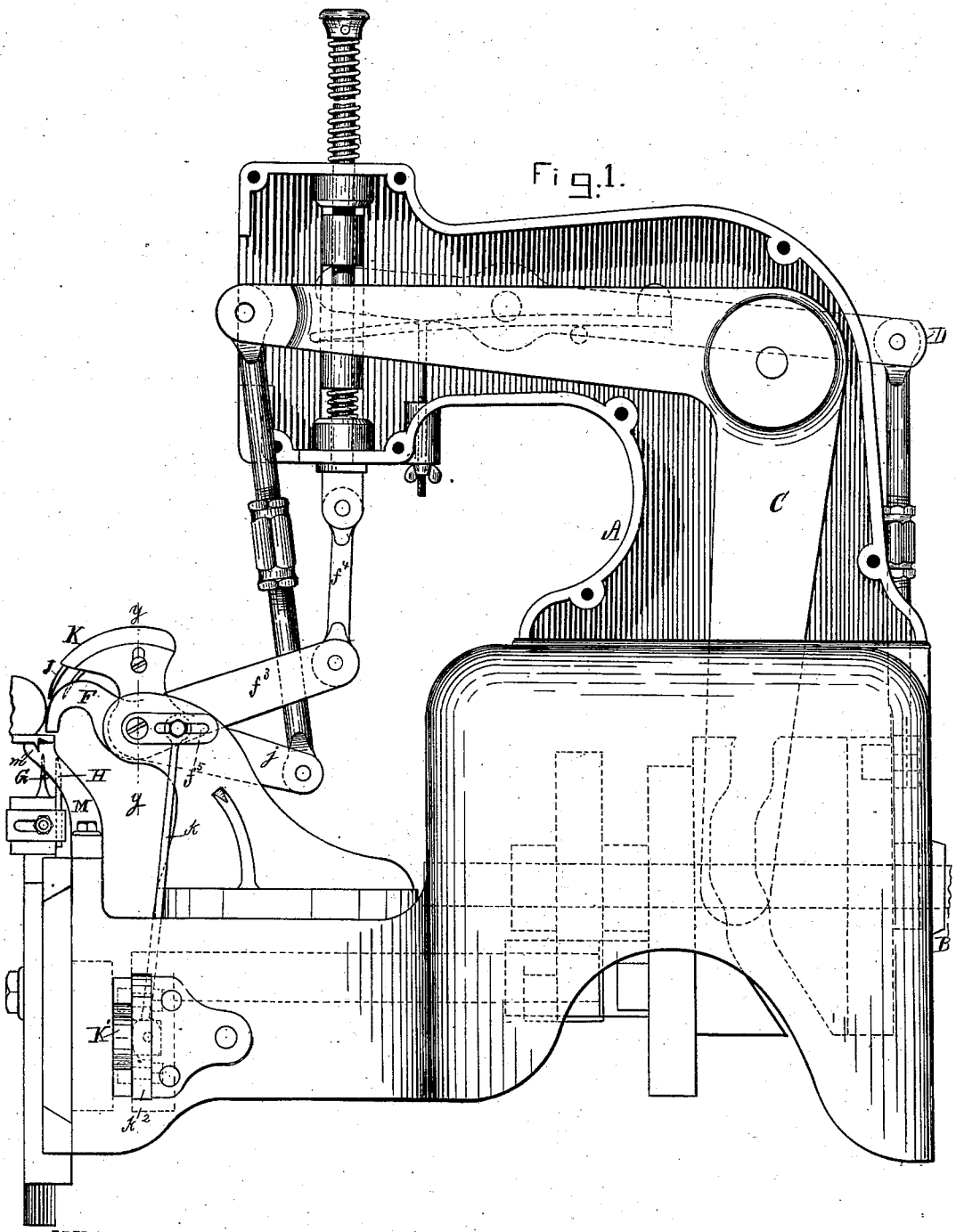
(No Model.) 2 Sheets—Sheet 1.

H. L. DREW.

MACHINE FOR PRICKING AND TRIMMING SOLES.

No. 259,829. Patented June 20, 1882.

Fig. 1.



Witnesses.

G. B. Maynadier
John R. Snow.

Inventor.

Henry L. Drew
by J. E. Maynadier
his attorney

(No Model.) 2 Sheets—Sheet 2.

