

C. C. BALLOU.
Heel Trimming Machines.

No. 142,980.

Patented September 23, 1873.

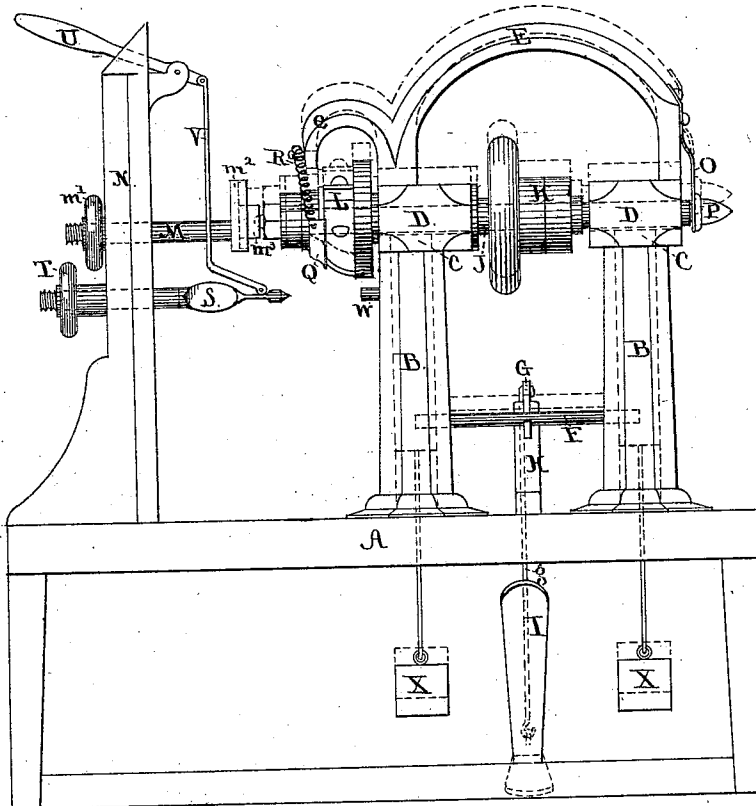


Fig. 1.

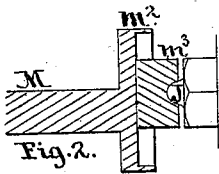


Fig. 2.

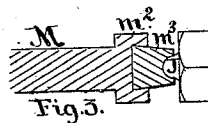


Fig. 3.

Witnesses.

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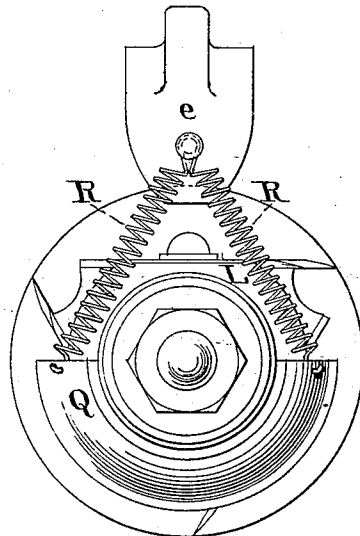


Fig. 4.

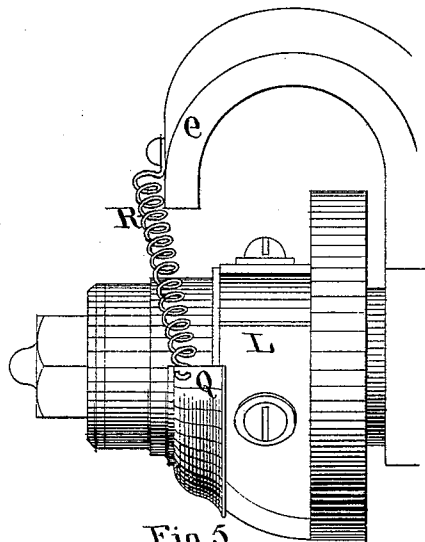


Fig. 5.

Witnesses.

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UNITED STATES PATENT OFFICE.

CYRUS C. BALLOU, OF ALBANY, NEW YORK, ASSIGNOR TO EAST NEW YORK BOOT, SHOE, AND LEATHER MANUFACTURING COMPANY, OF NEW YORK.

IMPROVEMENT IN HEEL-TRIMMING MACHINES.

Specification forming part of Letters Patent No. **142,980**, dated September 23, 1873; application filed July 11, 1873.

To all whom it may concern:

Be it known that I, CYRUS C. BALLOU, of the city and county of Albany and State of New York, have invented certain Improvements in Heel-Trimming Machines, of which the following is a full and exact description, reference being had to the accompanying drawings making a part of this specification, in which—

Figure 1 is a side elevation of the machine. Figs. 2 and 3 are detached sectional views of the sliding block which forms the bearing for the front end of the shaft. Fig. 4 is an enlarged front view of the cutter-head and guide, and Fig. 5 a side view of the same.

