(No Model.) 2 Sheets—Sheet 1.

J. G. ROSS.

Heel Trimming Machine.

No. 242,559. Patented June 7, 1881.

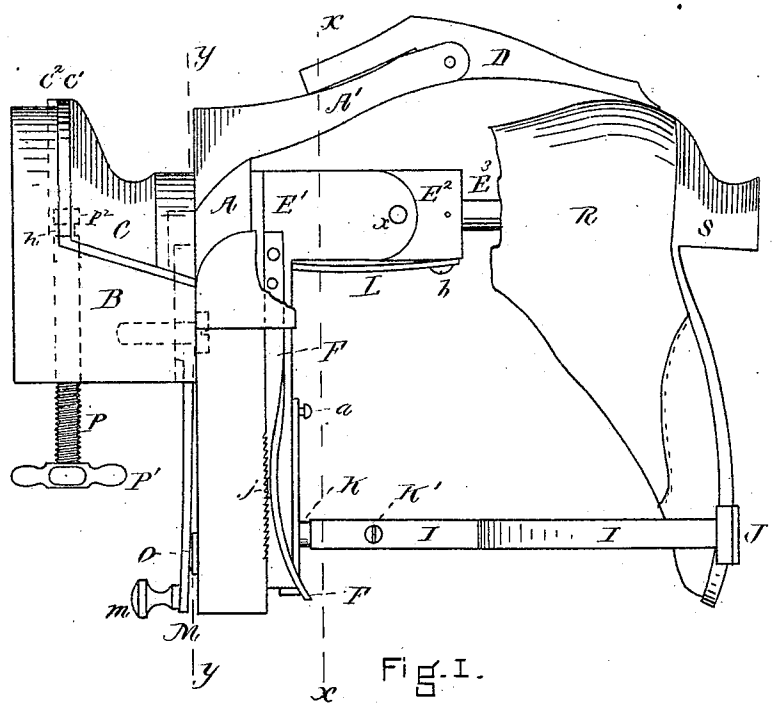

Fig. 1.

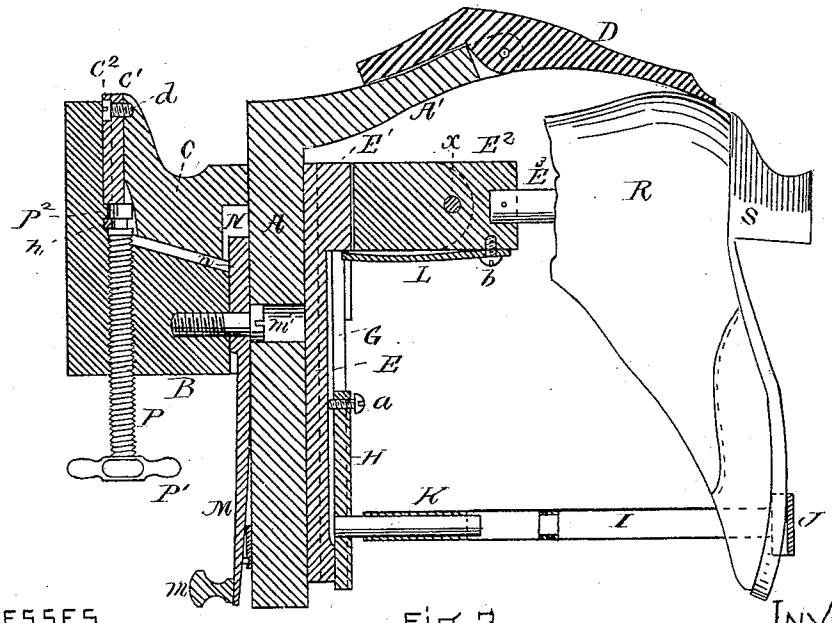

Fig. 2.

