(No Model.) 2 Sheets—Sheet 1.

Z. T. FRENCH & W. C. MEYER.

SOLE SEWING MACHINE.

No. 563,471. Patented July 7, 1896.

Fig. 1.

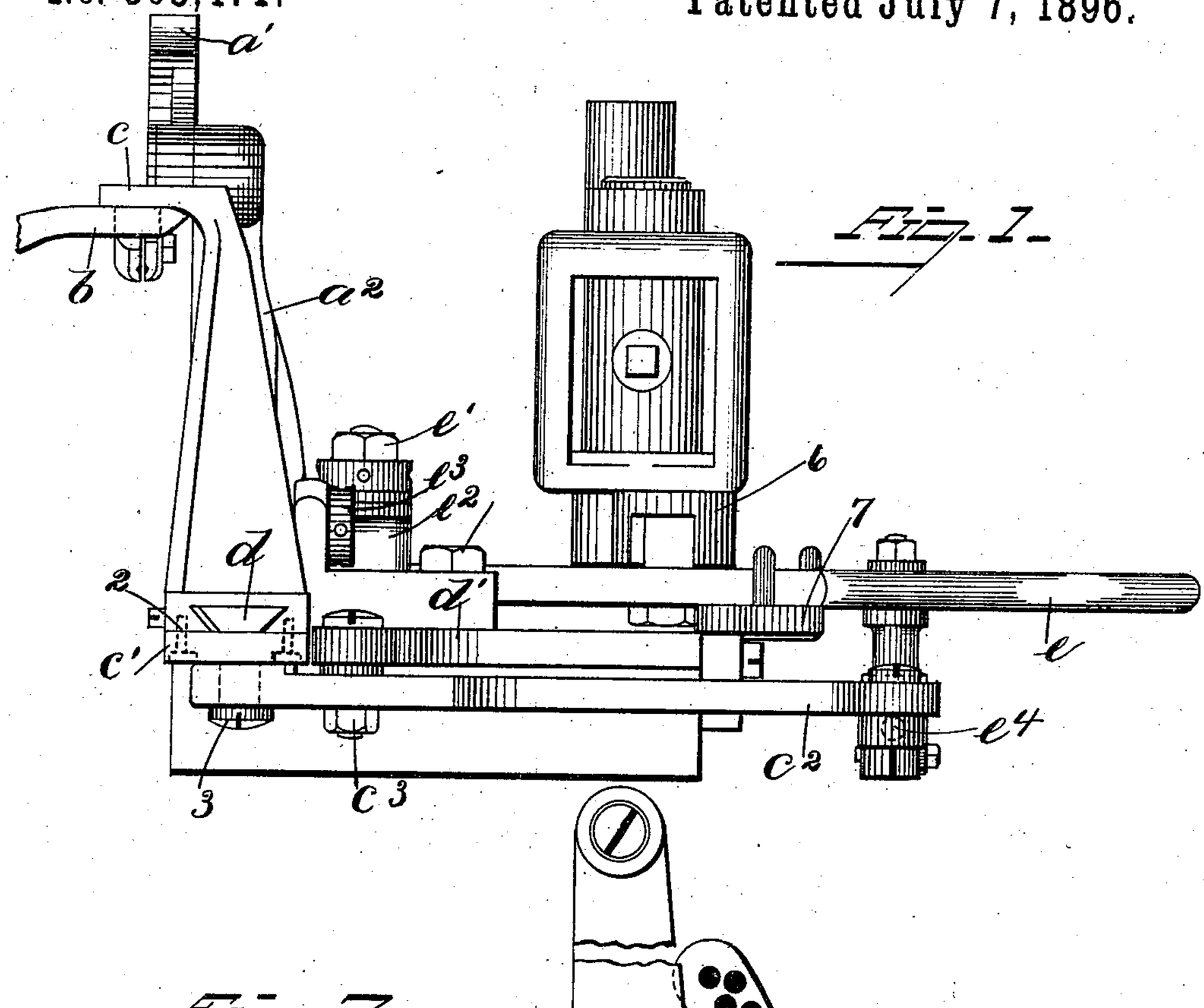
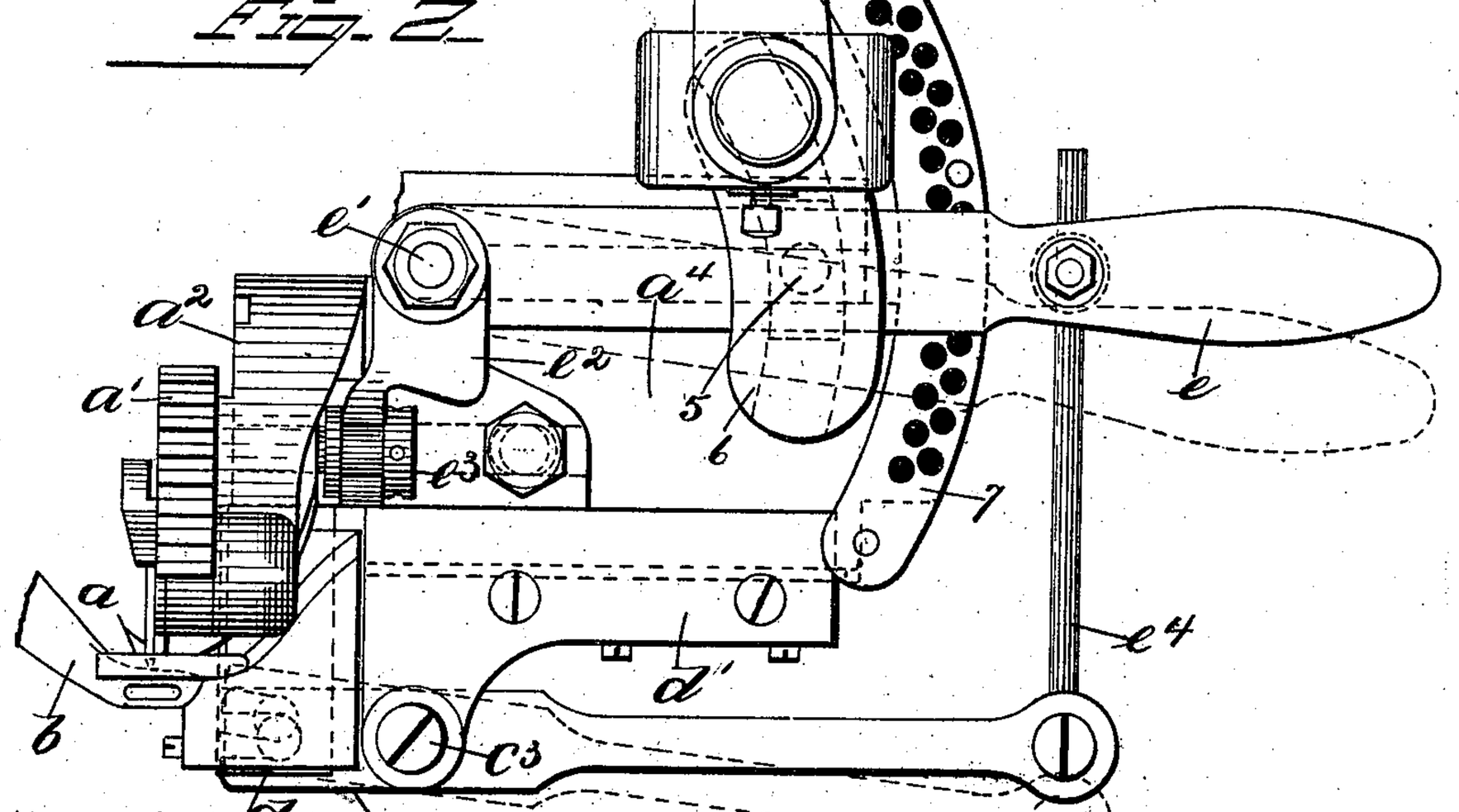


