

CHARLES H. HELMS.  
Machine for Polishing Heels of Boots and Shoes.  
No. 127,234. Patented May 28, 1872.

Fig. 1.

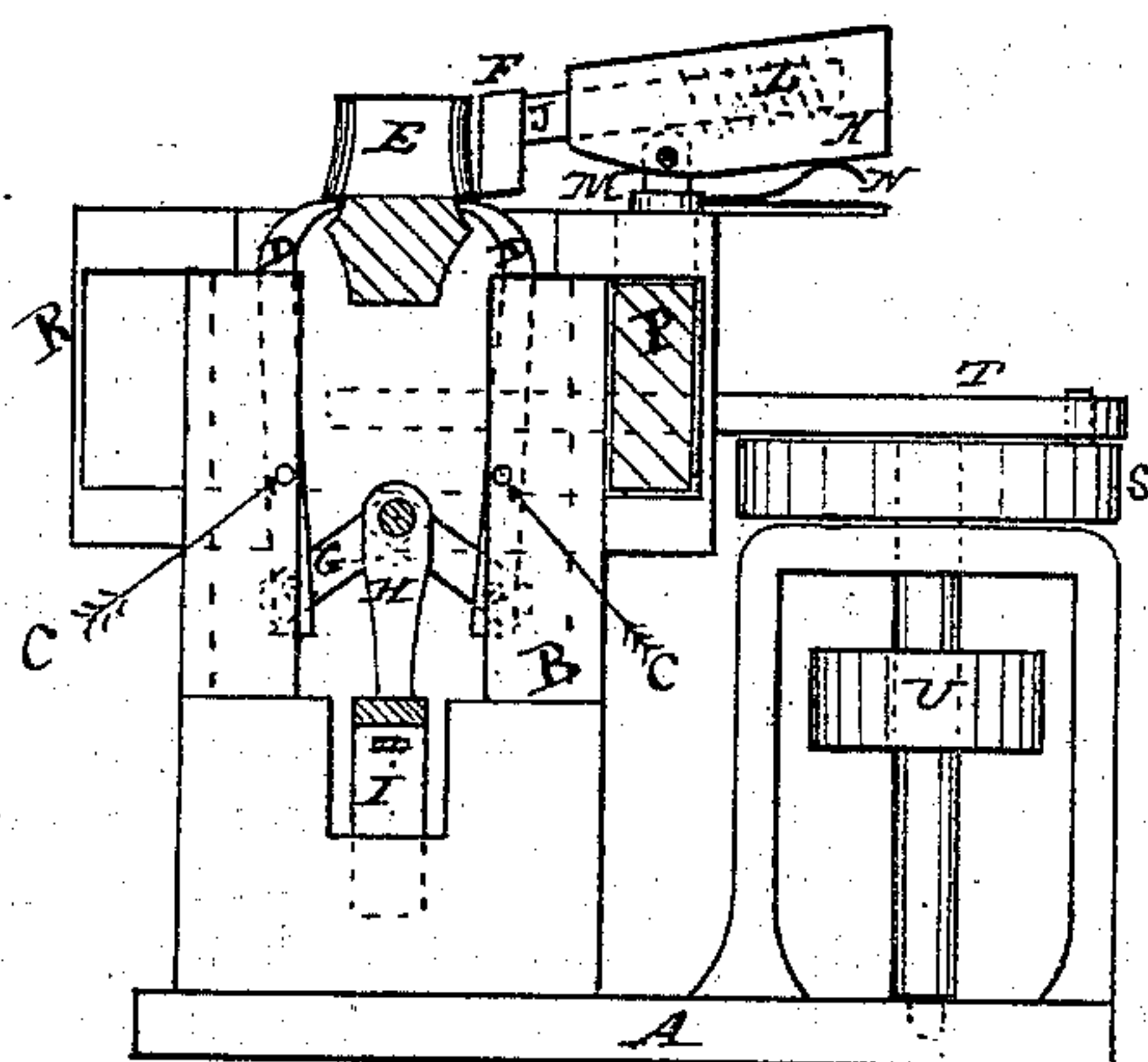


Fig. 2.