WITNESSES

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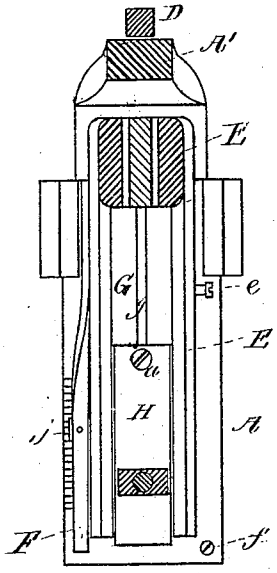

Fig. 3

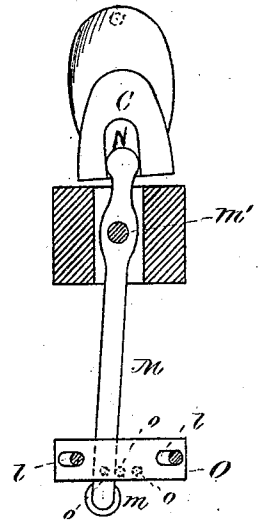

Fig. 4

WITNESSES

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UNITED STATES PATENT OFFICE.

JOHN G. ROSS, OF LYNN, MASSACHUSETTS.

HEEL-TRIMMING MACHINE.

SPECIFICATION forming part of Letters Patent No. 242,559, dated June 7, 1881.

Application filed October 28, 1880. (No model.)

To all whom it may concern:

Be it known that I, JOHN G. ROSS, of Lynn, in the county of Essex and State of Massachusetts, have invented new and useful Improvements in Heel-Trimming Machines, of which the following is a specification.

My invention relates to improvements in mechanism for rigidly holding in line a boot or shoe while the heel is being trimmed, for preserving the line when change is made from rights to lefts or lefts to rights, as a right or left last is used in trimming the heel, and for increasing or diminishing the size of a heel, shortening or lengthening the same without changing the former, and at the same time preserving the relative form or shape of the heel; and the same are improvements upon that part of the machine for which Letters Patent were granted to me of date April 6, 1880, to which reference may be had; and the object of my invention is, by the aid of such improvements as are herein described, to form or make heels of boots and shoes of different sizes exact and perfect in shape or form without changing the former or pattern-heel. I attain this object by the mechanism illustrated in the accompanying drawings, which are made a part of this specification, in which—

Figure 1 is a side elevation of that part of the machine in which said improvements are located, with the boot or shoe held in position. Fig. 2 is a vertical section of said part in the same position as represented in Fig. 1, through the central part thereof. Fig. 3 is a horizontal section of Fig. 1 in line *x x*, and Fig. 4 is a horizontal section of Fig. 1 in line *y y*.

Similar letters of reference in all of the figures indicate like parts.

The letter A represents a part of the frame of the machine; A′, another part of said frame, which bears a lever; B, another part of said frame, which bears the former or pattern-heel; C, former or pattern-heel; D, a lever or heel-holder; E, the horizontal part of a slide, having an upright part, E′, which bears a movable upright standard, E″, pivoted upon a bolt, *x*; E″, a movable upright standard; E‴, a standard or bolt which is inserted into the upright standard E″, and which carries the last; G, a groove in which the slide H moves back and forth. H is a slide moving in the said groove G, and which slide carries a pronged toe-holder. I is a pronged toe-holder of the boot or shoe. J is a cross-bar attached to the prongs of the holder, across the toe part of the boot or shoe. K is a bolt, which joins the toe-holder I and the slide H, which is adjustable by a set-screw, K′. L is a spring, attached to the standard E″ by a screw, *b*. M is a switch-lever, having a button, *m*, and is pivoted on a part of the frame A by a screw or bolt, *m′*, and its farther end, *n*, fits into a recess, N, in the former or pattern-heel. N is a recess in the pattern-heel C. O is a sliding bar, fastened to the side of the frame A by screws *l l*, and having indentations or holes *o o o*, into which a peg fits. P is a screw passing through a part of the frame B, and which fits into a recess in the former C, and is turned by a thumb-piece, P′, and leaving a shoulder, P″, at the other extremity, which shoulder fits into a recess in said former C, and said screw P also runs in a furrow partly in the frame B. C′ is a plate attached, by a screw, *d*, to the former, having on its side next the frame a guide, (not shown in the drawings,) which runs in a groove, C″, in said frame. F is a spring attached to one side of the slide E, having a catch fastened to it, so that it fastens into a ratchet, *j*, on the frame.