Fig. 2.



WITNESSES.
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(No Model.) 2 Sheets—Sheet 2.

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SOLE SEWING MACHINE.

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Fig. 3.

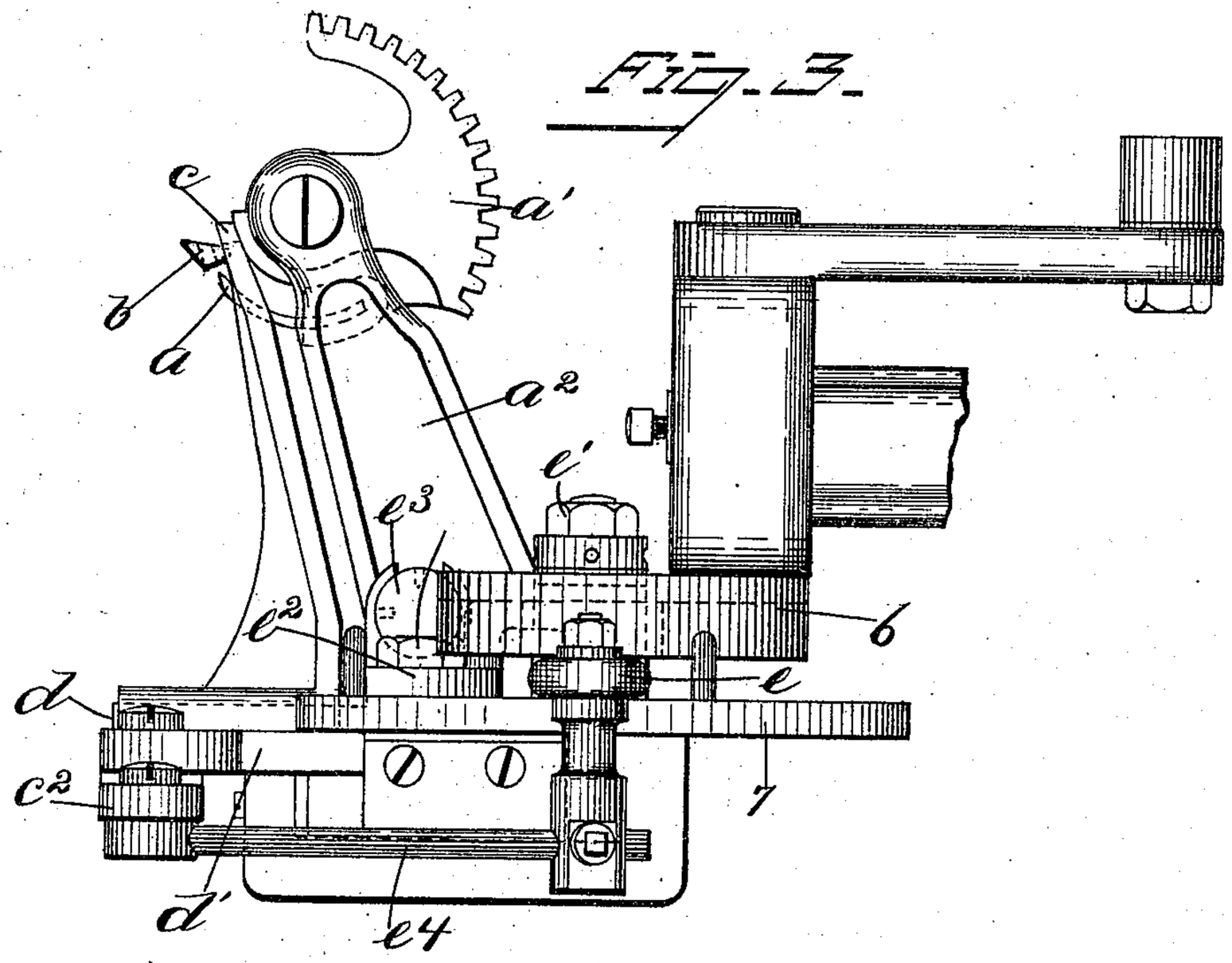


Fig. 4.

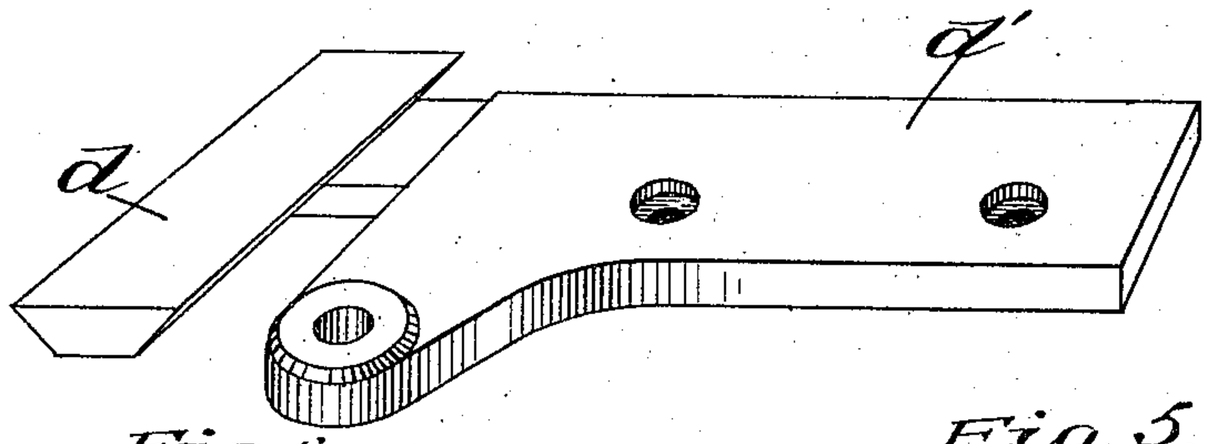


Fig. 6.