My invention consists of the mechanism constructed and arranged in the manner herein described.

As shown in the drawing, A is the table or bed-plate of the machine. B B are pedestals, erected upon the table A to receive and guide the slides C C attached to the shaft-bearings D D. An arch-piece, E, connects together the bearings D D, so as to retain them at their proper distance, and maintain them in perfect line during the changes of elevation of the shaft. F is a cross-bar, which passes through slotted holes in the pedestals B B, and connects the lower ends of the slides C C. One end of the lever G, which has its fulcrum on the standard H, engages under the cross-bar F, the other end of it being connected, by means of the rod g, to the treadle I. J is the shaft, which revolves in the bearings D D. Attached to it are pulleys K for receiving a driving-belt, whereby the requisite motion is imparted to it. L is a cutter-head (which may be made in any of the common and well-known forms) attached to the shaft J. M is an adjusting-screw, which passes through the standard N, and is adjusted by means of the hand-wheel m^1 , which has a screw-thread in its center fitting the screw. m^2 is a head attached to the screw M, in which a dovetailed slot is made for receiving the sliding block m^3 , which forms a bearing for the front end of the shaft J. By means of the adjusting-screw M the shaft J can be adjusted endwise, so as to bring the cutter-head L into its proper position for trim-

ming different heights of heels. The spring O, attached to the arch-piece E, has a bearing, P, for the back end of the shaft attached to it, and by its resisting pressure the shaft is forced forward, so as to keep it in close contact with the sliding block m^3 . A guide, Q, is arranged in front of the cutter-head L, the standing rim of which enters the crease formed by the junction of the counter and heel of the shoe, and guides the heel to the cutters. This guide is constructed so as to allow the shaft J to revolve freely in it; and it may be made in the form of an entire circular disk; but, preferably, I make them of a semicircular form, as shown, for the purpose of obtaining free access to the knives of the cutter-head, while adjusting them, without removing the guide from its position. The guide Q is maintained in its proper position, and kept from revolving, by means of the springs R R, which are attached to a bracket, e, of the arch-piece E. These springs allow the guide sufficient motion to overcome any tendency of the shoes to adhere to the guide, a very slight movement being all that is necessary for this purpose. S is a centering-spring, the adjusting-screw of which passes through the standard N, and is adjusted to the required position by the hand-wheel T, which has a screw-thread cut in its center to fit the screw. The point of the centering-spring may be raised or depressed by means of the lever U, which is connected to the spring by the rod V. W is a centering-stud, attached to one of the pedestals for the purpose of receiving the heel-pattern plate. X X are weights attached to the slides C C, for obtaining additional resistance, when required, to prevent the shaft J from rising while the machine is in operation.

It will readily be seen that my machine differs from those generally used in these essential features: First, by arranging the shaft carrying the cutter-head upon sliding bearings, and centering the shoe upon centers placed at a fixed height from the table of the machine, I entirely reverse the operation by carrying the cutter-head to the heel instead of carrying the heel to the cutter-head. Second, by substituting the semicircular guide Q

for the roller commonly used I am enabled to adjust the knives upon the cutter-head without removing the guide from its place.

To insert a shoe into the machine the bearings D D and their attached parts are raised, by means of the treadle I, into the position indicated by the dotted lines in Fig. 1. The sliding block m^3 , rising in the slotted head m^2 , allows the shaft J to be elevated without obstruction. While in this position the driving-belt of the machine may become slackened; but, as the cutter-head is not then in position for performing its work, this loosening of the belt is not objectionable, even if carried to such a degree as to entirely stop the motion of the shaft J.

The shoe is centered by placing the pattern-plate of the heel, in the usual manner, on the centering-stud W, and adjusting the centering-spring S to the required length by means of the hand-wheel T. The shaft J is then adjusted endwise by means of the adjusting-screw M, so as to bring the standing rim of the guide Q directly over the crease formed between the counter and heel of the shoe, when the shaft J may be lowered into its proper position, thereby tightening up the belt and bringing the cutter-head L into action to cut away the surplus leather of the heel.

My improvements may be embodied in a machine having its shaft-bearings D D arranged to slide the cutter-head to and from the shoe in a horizontal direction, instead of vertically, by simply laying the machine upon its side and suspending the weights X X, by means of cords running over pulleys, in such a manner as to draw the cutter-head into contact with the heels to be trimmed; but preferably I construct them as hereinbefore shown and described.

I claim as my invention—

1. The combination of the shaft J, having a cutter-head, L, attached thereto, with the sliding bearings D D, substantially as and for the purpose set forth.

2. The combination of the shaft J and sliding bearings D D with the adjusting-screw M, having a slotted head, m^2 , and sliding block, m^3 , as and for the purpose specified.

3. The guide Q, constructed and arranged to operate as herein described, in combination with the springs R R, as and for the purpose set forth.

CYRUS C. BALLOU.

Witnesses:

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A. F. Low.