No. 24,182. PATENTED MAY 24, 1859.

M. WESSON.

MACHINE FOR CHANNELING AND EDGING SOLES OF BOOTS OR SHOES.

Fig. 1.

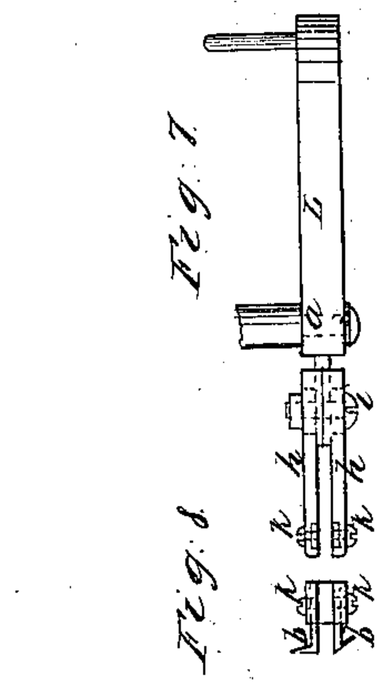


Fig. 2.

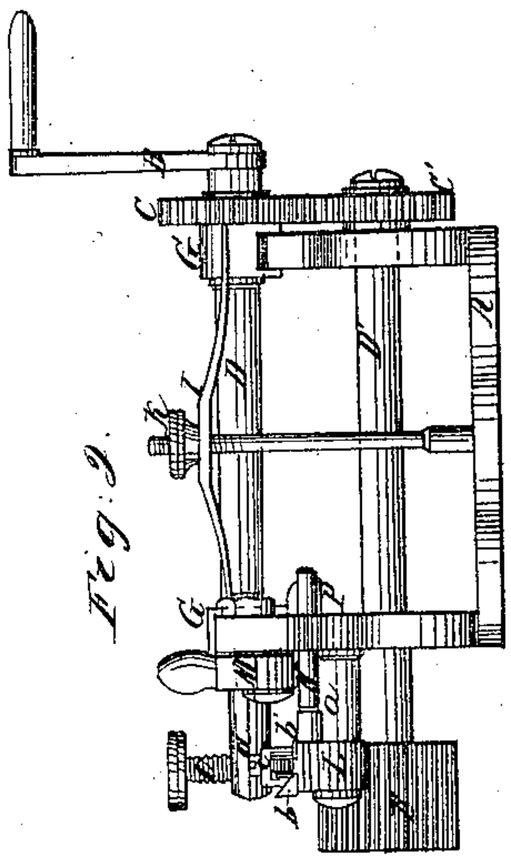


Fig. 3.

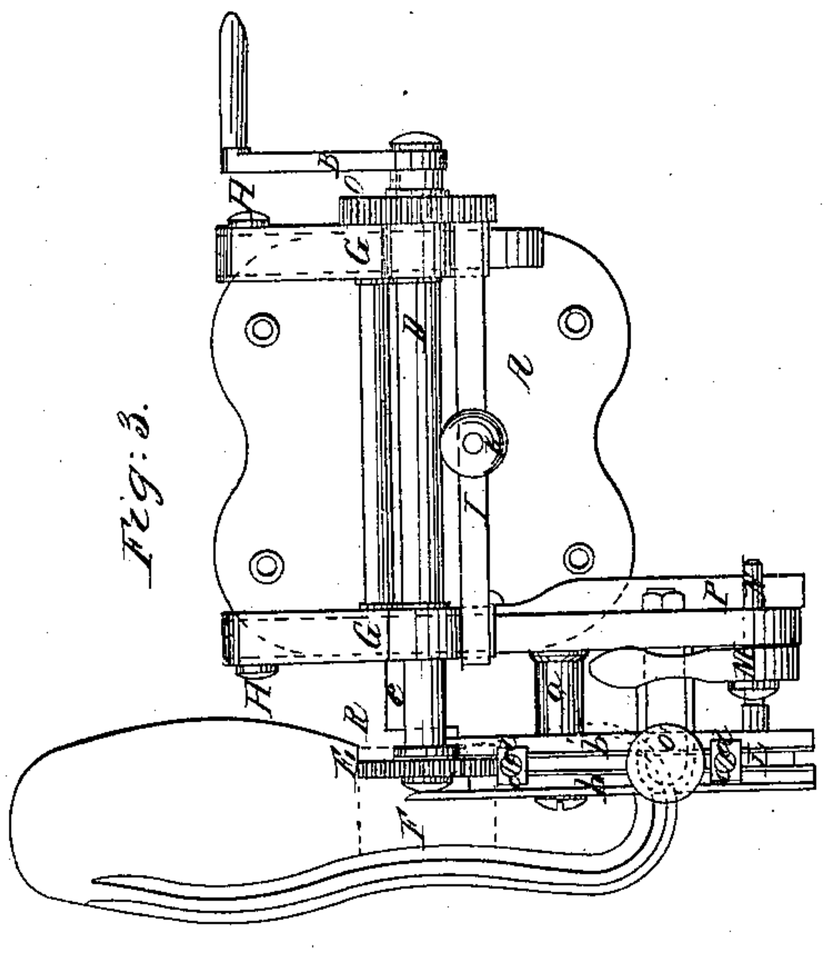


Fig. 4.