Having thus indicated the different parts of this part of the machine, I will now explain the use of the improvements, and their action and operation.

In the patent of April 6, 1880, above referred to, I found that in trimming heels of different sizes I was obliged to use as many different formers or heel-patterns as sizes, in order to make them shapely, because the knives cut to an equal depth all around the circular part of the heel. If the heel was to be larger than the given former, the heel would be a long heel in proportion to the width, because, if the knives cut a sixteenth all around the heel, or the circular part thereof, the width would be an eighth and the length a sixteenth. To obviate the difficulty I have the reciprocating screw P, which is turned by the thumb-piece P′, (see Figs. 1 and 2,) the end or shoulder of which, P″, fits into a recess in the plate C′, which, being fastened to the former C by the screw *d*, acts upon said former and plate, as shown in said figures.

For example, to make a heel a size larger than the given heel S, turn the screw P, pushing out the former C and plate C′. While the knives trim a sixteenth from the sides of the heel they will trim an eighth from the back of the heel, and thus preserve the relative shape of the heel.

It is of the utmost importance that the heel S and the former C should be kept in exact line, in order that the heel may be evenly trimmed. The boot must therefore be held rigidly in place. When the boot is on a right last the heel cannot be in the same position as when on a left last or a straight last. To keep the boot rigidly in place it is first lasted, the bolt E‴ is forced into a socket in the last, and rests in a socket at its other end in the movable standard E″, which is supported on a pivotal pin, *x*, by the upright parts E′ of the slide E. The slide E runs in a truncated groove in the frame A, (not shown in the drawings,) and has a guide fitting into said groove, which guide is a part of said slide E and keeps it in place. By raising the spring F the slide E can be drawn out to take off the boot, and when the heel is to be trimmed it is pushed back against the lever or heel-holder D and is securely fastened. To keep the toe of the boot in exact position I have another slide, H, which runs in a truncated groove, G, (see Fig. 3,) which groove has a furrow, *g*, in which runs the end of the adjusting-screw *a*, to regulate and adjust said slide. To this slide is attached by a bolt, K, a forked toe-holder. Said toe-holder is adjustable by the screw K′. A prong goes on each side of the toe part of the boot, and a bar, J, connects the ends of the prongs and goes over the sole of the toe part of the boot. When the boot is lasted the slide H is pushed into the groove G and the holder I is pushed back as far as it will go over the toe part of the boot, and then the slide is secured by the screw *a*. The boot is thus rigidly made fast for trimming.

If the boot is upon a straight last, the former and the boot-heel are in exact line; but if the last is a right or left last the heel will be thrown out of line with the former. To obviate this I have made a switch-lever, M, (shown in Figs. 1, 2, and 4.) This lever is made fast to a part of the frame by a pin or bolt, *m′*, (see Fig. 4,) and the end of said lever plays in a recess, N, in the former C. By moving said lever to the right or left, as the last is right or left, the former is adjusted so that the heel of the boot and the former are kept in exact line.

I claim—

1. In a heel-trimming machine, the combination of the reciprocating screw P, the former C, and the plate C′, substantially as shown, and for the purpose described.

2. The combination of the switch-lever M, the bar O, the bolt *m′*, and the former C, provided with a recess, N, substantially as shown, and for the purpose described.

3. The combination of the spring F and a ratchet, *j*, the slide E, having substantially the described mechanism for holding the last, the slide H, the pronged toe-holder I, provided substantially with the described mechanism for holding the toe part of the boot, the horn A′, and the heel-holder D, substantially as shown, and for the purpose described.

4. The combination of the spring L, the upright E′, and the movable standard E″, whereby the toe part of the boot is pressed up against the bar J and the sole and heel of the boot are brought into line with the heel-pattern, as shown, and for the purpose described.

Witnesses: JOHN G. ROSS.
J. L. NEWTON,
M. A. ADAMS.