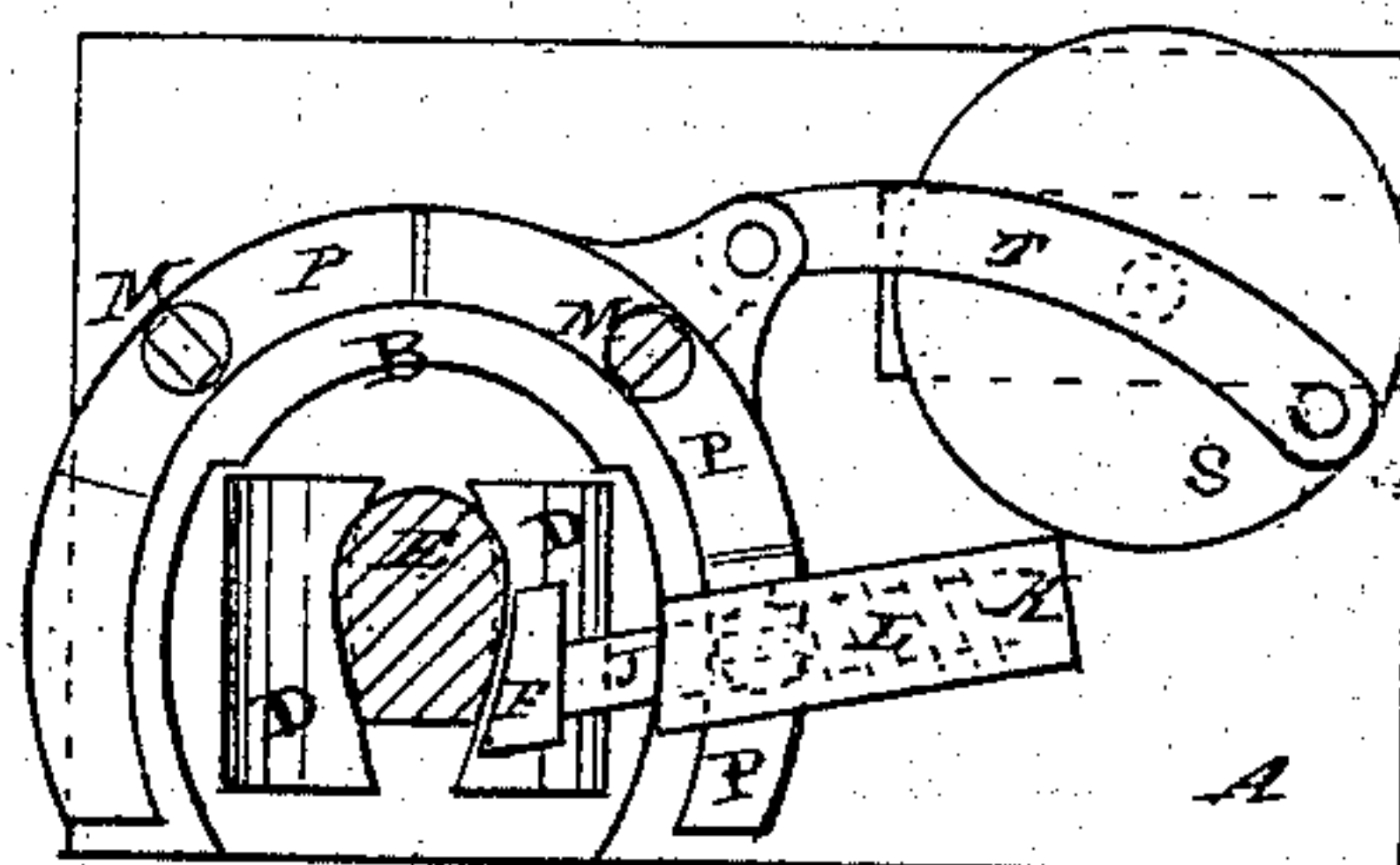