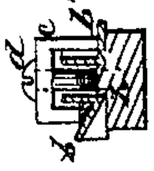


Fig. 5.

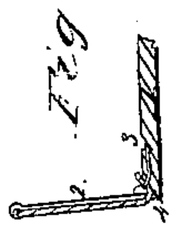


Fig. 6.

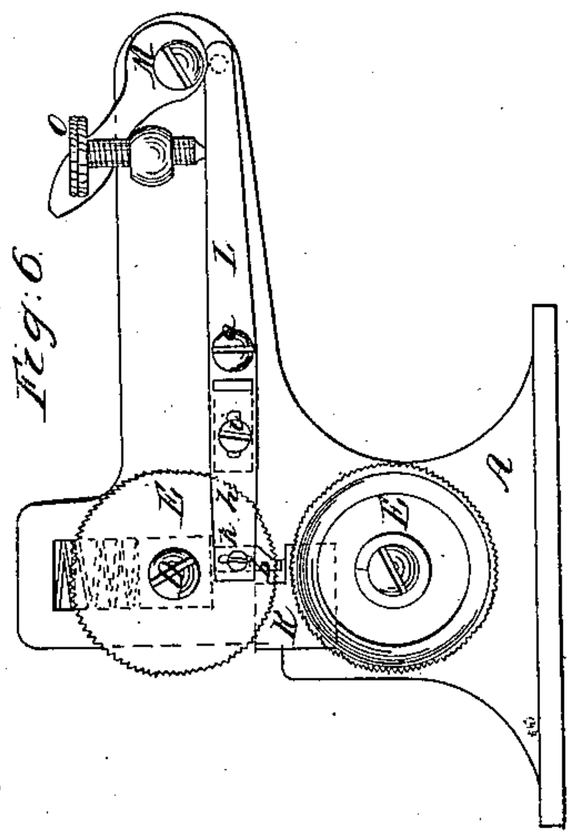
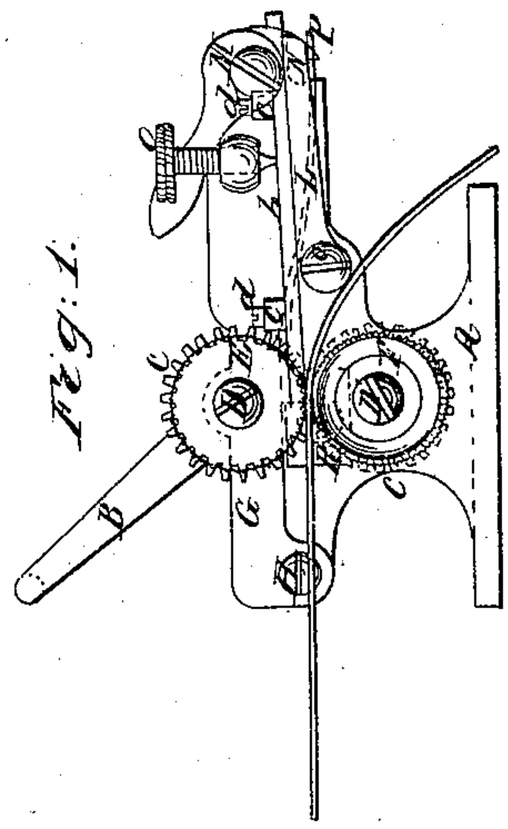


Fig. 7.



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UNITED STATES PATENT OFFICE.

MARTIN WESSON, OF SPRINGFIELD, MASSACHUSETTS, ASSIGNOR TO HIMSELF AND D. B. WESSON, OF SAME PLACE.

MACHINE FOR CHANNELING AND EDGING SOLES OF BOOTS AND SHOES.

Specification forming part of Letters Patent No. 24,182, dated May 24, 1859; Reissued September 2, 1873, No. 5,561.

To all whom it may concern:

Be it known that I, MARTIN WESSON, of Springfield, in the county of Hampden and Commonwealth of Massachusetts, have invented a new and useful Machine for Channeling and Edging the Soles of Boots and Shoes; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is an end elevation. Fig. 2 is a side elevation; Fig. 3, a plan; Fig. 4, a section of the knives and knife holder, on a larger scale. Fig. 5 is a cross section of a portion of a shoe sole with the upper attached. Fig. 6 is an end view of a machine comprising substantially the same parts but arranged in a little different manner. Fig. 7 is a top view and Fig. 8 an end view of the knife holder and knives as used in the machine represented in Fig. 6.