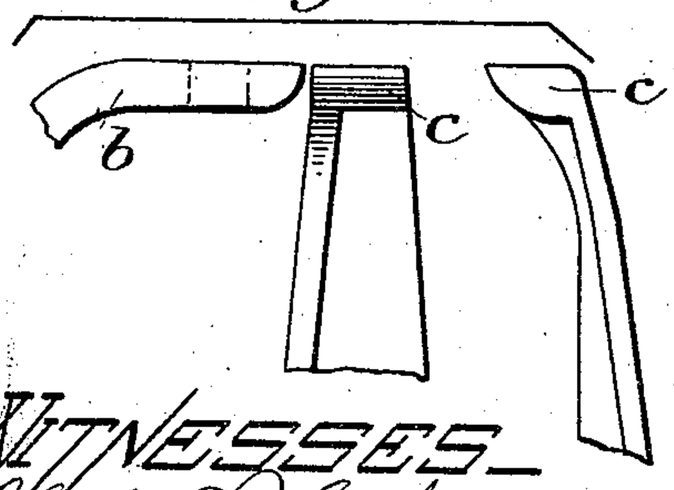
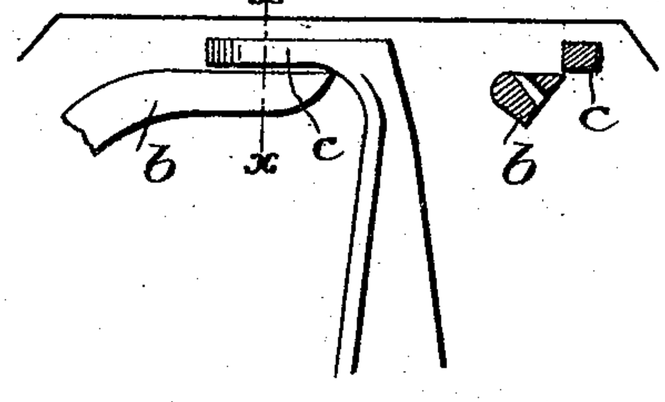


Fig. 5.



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UNITED STATES PATENT OFFICE.

ZACHARY T. FRENCH AND WILLIAM C. MEYER, OF BOSTON, MASSACHUSETTS.

SOLE-SEWING MACHINE.

SPECIFICATION forming part of Letters Patent No. 563,471, dated July 7, 1896.

Application filed May 13, 1895. Serial No. 549,061. (No model.)

To all whom it may concern:

Be it known that we, ZACHARY T. FRENCH and WILLIAM C. MEYER, of Boston, county of Suffolk, and State of Massachusetts, have invented an Improvement in Sole-Sewing Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

In some classes of boots and shoes the sole projects beyond the upper a greater distance around the fore part than along the shank portions, such boots and shoes being frequently referred to as having a "Scotch edge," and in other classes of boots and shoes the sole is made to project a greater distance beyond the upper along the outside ball portion than around the toe or inside ball portion, such peculiar shape being applicable to either a Scotch-edged sole or to a sole with an ordinary edge, although at the present time it is usually seen in boots and shoes having Scotch edges.

In sewing the soles of such boots and shoes, and particularly in welted work, it is desirable that the stitches connecting the sole and welt shall pass through said parts at a certain distance from the edge of the sole all around the fore part of the boot or shoe, regardless of the distance that the sole projects beyond the upper, while along the shank portions it is desirable that the stitches shall lie farther from the edge of the sole.

This invention has for its object to improve the construction of sole-sewing machines whereby this result may be carried out.

Our invention consists, essentially, in combination, with stitch-forming mechanism, of two guides acting to externally guide the lasted boot or shoe, one acting along the shank and the other acting around the fore part, the shank-guide holding the boot or shoe in such relation to the stitch-forming mechanism that the stitches along the shank portions will lie at a certain distance from the edge of the sole, while the fore-part guide holds the boot or shoe in such relation to the stitch-forming mechanism that the stitches around the fore part will lie nearer to, but at a certain distance from, the edge of the sole, regardless of the distance said sole projects beyond the upper.

