C. J. ADDY.

Machine for Burnishing the Sole-Edges of Boots and Shoes.

No. 218,806. Patented Aug. 26, 1879.

Fig: 1.

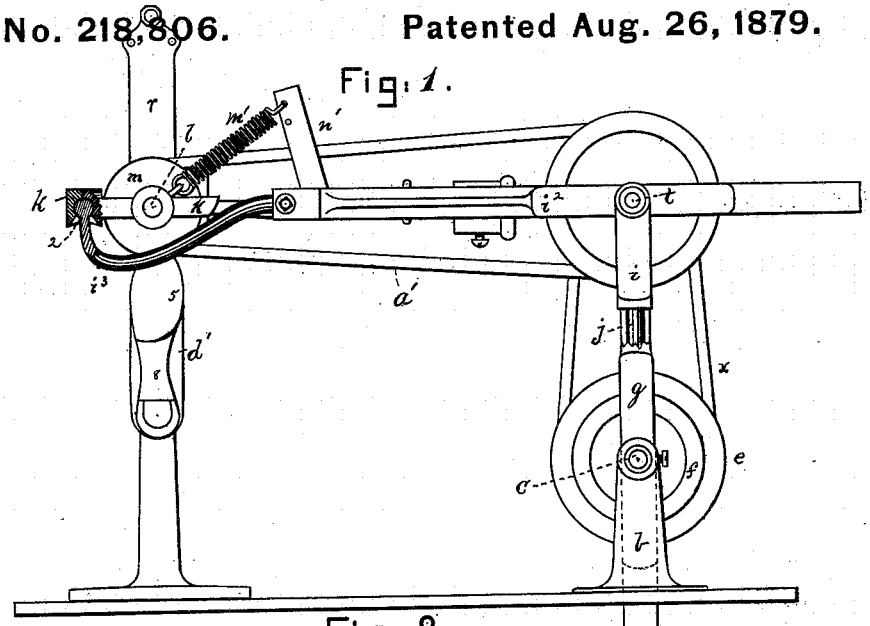


Fig: 2.

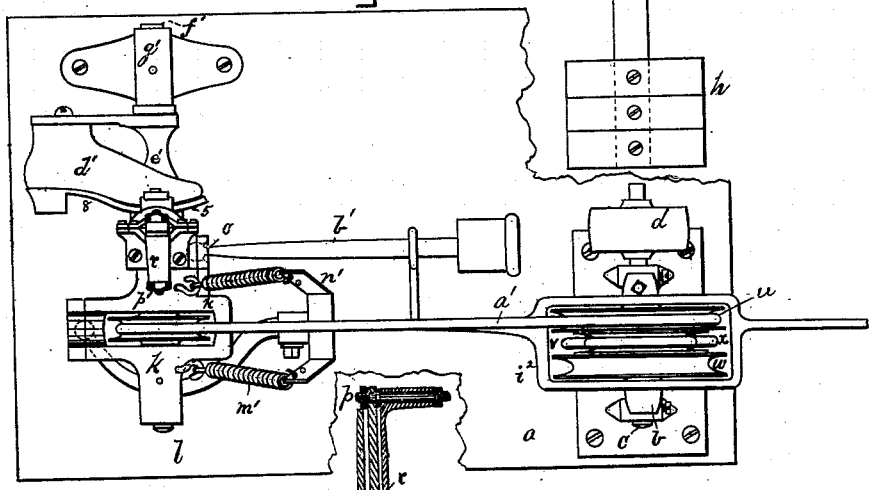
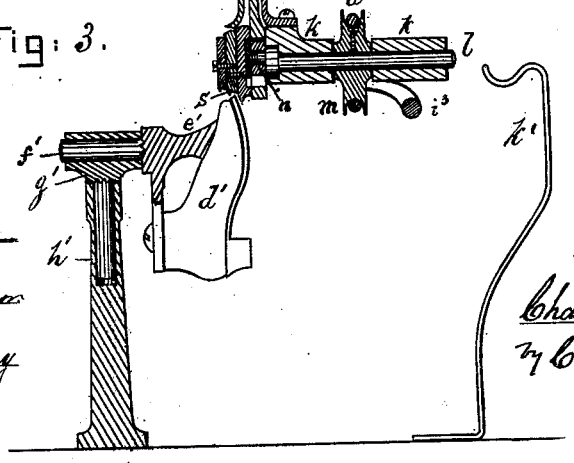


Fig: 3.



Witnesses.

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UNITED STATES PATENT OFFICE.

CHARLES J. ADDY, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN MACHINES FOR BURNISHING THE SOLE-EDGES OF BOOTS AND SHOES.

Specification forming part of Letters Patent No. **218,806**, dated August 26, 1879; application filed May 27, 1878.

To all whom it may concern:

Be it known that I, CHARLES J. ADDY, of Boston, county of Suffolk and State of Massachusetts, have invented an Improved Machine for Burnishing the Edges of Boots and Shoes, of which the following is a specification.

This invention relates to improvements in mechanism for burnishing the edges of sole-leather used in boots and shoes; and consists in an organized machine containing a tool-carrying frame provided with a shaft rotated in but one direction and a reciprocating burnishing-tool actuated by it—such frame being connected by means of a universal or ball joint with a reciprocating frame provided with a shaft rotated in but one direction and belted to the shaft which vibrates the burnishing-tool, the two frames being so connected and supported that the tool-carrying frame and the two rotating shafts may be moved forward and backward, up and down, and laterally toward and from the shoe-supporting jack, or in any direction the resultant of two of such motions, or universally, whereby the entire edge of a shoe mounted upon a shoe-holding jack having only a motion of rotation, whatever may be its shape or curvature, may be effectually polished.

