

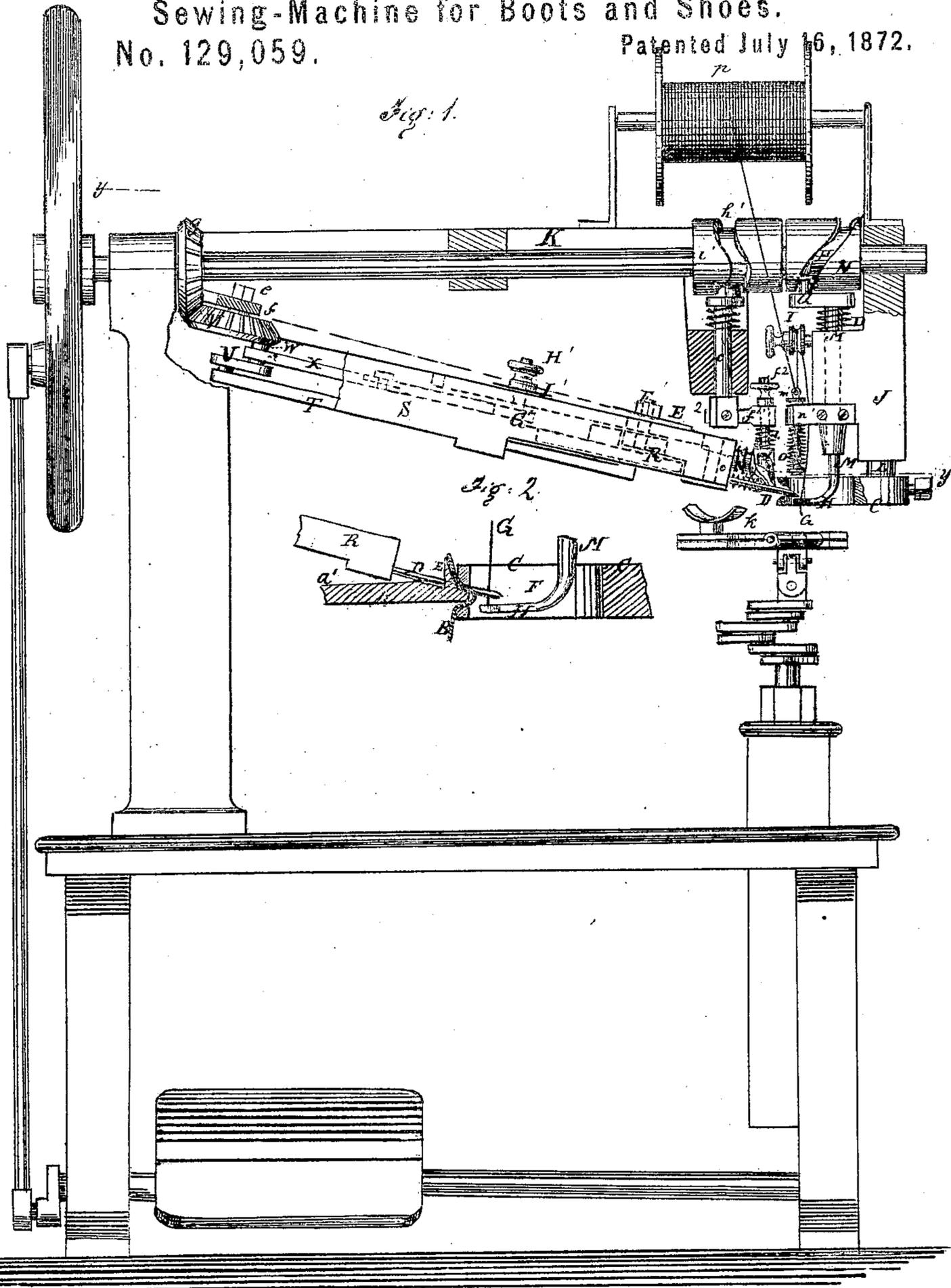
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Sewing-Machine for Boots and Shoes.

No. 129,059.

Patented July 16, 1872.

Fig. 1.



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IMPROVEMENT IN SEWING-MACHINES FOR BOOTS AND SHOES.

Specification forming part of Letters Patent No. 129,059, dated July 16, 1872.

