

J. H. HOWARD.

Machines for Burnishing Boots and Shoes.

No. 123,566.

Patented Feb. 13, 1872.

Fig. 1.

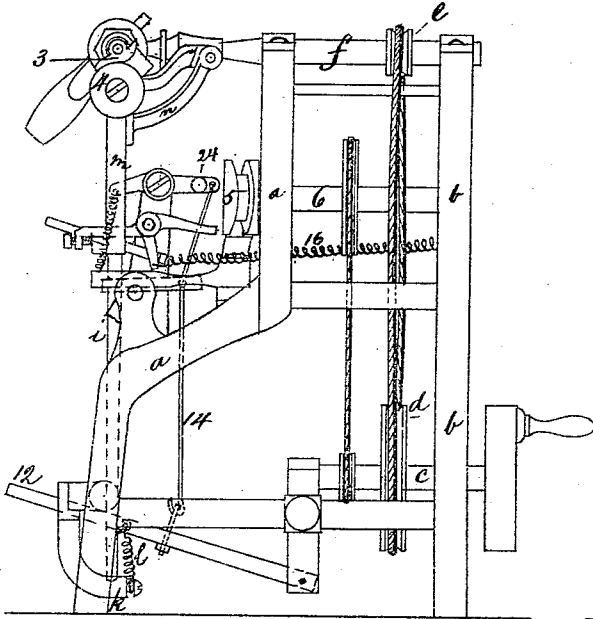


Fig. 2.

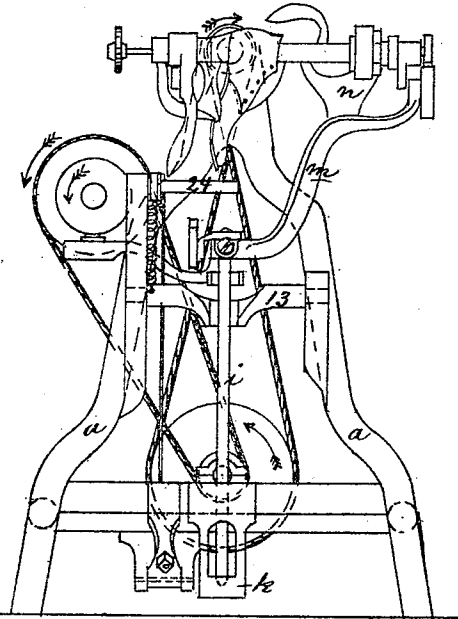


Fig. 3.

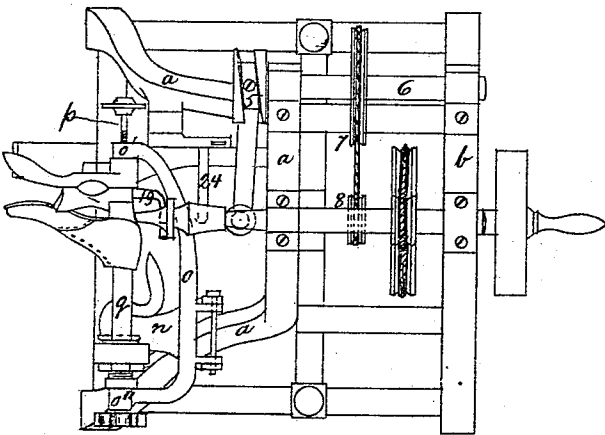


Fig. 4.

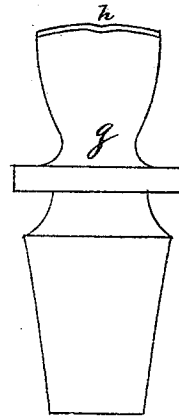
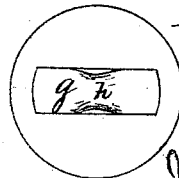


Fig. 5.



Witnesses:

Wm. H. Hutchinson

Albert H. Cutting

Inventor:

James H. Howard.

by Arthur Andren his atty

J. H. HOWARD.

Machines for Burnishing Boots and Shoes.

No. 123,566.

Patented Feb. 13, 1872.

Fig. 6.

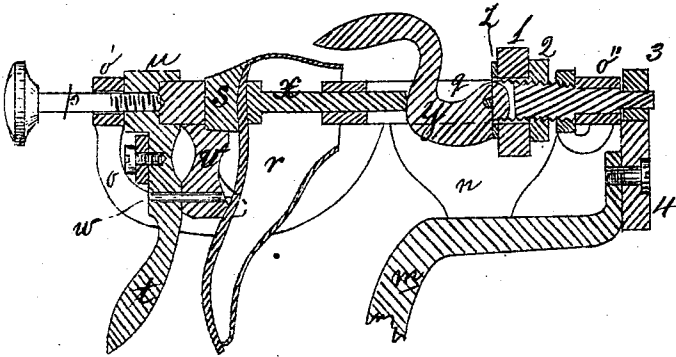


Fig. 7.

