



J. W. LEFFERTS.  
Shoe-Sole Machine.

No. 165,595.

Patented July 13, 1875.

FIG. IV

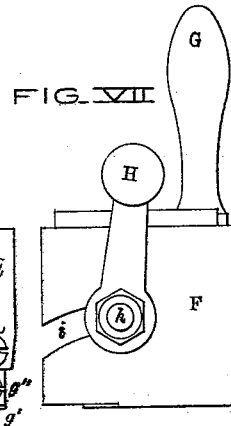
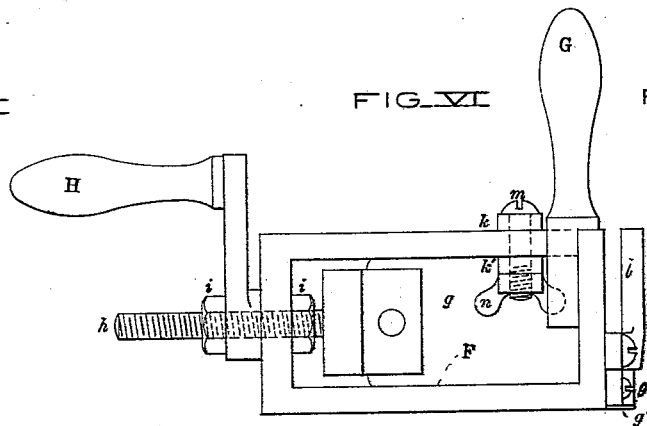
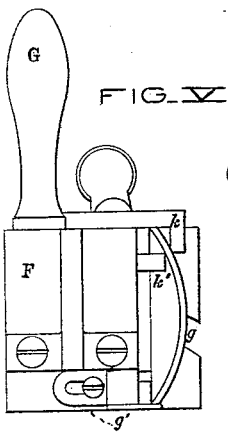
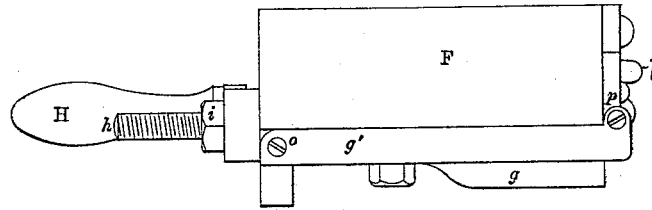
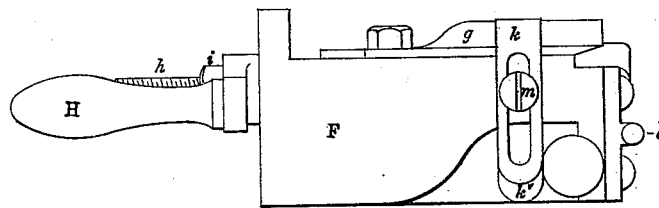


FIG. VIII



WITNESSES.

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# UNITED STATES PATENT OFFICE.

JOHN W. LEFFERTS, OF BALTIMORE, MARYLAND, ASSIGNOR OF ONE-HALF HIS RIGHT TO JOHN H. BAER, OF SAME PLACE.

## IMPROVEMENT IN SHOE-SOLE MACHINES.

Specification forming part of Letters Patent No. 165,595, dated July 13, 1875; application filed June 9, 1875.

*To all whom it may concern:*

Be it known that I, JOHN W. LEFFERTS, of the city of Baltimore and State of Maryland, have invented certain new and useful Improvements in Shoe-Machines, of which the following is a specification; and I do hereby declare that in the same is contained a full, clear, and exact description of my said invention, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

My invention relates to a machine for trimming and finishing the edges of soles and heels of shoes, in which cutters of novel construction are actuated in a forward direction by means of straps drawn by the foot of the operator, through the agency of a hinged treadle, or by mechanism adapted to be operated by steam or other power. The machine is also furnished with means for cutting the breasts of the heels, and clamps and adjustable holding devices, whereby the shoe to be operated upon is held securely during the several operations to which it is subjected, as hereinafter fully described.

In the further description of my invention which follows, due reference must be had to the accompanying drawing, forming a part of this specification, and in which—

Figure 1 is a front elevation of my improved machine, and Fig. 2 a side view of the same. Fig. 3 is a plan of the invention, showing a shoe clamped therein, for the purpose of having the sides or edges of the sole thereof trimmed. Figs. 4, 5, 6, 7, and 8 are views of one of the cutters used in trimming the edges of the heel.