In Patent No. 141,984 the burnishing-tool is so supported that it cannot be moved laterally in the direction of the shoe-holding jack, or in the direction of the length of its spindle, and consequently the entire shoe-edge, including the ball portion of the sole and the shank, cannot be effectually polished, for the tool cannot be so presented as to operate squarely upon the shank-edge. This lack of adaptation of the position of the tool to the inclined portion of the sole near the shank is in a measure lessened, but not overcome, by moving the shoe laterally, the spindle of the holding-jack being moved horizontally.

Prior to my invention thereof I am not aware that any automatically-operated burnishing-tool has been so mounted as to be capable of being moved universally in all directions to follow the sole-edge, no matter what its curvature.

Figure 1 is a side elevation of a burnishing-machine provided with my improvements; Fig. 2, a top view thereof; and Fig. 3, a section of the tool-carrier, tool, &c.

The bed-plate *a* of the machine has a standard, *b*, in which is mounted a shaft, *c*, provided with a belt-pulley, *d*, and one or more sheaves, *e f*.

The main shaft *c* serves as the pivoted axis of a swinging frame, *g*, weighted at *h*. At the opposite end this frame *g* supports loosely a reciprocating frame, *i* i^2 i^3, this being connected with *g* by a pin, *j*, on one, which enters a socket in the other, (see Fig. 1,) thereby making a swivel-joint.

The extreme end of this frame has (see Fig. 1) a ball-like termination, 2, which enters a socket in the tool-carrying frame *k*, so that such frame *k* has a universal movement on the ball-like end 2 of frame *i*. This frame *k* has mounted in it a shaft, *l*, having a fixed pulley or sheave, *m*. A disk on shaft *l* is provided with a crank-pin, *n*, which enters a slot in the link or lever *o*, pivoted on a bolt, *p*, at the upper end of the handle *r*. This handle is connected with the frame *k*, the handle enabling the moving of the frame *k* into all positions necessary to place the burnishing iron or tool *s*, of any usual shape, upon the sole-edge, no matter what may be its curvature, without moving the shoe laterally.

The frame *i* i^2 i^3 has a shaft, *t*, which supports two or more sheaves, *u v w*. A belt, *x*, driven from the main shaft, rotates the shaft *t* continuously in one direction, and it, by a belt, *a'*, over sheave *m*, rotates the shaft *l* continuously, which enables me, through a shaft rotated continuously in one direction, to impart to a burnishing-tool a rapid reciprocating movement.

By the pin-and-socket connections between *i* and *g* the frame *i* i^2, &c., may be vibrated horizontally by means of the axis or pivot *c*. Such frame may be moved horizontally backward and forward, and by means of the axis *t* it may be swung up and down, or in the arc of a vertical circle.

The frame *k* and burnishing-tool move with frame *i* in all these directions, or the resultant of any of these combined, and the frame *k*, in addition to such movements, has a motion on *i* i^2, &c., by means of the ball-and-socket connection 2.

The weighted connecting-bar *b'*, connected by ball-joint with the frame *k*, assists in hold-

ing up such frame, balancing it upon frame *i*, and preventing such vibration as would make the frame *k* very hard to hold by the handle *r*.

The shoe-holding jack, on which the shoe or boot *d'* to be burnished is mounted, has a toe-rest, *e'*, and a spindle, *f'*. The spindle *f'* is fitted to rotate in a socket in a head, *g'*, and this head is vertically adjustable and securely held in its adjusted position in a fixed standard, *h'*, so that the jack and shoe can rotate only with the spindle *f'*.

The frame *k* supported in this way may be moved laterally to place the burnishing-tool *s* upon the edge of the sole of the boot or shoe, and follow it properly from the ball portion 5 along the curved portion of the shank, while the shoe-holding jack rotates in a fixed path, and it can rise and fall to operate upon the toe and side edge, and move horizontally forward and backward to follow the side edge.

Dispensing with devices for moving the shoe-holding jack horizontally, and so mounting it as to have only the movements described, greatly simplifies the construction of the machine and makes it more reliable in its action.

The rest *k'* holds up the frames *k i* when not in use.

The springs *m'*, connecting the frame *k* and the standard *n'*, act to keep the frame *k* in such position that its shaft *l* normally remains substantially parallel with shaft *t*.

In a machine wherein the shafts are rotated alternately in opposite directions it is necessary to employ additional racks and gears, and the motions are hard and abrupt and less rapid than in the plan employed by me.

I claim—

1. The frame *k*, having a shaft, *l*, rotated in one direction, a link or lever, *o*, handle *r*, pin *n*, and reciprocating burnisher *s*, in combination with an articulated frame, *i* i^2 i^3, and swinging frame *g*, swivel-jointed to said articulated frame, the shafts *c t*, and operating belts and pulleys, substantially as and for the purposes described.

2. In a burnishing-machine, a shoe-holding jack provided with a toe-rest, *e'*, and a rotating spindle, *f'*, in combination with a vertically-adjustable head, *g'*, and a fixed standard, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES J. ADDY.

Witnesses:
G. W. GREGORY,
N. E. WHITNEY.