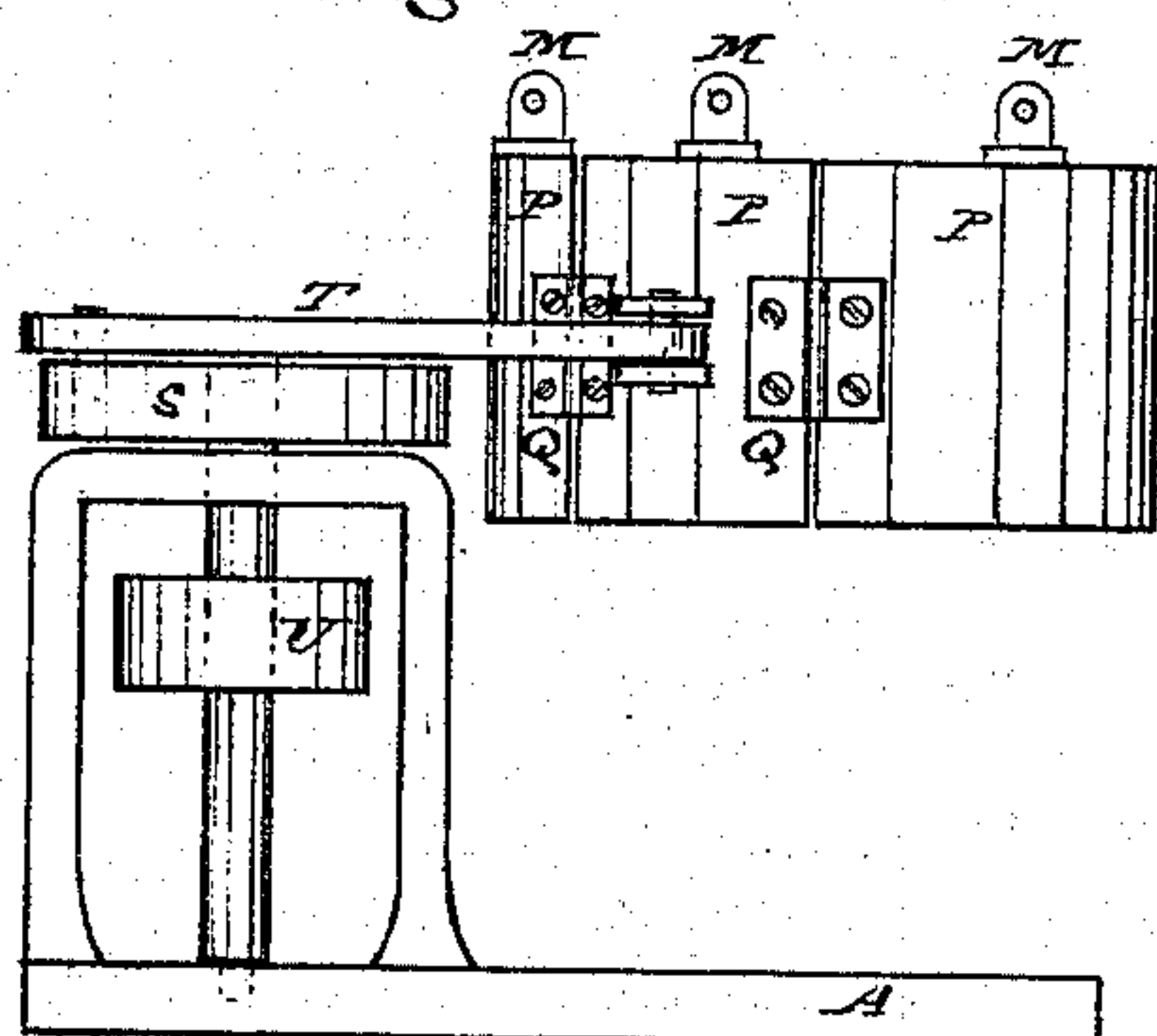