In carrying out this invention, we find that good results are produced by employing as a shank-guide one adapted to enter the crease along the shank portions, and by employing as a fore-part guide one adapted to bear against the edge of the sole, although our invention comprehends any other form or construction of independent shank and fore-part guides when combined with stitch-forming mechanism.

The shank-guide may be held in fixed relation to the stitch-forming mechanism, while the fore-part guide may be made movable with relation to the awl and other members of the stitch-forming mechanism, and with a machine so constructed the boot or shoe is held with its shank portion bearing against the shank or crease guide while sewing at such point, and while sewing around the fore part the movable fore-part or sole-edge guide is brought into use and the boot or shoe held against such guide.

The crease-guide for the shank portions and the sole-edge guide of the fore part form a specific embodiment of our invention, and such specific forms are believed to possess many advantages. As a means of moving the fore-part guide in and out we have herein represented a hand-lever, easily accessible to the operator, and intermediate parts connecting it with the guide. In either class of work above referred to it is also desirable to lengthen the stitches along the shank portion and shorten them along or around the fore part, and so our invention comprehends means for thus lengthening and shortening the stitches when connected with the means employed for operating the fore-part guide, whereby the stitches may be lengthened along the shank portion as they penetrate the sole farther from the edge, and shortened along or around the fore part as they penetrate the sole nearer to the edge.

Our invention is herein shown as applied to the sole-sewing machine such as represented in United States Patent No. 525,047, dated August 28, 1894.

Figure 1 shows in front elevation a portion of a sole-sewing machine embodying this invention; Fig. 2, a plan view of the parts shown in Fig. 1; Fig. 3, a side view of the parts shown in Fig. 1; Fig. 4, a detail to be

referred to; Figs. 5 and 6, modifications to be referred to.

The awl *a* and its pivoted sector-carrier *a'* form a coöperative part of the stitch-forming mechanism of the sole-sewing machine represented in the patent above referred to, and as the stitch-forming mechanism itself forms no part of our present invention it is not deemed necessary to more fully illustrate it.

b represents a shank-guide, and, as shown in Figs. 1 to 3, is shaped to enter the crease, although if differently shaped it would bear against the last. (See Fig. 5.) This shank-guide *b* is also made to serve as a work support or table.

c represents a fore-part guide (shown in Figs. 1 to 3 as an upright arm) with an offset at its upper end, the abutting or acting face being shaped to bear against the edge of the sole, although it might be differently shaped to enter the crease. (See Fig. 6.)

The fore-part guide is made movable in and out with relation to the awl *a* and other members of the stitch-forming mechanism and therefore has a dovetailed recess at the lower end of its arm which receives a dovetailed portion *d*, formed on a stationary plate *d'*, which is secured to the framework.

The lower end of the fore-part guide *c*, which is herein shown as a sole-edge guide, is connected by screws 2, or otherwise, with a plate *c'*, which is loosely connected by a screw 3, or otherwise, to one end of a lever c^2, pivoted at c^3 to the plate *d'*, the opposite end of said lever extending to the right, as shown, for a short distance. By swinging this lever c^2 back and forth on its pivot c^3 the fore-part guide *c* is moved in and out, or toward and from the awl *a* and other members of the stitch-forming mechanism, (not shown,) or in and out with relation to the shank or crease guide *b*.

When sewing the boot or shoe, the shank-guide *b* enters the crease, and at such time supports the boot or shoe, as, for instance, the welt may rest on such support, and the boot or shoe is thus guided along the shank portion. At the beginning of the fore part the fore-part guide *c* is brought into operative position, as, for instance, if said guide is adapted to serve as the sole-edge guide it will be brought forward against the sole edge and thus move the boot or shoe out a short distance, so that the shank-guide no longer enters or bottoms in the crease, although the welt still rests upon it, and the boot or shoe is thus guided by the sole-edge guide around the fore part. At the beginning of the opposite shank portion the fore-part guide *c* recedes and the shank-guide is again brought into use. Thus the stitches will be formed along the shank portion at a certain distance from the edge of the sole, according to the relative distance between the acting face of the shank or crease guide and the awl and other members of the stitch-forming mechanism, while along the fore part they will be formed in parallelism with the edge of the sole and at a certain distance therefrom, depending upon the distance between the acting face of the fore-part guide and the awl and other members of the stitch-forming mechanism, or, if the fore-part guide is formed to bear against any other part of the lasted boot or shoe the stitches will lie at a certain distance from the edge of the sole, according as they are guided by such fore-part guide. To lengthen and shorten the stitches, as aforesaid, making them longer in the shank and shorter around the fore part, we have supported the awl-carrier *a'* upon an upright a^2, rising from a plate a^4, sliding laterally in ways provided for it in the frame, and a hand-lever *e* is pivoted at *e'* to the frame, having a right-angular portion e^2, which engages a circumferentially-grooved head e^3 of a stud screwed into the upright a^2, so that by moving said hand-lever the awl-carrier is moved laterally. The hand-lever has a pin 5, (see dotted lines,) which enters the groove in plate 6 and is held frictionally on a graduated plate 7, secured to the sliding plate a^4. This feeding mechanism itself is not herein claimed. The hand-lever *e*, by means of which the length of stitch is thus varied, is connected by a link e^4 with the swinging lever c^2, which is used to operate the fore-part guide, and by means of this connection the parts are simultaneously operated, the stitches being lengthened when the hand-lever *e* is moved toward the operator and the fore-part guide recedes, and shortened when the hand-lever is moved away from the operator and the fore-part guide brought into use.