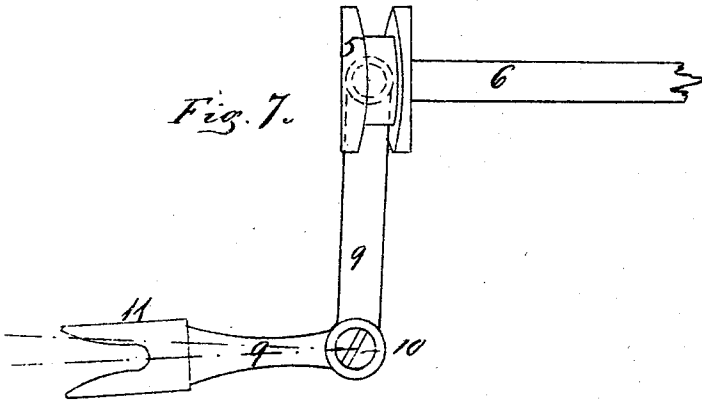
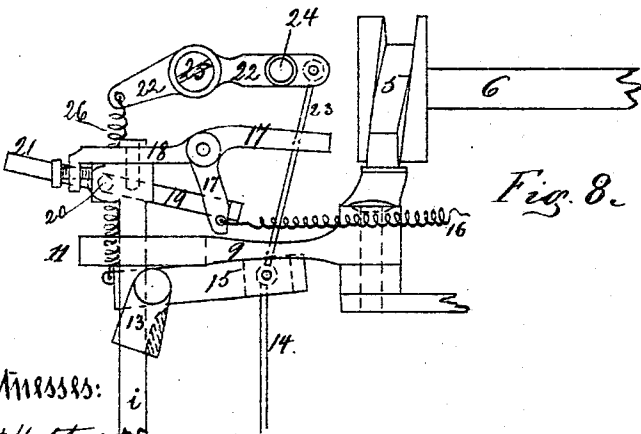


Fig. 8.



Witnesses:

Wm. H. Hutchinson

Albert H. Vestberg

Inventor:

James H. Howard.

by Alvan Andsen his atty

UNITED STATES PATENT OFFICE.

JAMES H. HOWARD, OF STONEHAM, MASSACHUSETTS.

IMPROVEMENT IN MACHINES FOR BURNISHING BOOTS AND SHOES.

Specification forming part of Letters Patent No. 123,566, dated February 13, 1872.

I, JAMES H. HOWARD, of Stoneham, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements on Burnishing-Machines, of which the following is a specification:

Nature and Objects of the Invention.

The nature of my invention relates to improvements on machines for burnishing the heels or other parts of boots and shoes, consisting in the employment of a rotating burnisher, the end of which is placed in contact with the heel or other part of the boot or shoe that is to be burnished. The boot or shoe is attached to a spindle that is made to rock forward and back so that the burnisher will touch all parts of the heel, &c., during operation, as will now be fully shown and described.

On the drawing, Figure 1 is a side elevation. Fig. 2 is a front elevation. Fig. 3 is a ground plan. Fig. 4 is an enlarged side view of the burnisher. Fig. 5 is a ground plan of Fig. 4. Fig. 6 is an enlarged central longitudinal section of the jack and connections. Fig. 7 is a detailed view of the cam and fork that operate the carriage, and Fig. 8 is a side view of said fork, cam, and their connections.

Similar letters refer to similar parts wherever they occur on the drawing.

a a b b is the frame to which the different parts of the machine are connected. A driving-shaft, *c*, is movable in bearings attached to the frame-work, as shown. The shaft *c* is provided with a pulley, *d*, around which a cord or belt transmits the motion to the pulley *e* attached to the shaft *f*. On the forward end of the shaft *f* is the burnisher *g*, secured and made to revolve with the shaft *f* when the said shaft is set in motion. The burnisher *g* is shown in detail in Figs. 4 and 5. The extreme outer end of the burnisher *g* is made convex, but has in the middle a depression, *h*, the object of which is to prevent the burnisher to work with a point only, but allow the whole of its end to come in contact with the heel, &c., during operation of the machine. The rear end of the burnisher *g* may be made as a socket to fit over the shaft *f*; or it may be made so as to project in a socket in the end of the said shaft *f*, as may be desirable. The burnisher *g* is to be heated and kept of an even temperature during operation;

