O. GILMORE.

Machines for Burnishing and Polishing the Soles of Boots and Shoes.

No. 212,372. **Patented Feb. 18, 1879.**

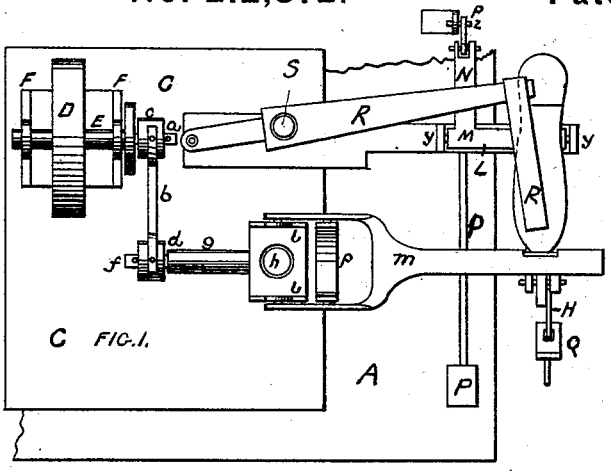
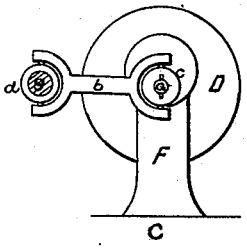
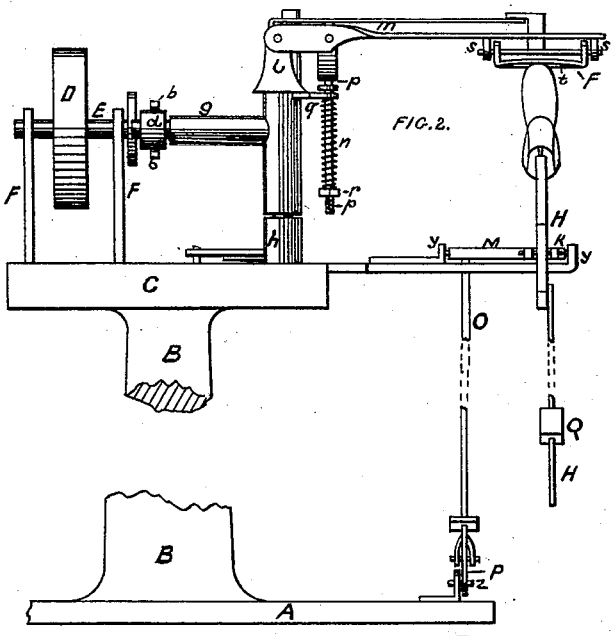
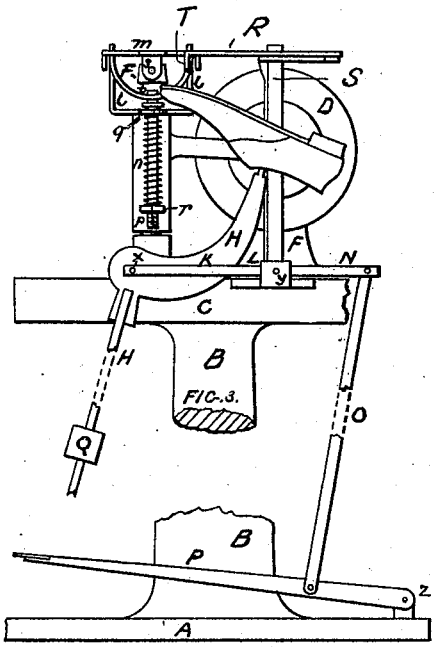
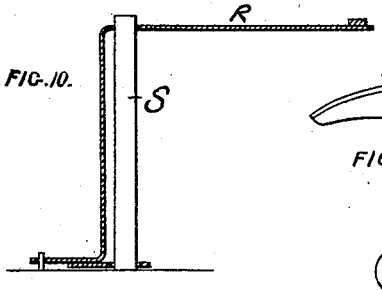


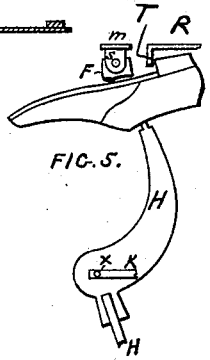
FIG. 4.

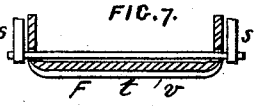


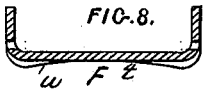


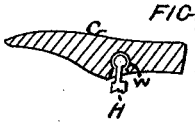












WITNESSES.

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UNITED STATES PATENT OFFICE.

OTHNIEL GILMORE, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN MACHINES FOR BURNISHING AND POLISHING THE SOLES OF BOOTS AND SHOES.

Specification forming part of Letters Patent No. **212,372**, dated February 18, 1879; application filed July 17, 1878.

To all whom it may concern:

Be it known that I, OTHNIEL GILMORE, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Machines for Burnishing and Polishing the Soles of Boots and Shoes, of which the following is a specification:

Under this invention the burnishing-tool is arranged for a vibratory and a rocking movement and for a yielding or giving pressure upon the boot or shoe sole, and it has its working-face of novel form. The boot or shoe is sustained upon a carrier, so that it can be freely swung thereon and moved forward and backward across and lifted against the working-face of the burnishing-tool, all substantially as hereinafter described.

In the accompanying plate of drawings, Figure 1 is a plan view; Figs. 2 and 3 side elevations; Figs. 4, 5, 6, 7, 8, 9, and 10 detail views.