We claim—

1. In a sole-sewing machine the combination of stitch-forming mechanism, and two guides acting externally upon a lasted boot or shoe, one acting to guide the boot or shoe along the shank portions, and the other acting to guide the boot or shoe around the fore part, substantially as described.

2. In a sole-sewing machine, the combination of stitch-forming mechanism, a shank-guide, and a fore-part guide normally held out of engagement with the boot or shoe, and means for moving it into engagement with the boot or shoe, whereby the same may be properly guided around the fore part, said guides both acting externally upon a lasted boot or shoe, substantially as described.

3. In a sole-sewing machine, the combination of stitch-forming mechanism, a shank-guide acting externally upon a lasted boot or shoe, and a sole-edge fore-part guide, normally held out of engagement with the boot or shoe, and means for moving it into engagement with the boot or shoe, whereby the same may be properly guided around the fore part, substantially as described.

4. In a sole-sewing machine, the combination of stitch-forming mechanism, a shank-guide acting externally upon a lasted boot or shoe, and a sole-edge fore-part guide *c*, a hand-lever and connecting mechanism be-

tween said hand-lever and sole-edge guide for moving it in and out, substantially as described.

5. In a sole-sewing machine, the combination of stitch-forming mechanism, of a crease-guide acting to externally guide a lasted boot or shoe along the shank portions, and a sole-edge guide acting to guide said boot or shoe around the fore part.

6. In a sole-sewing machine, the combination, with stitch-forming mechanism, of a shank-guide held in fixed position with relation to the stitch-forming mechanism and acting externally upon a lasted boot or shoe, and an independent fore-part guide for externally engaging the lasted boot or shoe, and moving it away from said shank-guide, and thereafter guiding the boot or shoe.

7. In a sole-sewing machine, the combination with stitch-forming mechanism, means for supporting a lasted boot or shoe in proper relation thereto, and for externally guiding it along the shank portions and a supplemental sole-edge guide movable in and out with relation to the stitch-forming mechanism, substantially as described.

8. In a sole-sewing machine, the combination with stitch-forming mechanism, a shank-guide *b* serving also as an external support for a lasted boot or shoe, and a sole-edge guide *c* moving in and out with relation to the stitch-forming mechanism, and by such movement moving the lasted boot or shoe away from the acting face of the shank-guide *b*, substantially as described.

9. In a sole-sewing machine, the combination with stitch-forming mechanism and means for holding a lasted boot and shoe and externally guiding it along the shank portions, the sole-edge guide *c* sliding in and out with relation to the stitch-forming mechanism, and the pivoted lever c^2 to which it is connected.

10. In a sole-sewing machine, the combination with stitch-forming mechanism, a shank-guide and an independent fore-part guide, both acting to externally guide a lasted boot or shoe, means for varying the length of the stitches, and an operating-lever connected with and adapted to operate conjunctively both the fore-part guide and the stitch-varying mechanism.

11. In a sole-sewing machine, the combination with stitch-forming mechanism, means for supporting a lasted boot or shoe and externally guiding it along the shank portions, a sole-edge guide movable with relation to the stitch-forming mechanism, means for varying the length of the stitches, and an operating-lever connected with and adapted to operate conjunctively both the stitch-varying mechanism and the sole-edge guide.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

ZACHARY T. FRENCH.
WILLIAM C. MEYER.

Witnesses:
B. J. NOYES,
F. H. DAVIS.