and this I easily accomplish by having a lamp or gas-jet burning in a suitable place, so that the heat will be conducted to the burnisher *g*. A vertical shaft, *i*, is supported in a step, *k*, and held down in the said step by means of the spiral spring *l* connecting the shaft *i* and step *k*, as shown in Fig. 1. To the upper end of the shaft *i* is the carriage *m* attached. The carriage *m* projects on the rear as a support, *n*, screwed to or otherwise connected to the carriage *m*. The support *n* is jointed in its upper end to a frame, *o*, by means of hinges and a hinge-pin, as shown on Figs. 1 and 3, by which arrangement the frame *o* is made to swing around said hinges for the purpose of enabling the revolving burnisher *g* to touch all parts of a boot or shoe heel during the operation of the machine. The frame *o* is provided with bearings *o' o''*, in which the regulating-screw *p* and spindle *q* are made to turn easily. The shoe *r* is held firmly to the spindle *q* in the following manner: A handle, *t*, provided with a hub, *u*, that is tapped for the reception of the regulating-screw *p*, is connected to the heel-holder *v* by means of the pin *w*, as shown in Fig. 6. The heels *s* of the shoe *r* rests on the heel-holder *v*, in a manner as shown. A bolt, *x*, supported in the spindle *q*, is pressed against the inside of the heel by means of the cam or jack *y*, shown in Fig. 6. The pin around which the jack *y* is turning is resting against a washer, *z*, and an elastic disk, *1*, is placed between the washer *z* and nut 2. The nut 2 is screwed over the spindle *q*, by which arrangement I am able to increase or decrease the pressure of the jack *y* on the bolt *x*, as may be needed. On the extreme end of the spindle *q* is a cam, 3, secured, a side view of which is shown in Fig. 1. The cam 3 is provided with two projections, as shown, and is resting on a small pulley, 4, movable around a stud attached to the carriage *m*. From this it will be seen that, by turning the spindle *q* around its center in either direction, the projection on the cam 3 will raise said spindle *q*, and the shoe attached thereto, so that the burnisher *g* will be enabled to burnish on all parts of the heel of the shoe, as it is well known that a heel is generally made of a *U*-form, and I could, therefore, not burnish the sides of the heel if I simply turned the shoe around the center without raising it. The car-

riage *m* is given a rocking motion in the direction of the spindle *q* by means of the cam-wheel 5 attached to the shaft 6. The shaft 6 is operated by means of the cord-pulleys 7 and 8, as shown in the drawing. A knee-lever, 9, movable around the fulcrum 10, is operated by the cam-wheel 5, as shown in detail in Figs. 7 and 8. One end, 11, of the knee-lever 9 is forked, and embraces the vertical shaft *i*, by which arrangement a rocking motion is given to the shaft *i* from the cam-wheel 5.

To remove the shoe from the burnisher *g*, I press the treadle 12 downward, when the crank 13 is operated by means of the connection 14 and lever 15, and the vertical shaft *i*, with the carriage *m* and spindle *q*, are thus pressed outward from the burnisher *g*. When the shaft *i* is pressed outward from the burnisher *g*, it is not rocked, as the extreme end of the fork 11 is spread out so as to allow the motion of the lever *g* without touching the shaft *i*. The shoe is held in contact with the burnisher by means of the spiral spring 16 attached to the frame *b*. The forward end of the spring 16 is connected to a knee-lever, 17, jointed to a piece, 18, that is connected to the shaft *i*, as shown in Fig. 8. A lever, 19, hooks over the knee 17, by which arrangement the tension of the spring 16 may be increased or decreased at pleasure. The hooked lever 19 is movable around the stud 20 and provided with a handle, 21, by which it can be operated easily. The lever 15 is also jointed to a secondary lever, 22, by means of the link 23, as shown in Fig. 8. The lever 22 has a rod, 24, projecting on one side, that operates the upper part of the knee-lever 17 automatically as soon as the treadle 12 is pressed down. The lever 22 is movable around the stud 25 and held in position by the coiled spring 26, as shown. The object of increasing or decreasing the pressure of the spring 16 is so as to burnish with greater pressure at first and to relieve the pressure on the burnisher as the work progresses.

Having thus described the nature, construc-

tion, and operation of my invention, I wish to secure by Letters Patent, and claim—

1. On a burnishing-machine, a rotating-end burnisher, the end of which is kept in contact with the heels or other parts of a boot or shoe, for the purpose as herein set forth.

2. A rotating burnisher, *g*, the end of which is made convex and provided with a hollow, *h*, in the middle, for the purpose and in a manner set forth.

3. The clamping device constructed with the slotted shaft *q*, bolt *x*, and jack *y*, with or without the elastic washer 1 and nut 2, for the purpose set forth.

4. The arrangement of the regulating-screw *p*, operating-handle *t*, and rest *v*, as and for the purpose set forth.

5. In combination with the spindle *q*, the cam 3, with its projections, for the purpose of allowing the burnisher to reach all parts of a heel, &c., as herein set forth.

6. In combination with the carriage *m*, spindle *q*, and cam 3, the supporting-arm *n* and hinged frame *o*, as and for the purpose set forth.

7. In combination with the carriage or jack *m*, the arm-piece 18, levers 17 19, and the spring 16, or its equivalent, as and for the purpose set forth.

8. The construction and arrangement of the treadle 12, connection 14, lever 15, crank 13, secondary lever 22 with the side projection 24 and the link 23, for the purpose and in a manner as herein set forth and described.

9. In combination with a rotating-end burnisher, *g*, the rocking carriage or jack *m*, forked arm 11, hinged at 10, and the cam-wheel 5, or their equivalents, for the purpose of rocking or reciprocating a boot or shoe, in a manner as herein set forth.

JAMES H. HOWARD.

Witnesses:

ALBAN ANDRÉN,
WM. H. HUTCHINSON.

1900