H. L. DREW.

MACHINE FOR PRICKING AND TRIMMING SOLES.

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Fig. 4.

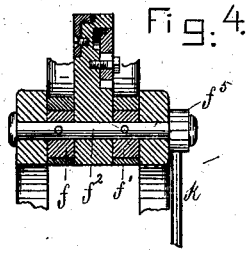

Fig. 3.

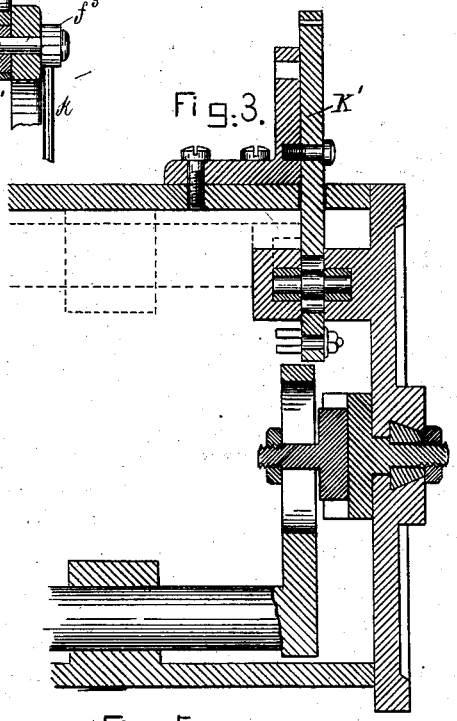

Fig. 5.

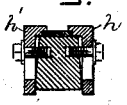

Fig. 2.

Witnesses.

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UNITED STATES PATENT OFFICE.

HENRY L. DREW, OF ROCKLAND, ASSIGNOR TO JOHN W. HART, OF WEYMOUTH, MASSACHUSETTS.

MACHINE FOR PRICKING AND TRIMMING SOLES.

SPECIFICATION forming part of Letters Patent No. 259,829, dated June 20, 1882.

Application filed April 19, 1882. (No model.)

To all whom it may concern:

Be it known that I, HENRY L. DREW, of Rockland, in the county of Plymouth and State of Massachusetts, have invented certain new and useful Improvements in Machines for Pricking and Trimming Soles, of which the following is a specification.

My invention relates to improvements in machines for pricking and trimming the soles of boots and shoes of the class in which two reciprocating awls puncture the sole from opposite sides and two reciprocating knives trim the sole parallel to the line of punctures made by the awls.

The objects of my invention are to afford facilities for the proper adjustment of the presser-foot to cause the awls to operate at the desired distance from the upper; to make the adjustment of the presser-foot coincident with and dependent upon changes in the space or distance between the punctures; to so trim the edge of the sole that it will be left very nearly as it will be when finished, and to so guide the flap or lip of the channel that it will be kept away from and not be injured by the lower awl.

In the accompanying drawings, which illustrate a pricking and trimming machine with my improvements attached, Figure 1 is a side elevation, and Fig. 2 a front elevation. Fig. 3 is a section through the front part on line *x x*, Fig. 2. Fig. 4 is a longitudinal section through the awl and cutter and presser-feet heads on line *y y*, Fig. 1. Fig. 5 is a section through the lower knife-carrier and needle-bar on line *z z*, Fig. 2.

The frame A, the main shaft B, carrying the actuating-cams, and the levers C and D are the same and have the same relative movements as similar parts of the sewing-machine known as the "New England," and give the requisite motions to the devices for holding, puncturing, and feeding the sole, as described in Letters Patent No. 250,900, granted to me December 13, 1881, for sole and welt pricking machines.

The devices for controlling the presser-foot F are substantially the same as those described in that patent, being modified in this instance to better adapt them to the improved machine.

In my present invention some new and useful improvements have been embodied, which will now be fully described.

The presser-foot F is forked, as shown in Fig. 2, so as to present two surfaces to the sole to hold it on both sides of the lower awl, G, and trimming-knife H, so as to more effectually resist their upward stroke. The upper awl, J, and upper knife, K, work between the two prongs of the forked presser-foot. These prongs are mounted on journals $f f'$, eccentrically attached to a shaft, f^2, and are united to form a lever, f^3, attached to and reciprocated by the bar f^4 and lever D in the usual way.

