opening, d^{10}, in the horizontally-reciprocating slide d^5, actuated by the cam d^6 on shaft *b*. The movement of the slide d^5 causes the ends of the pin d^9, preferably provided with rolls, to travel backward and forward in the cam-slots d^{13} of the cutter-controlling guides d^{14}, adjustably secured in the frame-work A, as in Fig. 1, and closes and opens the carriers, to project the awls and cutters 11 through the soles of the boot or shoe. The cutters 11 are held by slides 30, provided with cam-slots 31, the said slides being fitted into guides of the carriers, as shown in Figs. 4 and 5, so as to be moved horizontally toward and from the awls 10, as shown in dotted lines, in order that more or less stock or leather may be left in the sole outside the series of holes made by the awls 10.

In order to give to the awls and cutters a simultaneous movement for a short distance, as their points and edges almost meet, so as to make the holes uniform and fully and cleanly cut or sever the leather, the pin d^9, as it reaches the end of its guiding-slot d^{13}, is placed in a notch, 32, of the pin-moving link 33, pivoted to the lever 34, actuated by the cam 35.

The feed-regulating lever c^2, common to the said patent, and for controlling the shoe-feeding movement of the awls and cutters while in the work, has jointed with it a link, 36, attached loosely to the lower end of the long arm 37 of a rock-shaft, 38, having a short arm, 39, that is provided with a pin, (shown in dotted lines, Fig. 5,) which is extended through the slots 31 of the awl-carrying slides 30.

The edge of the sole, outside the series of awl-holes, is usually made narrower about the shank of the shoe, where the stitches are to be made longer than about the fore part of the sole, and this is accomplished automatically by the lever c^2, which, as it is moved against the stop c^4, to lengthen the distance between the awl or stitch holes in the shank, also moves the cutters 11 toward the awl 10.

The lifting presser-feet $f f'$, substantially such as shown in the said patent by the same letters, have their fulcra in bearings at the lower end of rods 40 fitted to rise and fall in bearings 41, the said rods being surrounded by springs 42, made adjustable by means of screw-plugs 43. (See Fig. 1.) These presser-feet are lifted, as the awls are moved laterally to feed the sole, by means of a link, f^3, having a pin, 44, fitted into a curved slot, 45, of a lever, 46.

The pivot or fulcrum pin 47 of the lever 46 is provided with a loosely-mounted pivot-block, 48, which is extended through the slot 50 in

the lever 46, as shown in Fig. 3. The rear end of the lever 46 has pivoted to it a link, 51, fitted into a vertically-placed link-guide, 52. This link, having a rod (see Fig. 3) at its lower end, is acted upon by a cam, 53, shown therein in dotted lines, and reciprocated vertically at the proper time during each rotation of the shaft. The fulcrum-pin 47 of the lever 46 is made adjustable in a slot, 49, of the frame, which slot is so shaped with relation to the cam 35 and the length of the link 51 as to insure that the presser-feet for all adjustments of the fulcrum-pin 47 will always descend to the same point, but will be elevated more or less from the fixed or established point of descent, according to the position of the said fulcrum-pin in the slot 49, such adjustments being made from time to time, according to the thickness of the stock being pressed and cut. When the lever 46 is stationary the pressers may be raised and lowered by moving the pin 44 of the link f^3 in the slot 45. A spring, 54, keeps the link f^3 normally in the position Fig. 1.

The bearings 41 are supported by a horizontally-movable slide, B, fitted in guideways of the frame A. (See Fig. 1.) A link, 56, pivoted to the slide B is provided at its end with a slot, 57. A screw or headed pin, x^4, is inserted through the slot 57 and into the frame A. The adjusting-screw 58 enables the slot 57 to be lengthened or shortened, so as to permit the rear end of the link 56 to be moved more or less, to thus move the slide B and bearings 41 more or less laterally to place the outer edges of the pressers more or less distant from the awls, and to regulate the distance of the awl-holes from the upper of the shoe, for the purposes described in the said patent. The rear end of the link 56 has jointed to it a short link, on which is pivoted the rod 61, which will be connected with a treadle, so as to move the pressers, as described.

The screw 63 in the link 36 may be used to lengthen or shorten the slot 64, to thus regulate the distance that the cutters may be moved laterally with relation to the awls.

The slots 31 in the slides or cutter-carriers 30 are described from the pin 8, which connects the awl-carriers, and the pin of the arm 39 is so located that the awls and cutters may always move about the same center 8.

I claim—

1. In a machine to prick or trim a sole, an awl-carrier provided with an awl to prick the leather, and a cutter and slide or block with which it is connected made adjustable toward and from the awl, substantially as described.

2. The two awl-carriers and two awls and pin d^9, and links connecting them and the reciprocating slide to move the pin, combined with the guides, slotted as described, to direct the said pin, substantially as set forth.

3. The reciprocating slide d^5, the pin d^9, and links and awl-carriers and slotted guides d^{14}, to guide the said pin, combined with the pin-moving link, to engage and move the said pin vertically and move the carriers and awls simultaneously together for a short distance in the same direction while in the leather, substantially as described.

4. In a machine to prick and trim leather, the awl and carrier, and the cutter-carrying slide actuated by and made adjustable therewith, and the feed-adjusting lever, and means, substantially as described, between and joining the cutter-carrying slide and feed-adjusting lever, whereby the length of feed and distance between the awl and cutter may be changed at one operation.

5. The awl-carrier grooved as described, and the cutter-carrier provided at its rear end with a slot, 31, as described, from substantially the center of movement of the awl-carrier, combined with a pin to enter the slot of and adjust the positions of the cutter-carrier, and yet permit the awl and cutter carriers to oscillate about the same center, substantially as described.

6. The feed-adjusting lever and the rocker-shaft having arms 37 and 39, to move the cutter-carrying slide, combined with the adjustable link to connect the arm 37 with the said lever, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES W. GLIDDEN.

Witnesses:
G. W. GREGORY,
W. H. SIGSTON.