Specification describing a new and useful Improvement in Machines for Sewing Boots and Shoes, invented by NATHAN M. ROSINSKY, of the city, county, and State of New York.

This invention relates to improvements in machines for sewing the uppers of boots and shoes to the soles; and it consists in certain arrangements of a loop-holder with the needle or awl and apparatus for operating it; also, in a novel construction of feed apparatus.

Figure 1 is partly a side elevation and partly a sectional elevation of my improved machine. Fig. 2 is a section of Fig. 3 on the line *x x*. Fig. 3 is a horizontal section on the line *y y* of Fig. 1. Fig. 4 is a section of Fig. 3 on the line *z z*. Fig. 5 is a section of Fig. 3 on the line *w w*. Fig. 6 is a section of Fig. 4 on the line *v v*. Fig. 7 is a top view of the needle or awl and the stock to which it is attached. Fig. 8 is a side elevation of Fig. 7. Fig. 9 is a top view of the loop-holder and its stock. Fig. 10 is a side elevation of Fig. 9. Fig. 11 represents the positions of the needle, loop-holder, and the loops just after the shoe has been moved along for a new stitch and when the needle is ready to go down into the leather; and Fig. 12 shows the position of the loop-holder after it has drawn back above the loop ready to go down with the needle between it and the old loop, and hold the latter away from the needle when it is drawing back with the next loop.

Similar letters of reference indicate corresponding parts.

The edge of the sole A, with the upper pasted or tacked upon it, is placed in the groove B of the block or plate C, in the manner shown in Fig. 2, so that the needle or awl D is presented to the under side of the flap E, turned up by channeling the upper side of the sole, and passes through said flap; also through the end of block C into a space, F, within the block, where it receives the thread C from a thread-carrier, H, which swings under the needle to the left and draws the thread which comes down from the guide-roller I across the needle, above the hook, so that the latter catches the thread when it moves back and pulls it through the leather to form the loop. The carrier H then rises and swings back to the right, ready for the next operation. The block C is suspended from the head J of the

arm K by a rod, L, and the shank M of the thread-carrier is mounted in a part of this head, so as to turn on its axis, and at the same time work vertically to some extent. It is forced downward by the cam N and upward by the spring D, and is turned on its axis by the cam-groove P, in which its crank-pin Q works. The needle is attached to a stock, R, arranged to slide up and down in ways in the slanting support S, and connected by the rod T with crank U, which is connected to wheel V by a pin, W, eccentric to the axis of said wheel, constituting a crank-pin for the connecting-rod X for working the loop-holder, which will be presently described. Y is the presser, consisting of a bar attached to the end of a rod, Z, arranged in the support S, at the right side of and parallel with the needle-stock, to slide up and down, being moved down by the spring *a* and up by the arm *b* attached to the loop-holder actuating slide G', and projecting through a slot, *d*, in said bar Z, in such manner that, after the presser has moved down against the shoe, the loop-holder slide-bar will be allowed to move as much further as required without obstruction by said bar; but the slot is so that said bar *b* raises the presser-bar Z just before it arrives at the upper end of its movement far enough to raise the said presser off from the shoe for it to be moved along by the feed. The wheel V is suspended by its axle *e* from the bar *f*, and is actuated by the wheel *g* on the driving-shaft *h*, which also turns the cam N, and another cam, *i*', for actuating the feed-pusher *j*.

The machine, as thus far described, also the shoe-holding apparatus shown at K, Fig. 1, are substantially the same as described in the patent granted to me May 16, 1871, No. 114,862, and are described merely for the better illustration of my present improvements, which I will now proceed to describe: A' is the loop-holder, which I now propose to use instead of the discharger shown in the aforesaid patent, which said holder consists of a short steel wire arranged on the side of the needle, having the notch or hook a little distance from it and parallel with said needle, and with its lower end bent around against the needle, and grooved or provided with a concave notch, in which the needles bear, so that they will not shift relatively to each other

