

Improvement in Sewing-Machines for Boots and Shoes.

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Fig. 1.

Fig. 3.

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IMPROVEMENT IN SEWING-MACHINES FOR BOOTS AND SHOES.

Specification forming part of Letters Patent No. 114,862, dated May 16, 1871.

To all whom it may concern:

Be it known that I, NATHAN M. ROSINSKY, of the city, county, and State of New York, have invented a new and Improved Boot and Shoe Sewing Machine; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification.

This invention relates to improvements in sewing-machines for sewing boots and shoes or other articles in leather, and I will proceed to describe the details of the construction and operation, and then point out more particularly in the claims what I consider to be my invention.

Figure 1 is a sectional elevation of my improved machine. Fig. 2 is a partial section on the line *xx* of Fig. 1; and Fig. 3 is a perspective view of the holder for the boot or shoe.

Similar letters of reference indicate corresponding parts.

The last A, with the boot or shoe on it, is attached to the part B of a holder by inserting the pin C in a hole in the top, resting the instep on the bent plate D, and screwing the nut E up so as to cramp the pin in the hole and cause it to bind sufficiently to retain the last. The said part B of the holder is connected to another similar part by a pin, G, passing through it at the center, or thereabout, as shown, to which pin the said part B is hinged so that it can be turned up edgewise or over flat on part F, as shown in Fig. 1. The part F is supported on a post, H, resting on a weighted cord, K, in a case, I, by means of the links M, and jointed together in a kind of chain, for shifting the last according to its shape, the said weight and post being so adjusted that the last will be constantly pressed upward against the presser N and the feed O, for causing the feed to move the last properly, and to raise it as the low places come along to the needle—for instance, the shank between the heel and sole. As the high places approach the needle the post and last are pressed down against the weight by the attendant, or by the action of the presser and feed. The last is moved along by the feed on the jointed links, and it is guided by the operator, as required, to cause the curved lines to be sewed

to be properly presented to the needle. The hook-shaped needle P is mounted in a bar, Q, working the plate R attached to the horizontal arm T in the angle between it and post S, and descends therefrom, as shown, to a point under the outer end of arm T, fronting a rest, U, for supporting the shoe against the action of the needle, and suspended from said arm by a rod, V, to which it is adjustably attached for shifting higher or lower. The needle-bar Q is worked by a crank, W, on a wheel, X, turned by the wheel Y on the driving-shaft Z, to which crank it is connected by the bar *a* and connecting-rod *b*. The needle works through a tubular discharger, *d*, for casting off the loops of thread formed by the hook being driven through the leather, catching the thread and drawing a loop back through the hole. The said discharger is connected to a rod, *e*, arranged in a socket in plate R, to slide back and forth parallel with the bar Q, and provided with a spiral spring, *f*, for moving it back. It is forced down by the slide *g* worked by a crank, *x*, on wheel X, to which it is connected by a rod, *h*. The crank is so adjusted that the discharger moves down at the time the needle moves up, and it casts off the loop formed by the previous up movement of the needle, and freed from the needle by its down movement for again taking the thread for the next loop. The new loop is brought up through the bight of the old one, and a chain-stitch is formed. The needle takes the thread from a guide consisting of a horizontal arm, *i*, with a hole in one end, mounted on the lower end of a vertically-reciprocating and horizontally-oscillating rod, *j*, working through the supporting-block *k*, being forced down by the cam *l*, oscillated by the cam-groove *m* in the cam *l* and the crank *n*, and raised up by the spring *p*, the thread being carried from any suitable guide on the arm T down through the eye of the guide from the top. The said cam *l* is on the driving-shaft Z, and is so adjusted as to move the guide down just as the needle point is passing from the leather to the hole through the rest U to draw the thread snugly against the lower wall of the hole through said rest to keep it out of the way of the point of the needle, which might otherwise catch it on the point and split it. As the needle arrives at the end of its downward movement, and