Fig. 3.



Witnesses  
Charles L. Barrick  
Richd. L. Finch

Inventor  
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# UNITED STATES PATENT OFFICE.

CHARLES H. HELMS, OF POUGHKEEPSIE, NEW YORK.

IMPROVEMENT IN MACHINES FOR POLISHING HEELS OF BOOTS AND SHOES.

Specification forming part of Letters Patent No. 127,234, dated May 28, 1872.

## SPECIFICATION.

*To all whom it may concern:*

Be it known that I, CHARLES H. HELMS, of Poughkeepsie, Dutchess county, and State of New York, have invented certain new and useful Improvements in Machines for Polishing the Heels of Boots and Shoes; and I do hereby declare that the following is a full description of the same.

The nature of my invention consists, first, in the method of holding the heel of the boot or shoe in a horizontal plane by means of the combination of a foot-lever clamping-jack with a horizontally-reciprocating circular heel-polisher frame or table; second, in combining with the horizontal circular heel-polisher table a linked reciprocating heel-polisher carrier, whereby the three circular sides of the heel may be simultaneously acted upon by the polishers at each half revolution of the propelling-wheel for operating the polishers; third, the method of combining the elastic polishers with the reciprocating holders thereof by means of a tilting prop and tilting spring, whereby the polisher may have a self-adjustable elastic motion up and down to act upon all points of the heel, in conjunction with the elastic horizontal motion of the polisher.

But, to describe my invention more particularly, I will refer to the accompanying drawing forming a part of this specification, the same letters of reference wherever they occur referring to like parts.

Figure 1 is a vertical front view of the machine. Fig. 2 is a plan view of the same. Fig. 3 is a detached view of the triune-hinged reciprocating heel-polisher carriers and propelling-wheel or pulley.

Letter A is the bed of the machine, and B the frame for supporting the working parts of the machine. Within the core or hollow parts of this frame are secured, on center pins C, two cheeks or jaws of a clamping-jack, D, having their upper ends come up to about a level with the table or top of the frame, so as to clamp or bite the shank of the boot or shoe E just below the heel, and thus allow the polishers F to act freely upon all parts thereof in their rotation around it. For the purpose of operating the jaws of the clamp their lower ends are joined together by a toggle-joint, G, and thence by a connecting-rod, H, to a foot-lever, I, projecting

outward beyond the face of the frame so as to afford easy facility for the attendant on the machine to open and close the clamp by his foot while using his hands to adjust the boot or shoe therein. By this arrangement of the clamps the boot or shoe is held in a horizontal plane, thus exposing all of the curved sides of the heels thereof for the three polishers F simultaneously to act thereon. These polishers are made with a tang, J, which work in a box, K, and made elastic by means of a spiral spring, L, secured on their ends within the box. This box is adjusted upon a tilting prop, M, by a center pin. The object of this adjustment is to permit the polisher to have an up-and-down motion, as well as a horizontal motion, to adapt itself to all parts of the heel. For the purpose of keeping the box always tilted forward a tilting-spring, N, is arranged upon the polisher-carriers P so as to extend back to the outer ends of the box, and thus tilt it up with an elastic presser to keep the polisher down upon the heel. The tilting props M are made permanently fixed upon the upper edges of the polisher-carriers P. These carriers consist of three segments of an oblong circle, and joined together by hinges Q. The object of this method of constructing the carriers is to permit them to follow the oblong curvature of the heel within the circular guide-way or box R secured to the back of the frame B. This circular guide-way or box is intended to conform in curvature, as nearly as practicable to be applicable to all kinds of heels of boots and shoes, to the oblong curvature of the heel. To make the polisher-carriers reciprocate freely in the guide-way they are therefore made in three sections, each of which is hinged together, and carries a polisher. By this means three polishers are acting on the sides of the heel, and by the vibration of them its sides will be polished with great rapidity, and, at the same time, requiring but a boy's labor to adjust the boot or shoe in the jaws of the clamp, and hold it firmly and solidly therein by the simple imposition of his weight on the foot-lever while under the action of the polishers. For the purpose of reciprocating the polishers on the heel of the boot or shoe the polisher-carriers are connected with a crank or fly-wheel, S, by means of a connecting-rod, T; and thus, by means of a pulley, U, on the crank-shaft, and a belt communicating with any suit-

able driving-power, the polishers will be reciprocated around the curved sides of the heel to polish it.

Having now described my invention, I will proceed to set forth what I claim and desire to secure by Letters Patent of the United States—

1. I claim the reciprocating circular heel-polisher herein described, in combination with the clamping-jack D, substantially as set forth.

2. I also claim, in combination with the horizontally-reciprocating heel-polisher F, the

linked reciprocating polisher-carriers P, composed of three parts jointed together by hinges Q, as set forth.

3. I also claim, in combination with the horizontally-reciprocating circular polishers F and polisher-carriers P, the tilting props M and tilting springs N, all arranged and operating substantially as set forth.

CHARLES H. HELMS.

Witnesses:

CHARLES L. BARRITT,  
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