The same letters of reference indicate corresponding parts in each of the several figures.

The object of this invention is to produce a cheap and convenient machine for cutting the grooves in the soles of boots and shoes, for the purpose of sewing the uppers to the soles, as seen in Fig. 5, in which 1 is a portion of a sole; 2, the upper; 3, the channel or inner groove in the sole; 4, the edge groove for the reception of the upper. At the present time this operation is almost entirely performed by hand, which is a slow and tedious operation, and altogether very unsatisfactory, for in forming the edge groove with a knife it can, at best, be only a common bevel, and that of a very imperfect kind, for at times the knife will cut deeper than at other times, thereby producing an edge of very unequal thickness, whereas with this machine a corner of any desirable form is taken out leaving the edge of exactly the same thickness at every point. Then for the channel or inner groove this machine has even more advantages than for the edge, for when the channel is formed by hand, it is simply a gash cut in the sole obliquely, and as nearly of an equal depth as is convenient, but having no guide the depth must be very unequal, and it often happens that this cut extends so nearly through the sole that it wears through at that place long before the rest of the shoe is gone. Now by this machine, a three cornered strip is taken entirely out leaving it clear work in stitching, and also leaving the leather of exactly an equal thickness under the channel.

This machine does not attempt to cut out the sole, for that can be done better by striking out with dies as is at present practiced, and therefore by not attempting too much it is able to perform its duties with the greatest freedom and accuracy.

To enable those skilled in the art to fully understand my invention I will proceed to describe the construction and operation of the machine.

I will first describe the arrangement illustrated in Figs. 1, 2, 3, and 4, leaving 6, 7, and 8 for after consideration. A, is a cast iron bed or frame to support the other parts. B, is a crank by means of which motion is communicated to the gears C, C′, shafts D, D′, and grooved feed rollers E, F. The shaft D, is hung in the bearings G, G′, which are hinged at H, H′, and pressed down by the spring I, which is adjustable by the thumb screw K. L, is an adjustable knife holder (seen in section in Fig. 4,) pivoted at *a*, and holding two knives *b*, *b′*. *c*, *c′*, are two stirrups resting on the knives *b*, *b′*, and holding them in their proper place by means of the two screws *d*, *d′*, which enter the holder L. M, is a hand eccentric operating on pin N, in holder L. O, is a thumb screw operating on the knife holder L, and by means of which (screw) the depth of the cut in the sole is regulated. P, is a spring operating upon the underside of the pin N, to hold the knife holder in contact with the screw O and thereby keeping the knives in the leather. R, is a guide supported by the standard *e*, and serving to guide the sole as it is being operated upon by the feed rollers and knives. Figs. 1, and 3, represent a sole as being operated upon.

The operation of the machine is as follows: When about to enter a sole, first revolve the eccentric M, thereby depressing the back end of knife holder L, and consequently elevating the cutting end of the knives. Then insert the end of the sole between the feed rolls, keeping the edge pressed against the guide R. Now by turning the crank B, the two feed rolls are re-

volved simultaneously and the sole carried forward. As soon as the sole has fairly entered, turn back the eccentric M, to the position shown in the drawing, which allows the knives to come in contact with the leather, and to enter it to a certain depth, which (depth) is regulated by the screw O. Now with the right hand turn the crank and guide the sole with the left, being careful to keep the edge in contact with the guide R, which is very easily done as it seems to follow round with very little help. By loosening the screws *d*, *d'*, the knives can be adjusted to any position by sliding them forward or back on the holder L.

I will now proceed to describe the arrangement illustrated in Figs. 6, 7, 8. In this arrangement the shaft D, on which is the feed roll E, instead of being hung in bearings G, G', vibrating on H, H', and pressed down by spring I, is held at one or both ends in sliding boxes, and the pressure produced by spiral springs, thereby doing away with the hinge H, H'. Also the knife holder L, is constructed differently. As in the first arrangement L, is a lever pivoted at *a*, but instead of providing this lever with two long knives cutting at the ends, and adjustable by sliding on the holder L, I provide the holder with two sliding pieces *h*, *h'*, which are slotted and fastened to lever L, by screw *i*. Into these sliding pieces I put upright knives (as seen in Fig. 8,) which knives are held in place by screws *k*, *k'*, working in slots in the sliding pieces *h*, *h'*, thus by unscrewing *i'*, the knives may be adjusted horizontally, and secured in place again by tightening the same, and by means of the screws *k*, *k*, and their slots, the knives may be adjusted vertically.

Having now fully described my invention, what I claim as new and desire to secure by Letters Patent is—

1. The combination of the feed rolls E, F, adjustable knives *b*, *b'*, and the guide R, when constructed and operating substantially in the manner and for the purpose above set forth.

2. The combination of lever L, sliding pieces *h*, *h'*, and knives *b*, *b'*, when arranged and operating as described, and forming a knife holding arrangement for the purpose specified.

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