before starting backward, the thread-guide moves forward under the needle, up in front, and backward again, to present the thread to the hook for being taken to form the loop. It is immaterial, however, whether the thread-guide be moved down to take the thread away from the needle, for it will accomplish the same by moving up, in which case it will move forward over the hook, down in front of it, and back again; but in this case the thread would be passed through the eye of the guide from the bottom. The loop, when cast off over the new one, is drawn up tight partly by the guide in moving back under or over the needle, and partly by the hook in drawing the new loop. The feed-arm O is attached to the lower end of a vertical bar, *q*, projecting downward from an arm or crank, *r*, on a vertical shaft, *s*, working vertically and horizontally in a support, *t*, being forced down by the cam *u* on shaft Z, turned horizontally by the cam-groove *w* and crank *x*, and raised up by the spring *y*. The bar *q* is made in two parts, which are beveled at the ends connected together, as indicated by the line *q'*. They are connected by a screw, *z*, passing through a vertical slot in the beveled end of the upper part, and screwing into the beveled end of the lower part, on which screw is a spring, *z'*, which holds the lower part against the upper one, and has the effect of forcing the lower part down as low as the slot in the upper part will allow, when the feed-plate O is not pressed upon the shoe-sole; but when it is so pressed on the sole the spring will be contracted and the downward movement of the lower part will be arrested, while the upper part is pressed down by the cam. But when the tension of the spring causes sufficient friction on the beveled ends of the said two parts of the bar *q* to overcome the lifting of the weighted cord K, the said beveled ends will no longer slide on each other, and the bar will become rigid, or as one continuous bar. As the tension of the spring may be varied by adjusting the screw *y*, the amount the said two parts will move on each other may be varied considerably; and as the movement of the one on the other shifts the distance of the part of the feed which acts on the sole toward or from the vertical axis on which it swings horizontally, its sweep will be correspondingly varied; hence this arrangement affords a means for varying the feed to lengthen or shorten the stitch. The said bar is connected by a crank, *r*, eccentrically to the axis of shaft *s*, so that when the latter is turned the said bar and the feed-plate O will swing forward and backward, so as to carry the last and return for a new hold. The cam *u* forces the feed-plate down on the sole just as the needle has drawn the loop through the leather; then, while the needle is out of the leather the groove *w* turns the presser forward and moves the last and shoe; and while the needle is in

the leather the feed-plate is turned back again by the cam-groove and crank for a new hold. The movements of the said two parts of the bar *q* on each other also afford a means by which the feed is accommodated to any unevenness in the surface of the sole. At the time the needle draws out, or while it is out, the presser N is down upon the sole to hold the shoe firmly on the last. This presser is a curved block mounted on a shank, *a'*, so as to bear at the point which projects laterally from the shank toward the needle, and curves downward to rest at the end on the sole. It is forced out upon the sole by the spring *b'*, and is drawn back by the slide *g*, to which it is connected by a rod, *c'*, passing through a slot in it, so as to leave the shank *a'* free for the action of the springs at the downward movement of the slide *g*, for allowing the presser to have a yielding action on the sole, to vary according to the height. The machine may be used for sewing on the welts in the manner indicated by the position of the last in Fig. 1, or it may be used for stitching the soles to the welts or insoles. In this case the part B of the holder will be turned up edgewise and the edge of the sole will be placed against the rest U, which has a groove, *a''*, in the side, against which the edge of the shoe-sole bears along the same horizontal plane in which the hole for the needle is.

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

1. The boot or shoe holder, consisting of the plates B F, connected together by the bolt G, hinged to one and passing through the other, all substantially as specified.

2. The jointed links M, boot-holder, and the vertically-adjustable post or stand, combined, substantially as specified.

3. The arrangement of the thread-guide stock *j*, grooved cam *l m*, crank *n*, and spring *p*, substantially as specified.

4. The presser N, constructed as described, arranged on the slotted shank *a'* mounted in plate K, and operated by the slide *g* and spring *b'*, substantially as specified.

5. The feed-plate carrying-bar *q*, made in two parts, having beveled ends, connected together by the screw and spring, substantially as specified.

6. The bar *q*, arm *r*, shaft *s*, spring *y*, crank *x*, and the slotted cam *u w*, all combined and arranged substantially as specified.

7. The arrangement of the needle-bar Q, presser and discharge-bar *g*, connecting-rods *h b*, cranks W X', wheel X, and the driving-wheel Y, all substantially as specified.

The above specification of my invention signed by me this 21st day of February, 1871.

NATHAN M. ROSINSKY.

Witnesses:

GEO. W. MABEE,
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