G. C. HAWKINS.

Machines for Burnishing Heels, &c.

No. 145,943. Patented Dec. 30, 1873.

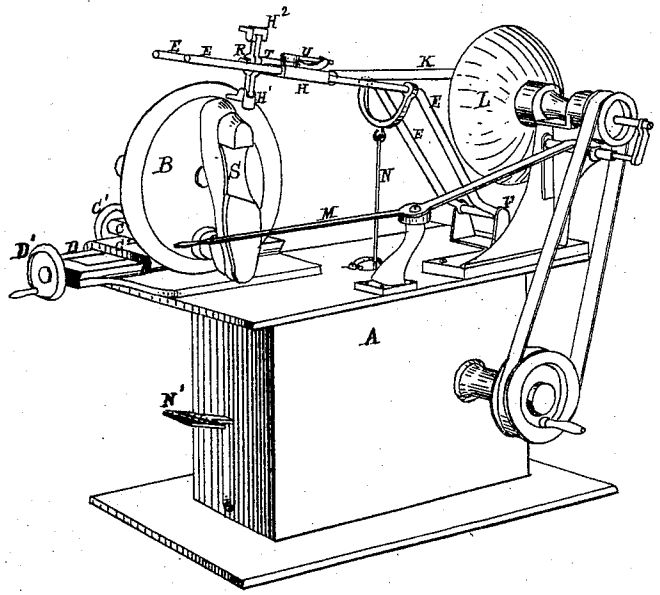

FIG. 1.

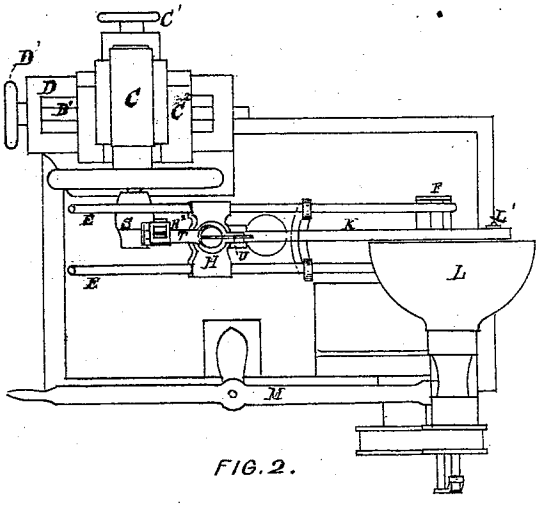

FIG. 2.

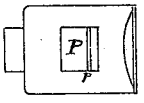

FIG. 3.

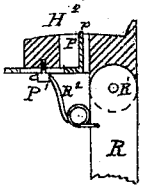

FIG. 4.

WITNESSES.

S. A. Wood.

G. E. Whitney

INVENTOR.

Gardner C. Hawkins

UNITED STATES PATENT OFFICE.

GARDNER C. HAWKINS, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO MORRIS & IRELAND, OF SAME PLACE.

IMPROVEMENT IN MACHINES FOR BURNISHING HEELS, &c.

Specification forming part of Letters Patent No. **145,943**, dated December 30, 1873; application filed March 3, 1873.

To all whom it may concern:

Be it known that I, GARDNER C. HAWKINS, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Boot and Shoe Burnishing Machines, of which the following, taken in connection with the accompanying drawings, is a specification:

My invention relates, in the first place, to the mode of operating the burnishing-tool; and it consists in imparting thereto a variable reciprocating motion, in a line tangent to the curve of the heel or sole, by means of an adjustable crank, so arranged as to be readily and easily adjusted to any desired stroke without stopping the machine, in combination with a vibrating slide or slides and suitable devices for operating the same, whereby the burnishing-tool may be readily made to conform to the rise and fall in the curved edge of the sole.

By the employment of a variable reciprocating burnisher-tool, as embodied in my invention, a better result may be produced in less time than by any of the machines now in use, for the reason that the motion of the burnisher, being always under the control of the operator, can always be adapted to the requirements of the work in hand without loss of time, thereby imparting to said tool a short stroke when working around the heel and toe of the boot, or in the shank, and a long stroke while polishing the straighter portion from the shank to the toe.

My invention relates, in the second place, to a peculiar arrangement of the burnishing-tools, whereby I am enabled to burnish the heel and finish the edge of the fore part of the sole in the same machine, and at one jacking of the shoe; and it consists in the use of two or more burnishing-tools attached to the extremities of arms radiating from a common center, about which they may be made to revolve, so as to bring either of said tools into working position, the faces of said tools being each formed and adapted to perform a given portion of the work—as, for instance, one tool would be adapted to burnish the heel, another to the shank, and still another to the toe and along the sides of the ball, the arms to which said tools are attached being firmly secured in position after each adjustment of the tools, so that they will not be displaced by the act of burnishing.