It will be readily seen that by turning the shaft f^2 the eccentrics $f f'$ will move the presser-foot F away from or toward the shaft f^2, on which the lever *j*, that carries the upper awl and knife, vibrates. The presser-foot serves as a guide against which the upper is held, and consequently its position will determine the distance of the punctures from the upper.

The eccentrics $f f'$ are turned to effect the adjustment of the presser-foot by means of a rod, *k*, which connects the slotted arm f^5, attached to the shaft f^2, with the lever K′, the position of which regulates the stroke of the feed and the space between the punctures. The rod *k* is adjustable in the slot in the arm f^5, so as to give greater or less movement to the eccentrics, as required. The lever K′ is connected by the rod *k* to a treadle, *k′*, operated by the foot of the workman. By the movement of this treadle the fulcrum of the feed-actuating lever is varied, thereby varying the stroke of the feed which determines the space between the punctures, and at the same instant varying the distance of the punctures from the the upper.

On the shank the stitches should be closer together and nearer to the upper than they are around the fore part of the shoe, and the workman, by a motion of his foot, can instantly make the necessary adjustments. Proper stops are secured to the arc k^2 to limit the motions of the lever K′ and prevent it from passing the desired position.

The lower knife, H, is a straight chisel-shaped blade, attached to the lower awl-bar, and having the same movements as the lower

awl. It is clamped between two plates, *h h'*, which are secured to the lower awl-bar by bolts passing through slots in the plates, as shown in Fig. 5. This arrangement allows the knife to be adjusted in regard to the awl to vary the width of the margin outside of the line of punctures. The upper knife is also adjustable in regard to its awl, both knives being always adjusted to make a clean cut. The advantage of a straight lower knife is that the sole-edge can be trimmed very nearly to the finished size, thereby saving time and labor in completing the shoe. While being pricked and trimmed the shoe is supported by the adjustable arms M M', on top of which the bottom of the outer sole rests. A channel is formed in the outer sole, the lip or flap of which serves to conceal the threads after the shoe is finished, and it is important that this lip or flap should not be punctured or otherwise marked by the lower awl. For this reason I make the arm M, from which the shoe moves toward the awls and knives, with a groove or slit, *m*, properly shaped to receive the lip of the channel, bend it back, and keep it out of the way of the lower awl. This device I find to be more efficient than the projecting piece heretofore in machines of this class formed on the arm and entering the channel, but which would not always prevent the elasticity of the lip from bringing it back in the way of the lower awl, which would often puncture or tear it. By providing the arm with a groove or slit and adjusting it close to the lower awl the lip of the channel is effectually kept out of the way and preserved from any injury.

I am aware that it is common in machines for pricking and trimming soles to provide facilities for varying the feed and for varying the distance between the presser-foot and upper awl; but I believe that I am the first to connect the feed-varying device with the presser-foot so as to cause the changes of both to be coincident and dependent on each other. Attaching the presser-foot journals eccentrically to the axle of the upper awl and knife is also new with me.

I am also aware of Patent No. 215,547, May 20, 1879, to J. S. Turner, which shows the presser-foot journaled in the short arm of a lever which is connected by its other arm to a treadle, but in no way controlled or influenced by the feed-adjusting lever or the axle of the upper awl and knife. I therefore disclaim all that is shown in that patent.

I claim as my invention—

1. In a machine for pricking and trimming soles, a presser-foot supported on journals attached eccentrically to the axle of the upper awl and knife so that by turning this axle the presser-foot will be moved toward or from the awl and knife, substantially as and for the purposes hereinbefore set forth.

2. The combination, substantially as hereinbefore set forth, of the presser-foot journaled eccentrically to the axle of the upper awl and knife and the adjustable feed-regulating lever, to which the journals of the presser-foot are connected, so that the position of the presser-foot in relation to the upper awl will be changed when the length of the feed is changed, as and for the purposes specified.

3. The combination, substantially as hereinbefore set forth, of a straight awl and a straight knife and a curved awl and a curved knife, operating to puncture the soles and trim them nearly to their finished shape, as set forth.

4. In a machine for pricking and trimming soles, a sole-rest provided with a groove or slit to receive the lip of the channel, substantially as and for the purposes specified.

HENRY L. DREW.

Witnesses:
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