In the drawings, A represents a base-plate having a central standard, B, which supports a horizontal platform, C, on which are arranged the stationary and operating parts of my improved machine, as follows: D, a driving-pulley on a horizontal shaft, E, which turns in standards F F of the platform C; *a*, a crank-pin at one end of driving-shaft E; *b*, a horizontal pitman or connecting rod, at one end hung, through a sleeve, *c*, to the crank-pin *a* for the crank-pin to turn within said sleeve and for the pitman-rod *b* to swing horizontally upon said sleeve, and at the other end hung through a sleeve, *d*, to the outer end, *f*, of a horizontal arm, *g*, for the sleeve *d* to turn upon said arm, and for the pitman-rod *b* to swing horizontally on the sleeve *d*. The said horizontal arm *g* is adapted to swing in a horizontal plane about a vertical post, *h*, as a center, and to its upper part, *l*, is pivoted one end of an arm, *m*, which projects horizontally from one side of the platform C. *p*, a vertical rod, pivoted to the arm *m* between its two ends, and passing loosely through an ear-piece, *q*, of the vertical post *h*; *n*, a spiral spring on rod *p*, below the ear-piece *q*, and confined between it and a screw-nut, *r*, on the lower part of said rod *p*.

At the outer end, and on the under side of the horizontal projecting arm *m*, is the burnishing-tool F. This burnishing-tool F is adapted to rock in bearings *s* of the carrying-arm *m* in a direction transversely to its length, and the under or working face, *t*, of the burnishing-tool is concave along its front edge, *u*, and straight along its rear edge, *v*. These said separate formations of the working-surface of the burnishing-tool meet and unite together, so as to produce as a whole a working-surface suitable for the burnishing purposes desired—that is, a surface without ridges or other projecting edges to interfere with the burnishing operation, and the purpose of each of the said separate formations of the burnishing-face of the burnishing-tool will hereinafter appear. G, a last suitable for lasting a boot or shoe. This last G is hung by a ball-and-socket joint, *w*, to the upper end of a vertical arm, H, which intermediate of its length turns on a fulcrum, *x*, at the outer end of an arm, K, which projects on one side of a rocker-frame, L, composed of such arm K, a horizontal shaft, M, turning in bearings *y* of the platform C, and an arm, N, which projects on the opposite side of the rocker-frame to the said projection of the arm K, and at its outer end is connected by a vertical pitman-rod, O, to a foot-treadle lever, P, which has its fulcrum on the base-plate A.

The carrying-arm H for the shoe-last G, below its fulcrum, is weighted, as shown at Q, and such arm, together with all its connecting parts above described, is situated so that the face of the sole of a boot or shoe which is placed on the last will be situated directly below the working-face *t* of the burnishing-tool F, and will be in such a position that when the treadle-lever P is depressed, which lifts the boot or shoe, the face of the boot or shoe sole will be brought into contact with the working or burnishing face of the burnishing-tool F, provided the last be properly swung therefor on its ball-and-socket connection with the vertical arm H.

The parts hereinabove described which connect the burnisher carrier or arm *m* with the driving-shaft E, under a rotation of such shaft, secure a forward and backward swing of the burnishing-tool through a given plane, by which, with the face of the sole of the boot

presented to the working-face of the burnisher, as hereinabove described, and so as to extend across the burnisher, together with swinging the boot or shoe forward and backward under the burnisher, obviously the face of the boot or shoe sole can be burnished or polished.

The swinging of the boot or shoe under the burnisher is accomplished by holding it by its heel portion with one hand.

The weighting, as described, of the arm H, which carries the boot or shoe last, assists the operator to the better and steadier holding of the boot or shoe to the action of the burnisher.

The ball-and-socket connection of the last G, with its carrier-arm H, enables the boot or shoe to be tipped in any and all directions, so that all parts of the face of the sole may be presented to the burnisher.

The burnisher can rock, and from its being hung and provided with a spring, as described, it is made yielding and elastic, and the peculiar formation of its burnishing-face *t*, together with its rocking movement, obviously adapts the burnisher to all the varieties of forms in the surface of a boot and shoe sole, and thus insures the burnishing of all parts.

To prevent the burnisher from striking the front face of the heel of the boot or shoe sole which is being burnished, a stop, R, is employed, which stop R projects from a post, S, of the platform C, and it has a lip, T, so situated relatively to the forward and backward swing of the boot or shoe under the burnisher as to catch against the front face of the heel as the boot or shoe is moved under the burnisher by the operator toward himself, and thus limiting such movement prevents contact between the burnisher and the front face of the heel. This stop, as shown, is adapted to be detached and attached at pleasure, and it is also arranged to be swung to the right or left, as may be desired.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The rocking burnishing-tool having a portion of its burnishing-surface transversely concave, and provided also with a straight transverse edge, substantially as and for the purpose set forth.

2. The combination of shaft E, rocking frame *l*, connected to said shaft, hinged arm *m*, carrying the burnishing-tool, and a suitable spring for drawing said arm downward and allowing it to yield vertically, substantially as set forth.

3. The combination of the weighted arm H, shaft M, arms N and K, treadle P, and link O, substantially as described.

4. The combination, with the last-carrier, of the stop R, substantially as and for the purpose set forth.

5. The combination of the universal-jointed arm *m*, rocking burnishing-tool F, and vibrating arm H, substantially as described.

6. The combination, with the vertically and horizontally vibrating arm *m*, of the rod *p*, shoulder *q*, spring *n*, and stop-nut *r*, substantially as described.

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Witnesses:
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