My invention relates, in the third place, to the construction of, and the mode of attaching, the burnishing-tools; and it consists in pivoting said tools to the carrying-arms at a point nearly over the outer or bottom edge of the sole or heel, and in such a manner that said tools may be vibrated, within suitable limits, in a plane at right angles to the line of reciprocation, the free end thereof being forced toward the work by means of a suitable spring. It further consists in attaching a burnishing-tool to the operating mechanism by means of a lever pivoted thereto, in such a manner that the tool may vibrate laterally to conform to the curve of the rand.

In the drawings, Figure 1 is a perspective view of a machine embodying my invention. Fig. 2 is a plan of the same, and Figs. 3 and 4 represent one of the burnishing-tools in detail.

A is the frame, to which the several parts of the machine are attached. B is a disk or hand-wheel, which forms the base of the jack for holding the shoe S, and by which the jack may be revolved to bring the several parts of the edge of the sole and heel, successively, under the action of the burnishing-tool. The wheel B is mounted in a suitable bearing in the slide C, which is worked transversely by the screw C^1, and rests in the bed C^2, which is fitted to slide in a direction at right angles to the motion of C in suitable bearings formed in the fixed base D, and is moved therein by screw D′.

By this arrangement the shoe S may be moved into any desired position by simply turning the screws C^1 and D′.

E E are swinging or vibrating guides, pivoted at F, and held in position by the rod N, Fig. 1, which is connected to the lever or treadle N′, and is held up by a spring or counter-weight. (Not shown in the drawings.) Upon these slides E a cross-head, H, is mounted, and has a reciprocating motion imparted thereto by the connecting-rod K, one end of which is attached to said cross-head, and the other end to the crank-pin L′ in the hollow disk L. This crank-pin may be adjusted to, and held at, any desired point between the center and circumference of the disk L by means of the lever M,

which acts through a device fully described in a patent to H. W. Bullard, dated May 7, 1873, and numbered 126,442. This arrangement of the crank-pin enables the length of the stroke of the cross-head H to be varied at will, without stopping the machine. R, Figs. 1 and 4, is a reversible cross-arm, attached to the cross-head H in such a manner that it may be revolved thereon, and secured in the desired position with either end down. At each extremity of the arm R I attach a self-adjusting burnishing-tool, H^1 or H^2. This burnishing-tool is pivoted to the arm R at R^1, Fig. 4, and is held in position by the spring R^2. This tool may be of the usual form; or it may be provided with an adjustable guard-piece, P, Fig. 4, this guard-piece P being arranged, as shown, so as to project beyond the burnishing-surface of the tool, as represented at *p*, Figs. 3 and 4. This guard-piece is adjustable, and is held in position by the screw P′.

The object of this guard-piece is to preserve the edge of the sole, and to form a bead.

Only two burnishing-tools are represented in the drawings, but a greater number may be used; and, for some styles of work, it will be necessary to use at least three of different styles—one for the heel, one for the shank, and one for the toe—in which case there will be three arms, R, radiating at equal angles from a common center, around which they may be revolved.

T is a lever, pivoted to the cross-head H, so that it may vibrate laterally, to the outer end of which the cross-arms R are secured, and having a spring, U, attached to its inner end, to control its position. By the use of this device the burnishing-tool is enabled to vibrate laterally, and follow the curve of the rand during its reciprocation.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The combination, in a burnishing-machine, of the cross-head H, arranged to move in a guide or guides, and carrying one or more burnishing-tools, the connecting-rod K, and movable crank-pin L′, when said crank-pin is so arranged and operated that it may be adjusted to vary the stroke of the burnishing-tool without stopping the machine, substantially as described.

2. In combination with the cross-head H, carrying one or more burnishing-tools, the connecting-rod K, and the adjustable crank-pin L′, the vibrating slides E, arranged and operating substantially as described.

3. In combination with the cross-head H, arranged to reciprocate upon a guide or guides, the tool-holder R, consisting of two or more arms radiating from a common center, by which it is secured to the cross-head and adjusted thereon to bring either of said arms into working position, substantially as described.

4. The burnishing-tool H^2, pivoted to its carrier, substantially as set forth, so that it may be vibrated in a direction at right angles to the reciprocating motion, and provided with a spring for controlling the free end thereof, substantially as described.

5. The lever T, controlled by the spring U, or its equivalent, in combination with the cross-head H and a burnishing-tool, substantially as described.

Executed at Boston, Massachusetts, this 27th day of February, 1873.

GARDNER C. HAWKINS.

Witnesses:

G. E. WHITNEY,

S. A. WOOD.