or out of the plane in which they work. The stock or shank of this holder is mounted in the lower end of an arm, B', projecting downward from the lower end of a slotted plate or bent bar, C', so that it can slide lengthwise in said arm, and between the lower end of said holder; and on the arm B' is a coiled spring, D', acting on a collar, E¹, in such manner that the holder will be allowed to rest when it comes against the shoe and be pressed against it by the force of the spring only, while the plate C' may be allowed to continue its downward movement to some extent after the holder comes against the shoe. This slotted bar C' works in ways in the support S above the needle-stock R, and its connecting-rod T being confined in said ways by the plate E² and bolt F'; and it is also held upon the slide-bar G' by the screw-pin H' and a friction-plate, I', so as to be moved up and down by said bar G', which is positively connected to the driving-wheel V by the connecting-bar X and the wrist-pin W. This slide G' and the needle-stock are so connected to the driving-wheel that their movements are always opposed to each other; but it is necessary to have the loop-holder move down with the needle when it enters the leather; hence bar C' is so connected to the slide-bar G' as to be allowed to shift on it, and a lug, K', is placed on the side of the needle-stock R to come against the arm B' when the needle has arrived near the end of its movement in entering the leather, and it pushes said plate C' down a short distance in advance of its movement, with said bar G' to carry the loop-holder down at the right time. This lug then carries the said plate down till arm B' comes against the stop-pin J' in the lower end of the support S, where it remains with the loop-holder against the shoe, while the needle draws back, and until slide G' begins to go back, which begins just as the needle has arrived at the upper end of its movement. Then slide G', with said plate C', and the loop-holder, go back until said loop-holder passes above the bight of the loop of thread left by the needle. Then the lug K' strikes arm B' again and moves the loop-holder down alongside of the needle, and between it and said loop, to protect it from the hook when the needle draws back with the new loop. The old loop, behind or at the right of the loop-holder, is then drawn up as the needle rises with the new one, and the stitch is completed. After the needle has drawn a loop upward, and at the moment it is ready to come down again, the shoe is moved along to the left, so that the point of the needle is kept in the old loop while forming the new one, and the old one is cast off or drawn up taut over the point of the loop-holder, which, as before stated, prevents it from being engaged by the hook when coming back with the new loop. In Fig. 11, *a'* represents the sole; *b'*, the loop after the shoe has been fed along for a new stitch, and the needle is represented in the uppermost position, just ready to begin its down

movement, and the loop-holder ready to begin its up movement for drawing above the old loop to come down again behind the needle and said old loop. Fig. 12 shows the needle a little further down and the loop-holder up above the old loop, ready to be brought down by lug K' in the bight of the loop between it and the needle. The support S for the needle and the loop-holder is designed to have the same inclination as that of the bottom of the channel formed in the sole, so that the needle will run parallel with said bottom in entering the leather, the sole being held in a horizontal plane, or nearly so.

The feeding device *j* consists of a blunt-pointed, crooked pushing-pawl, as shown in the drawing, and it is fastened in the lower end of a vertical rod, *e'*, suspended from a horizontal arm, *f*¹, mounted on the vertical cranked rod *g'*, which is actuated by the cam-groove *h'* in a cam, *i'*, in the shaft *h*. The horizontal arm *f*¹ is bolted to the lower end of the cranked rod *g'* through a slot, *j'*, and the bolt is provided with a thumb-nut, by which the said arm can be quickly fastened and unfastened to allow of shifting the feed-pawl back from the shoe when it is finished, to facilitate the removal of it and the application of a new one, and then to shift it up again to the working position; also to shift the throw of the pawl to make long or short stitches. The cam-groove is suitably shaped to impart the necessary oscillatory movements to the pawl, and it is arranged in the cam in such relation to the devices for working the needle and loop-holder as to cause the shoe to feed when the said needle and loop-holder are drawn back from the shoe. The feed-pawl is required to rise and fall to some extent to alter the pressure of the point on the leather; therefore the vertical rod *e'* is arranged to rise and fall in the arm *f*¹, a screw-nut, *f*², being used to raise it, and a spring, *l'*, is arranged to keep it down. Said rod *e'* is square in the part passing through arm *f*¹ to prevent being turned. The presser *y* is also a crooked, blunt-pointed instrument, and it is arranged to bear against the shoe in the channel as near to the needle as it can without interference with it, and the feed-pawl also works in the channel immediately behind the presser.

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

1. The feeding-pawl *j*, rod *e'*, adjustable slotted arm *f*, and oscillating cranked rod *g'*, combined as and for the purposes set forth.
2. The combination, with the slide G', of the plate C', the loop-holder A', spring D', collar E¹, and the fixed stop-pin J', all constructed and operating substantially as specified.

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