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

A is the table, the top of which is formed of the rigid cross-piece *a*, extending between the frames *b*. To the cross-piece *a* is secured or attached the adjustable rest *c*, adapted to receive the heel of the shoe when the toe thereof is being operated upon by a cutter constructed for the purpose, but which is not described in the present invention. B is a clamp, formed of sliding boards or plates, resting within grooves in the frame of the table. Portions of the edges of the boards forming the clamp are cut away,

to allow of the insertion in the clamp of the last to which the shoe is fastened. The clamp is closed upon the last by means of a screw, *d*. A board, C, corresponding in height to the clamp aforesaid, is held between the said clamp and the rigid top of the table, and forms the base of the breast-cutting mechanism. The breast-cutter consists of a plate, D, held to the base C by means of a bolt, *e*, which passes through a slot, *e'*, in the said base. To this plate is pivoted an overhanging frame, E, which, when the breast-cutter is in use, is placed longitudinally of the machine, but when not in use is turned as shown in the drawing. A knife, *f*, is pivoted to the under side of the overhanging frame, and is provided with a handle, which, in operating the knife, is elevated and depressed within a slot in the outer end of the frame. The form of outline of the cutting-edge of the knife is such as to cause in the shearing operation a lateral as well as a descending motion, which facilitates the cutting, and gives a smooth surface to the leather. A sliding stop, *f'*, regulates the distance moved by the knife in a downward direction, and prevents injury to the shank of the shoe. Of the cutter before alluded to as being operated by means of straps, but one is shown in the drawing, and that suitable for trimming one side of the heel. This cutter, with the mechanism of operating it, may be described as follows: F is a hollow block, to one side of which is attached a curved knife, *g*, which is made adjustable longitudinally of it, and the projection of the knife beyond or within the edge of the block regulated by means of the screw-bolt *h* and nuts *i*. The lateral adjustment of the knife to give the angle or inclination of the heel is effected by moving its upper edge to the desired position, and securing it by means of the slides *k* and *k'*, which are slotted and held together and to the upper plate of the block by the bolt *m* and thumb-nut *n*. The lower edge of the knife *g* rests upon, or is brought into contact with, a guiding-plate, *g'*, formed of a thin piece of metal, hinged at *o*. The guiding-plate is also susceptible of adjustment, the outer end thereof being pivoted to a slotted slide, *p*, held by the set-screw *g''*, the inner end being pivoted to the block F. The

extended or outer edge of the guiding-plate enters the depression existing between the heel and the upper, and causes uniformity of action of the cutter. The forward movement of the cutter, or that in which the work is done, is caused by the tightening or drawing of the strap *s* by means of a treadle, to the front or swinging end of which the said strap is connected. The strap passes over pulleys *t* and *u*, hung in brackets extending from the frame A, and is attached to a hook, *l*, on the forward end of the block F. In place of the treadle for operating the strap *s*, a crank, pulley, or other device may be used, and actuated by the operator or by steam. The cutter used for trimming the edges of the sole is not shown or described in this specification, but is operated in like manner to the cutter herein described.

In the description of the several operations to which a shoe is subjected by means of my invention which follows, parts not hereinbefore alluded to will be described, and their uses fully set forth. In trimming the heel the shoe is held securely in the clamp B, and the knife of the heel-cutter brought into contact with the side of the heel. The operator then forces the treadle down with his foot, which causes the advance of the cutter. The exact direction of the cutter, or that necessary to give the desired shape to the heel, is governed by the operator, who guides the cutter by means of the handles G H. The handle H may be placed in any required position, and secured thereat by the lock-nuts *i*, which regulate the longitudinal position of the knife in the block F of the cutter, as aforesaid. While the shoe is clamped in the above position the overhanging frame of the breast-cutting device is moved over the heel, and the knife forced down, cutting the breast at one operation. The shoe is then removed from the clamp, and placed upon the rigid cross-piece

*a* of the table, with the toe portion thereof resting against the T-stop *c'*, which is adjustable in height. The edge of the sole is then trimmed by any tool adapted for the purpose, and which is secured to a strap leading to the treadle, in like manner to the one described as attached to the heel-cutter. After the completion of the sides of the sole the end or toe part thereof is trimmed, the heel resting during this operation within the adjustable support or rest *c*.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a machine for trimming the edges of soles and heels of shoes, the combination of a cutter, adapted to slide upon the top thereof, and strap *s*, operated by means of a treadle, substantially as described.

2. The rigid cross-piece *a*, in combination with the adjustable rest *c* and T-stop *c*, substantially as described.

3. The overhanging frame E and plate D, bolted together, as shown, combined with the knife *f* and sliding stop *f'*, the whole being adjustably connected to the base C of the table, substantially as and for the purposes specified.

4. In the heel-cutter, the combination of the block F, adjustable knife *g*, and hook *l*, substantially as specified.

5. The knife *g* of the heel-cutter, made adjustable by means of the stops *k k'*, bolt *h*, lock-nuts *i*, and curved slot *i*, substantially as set forth.

In testimony whereof I have hereunto subscribed my name this 8th day of June, in the year of our Lord 1875.

JOHN W. LEFFERTS.

Witnesses:

A. BALLAUF,  
C. F. DIETERLY.