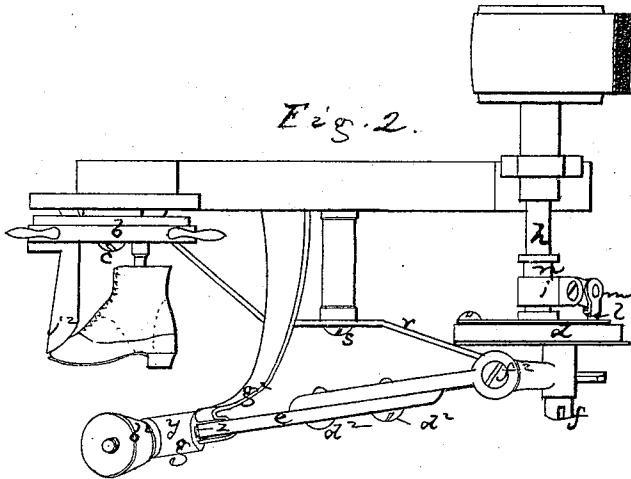
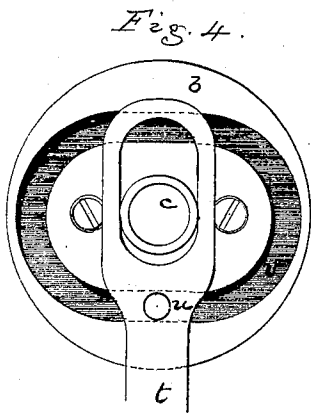
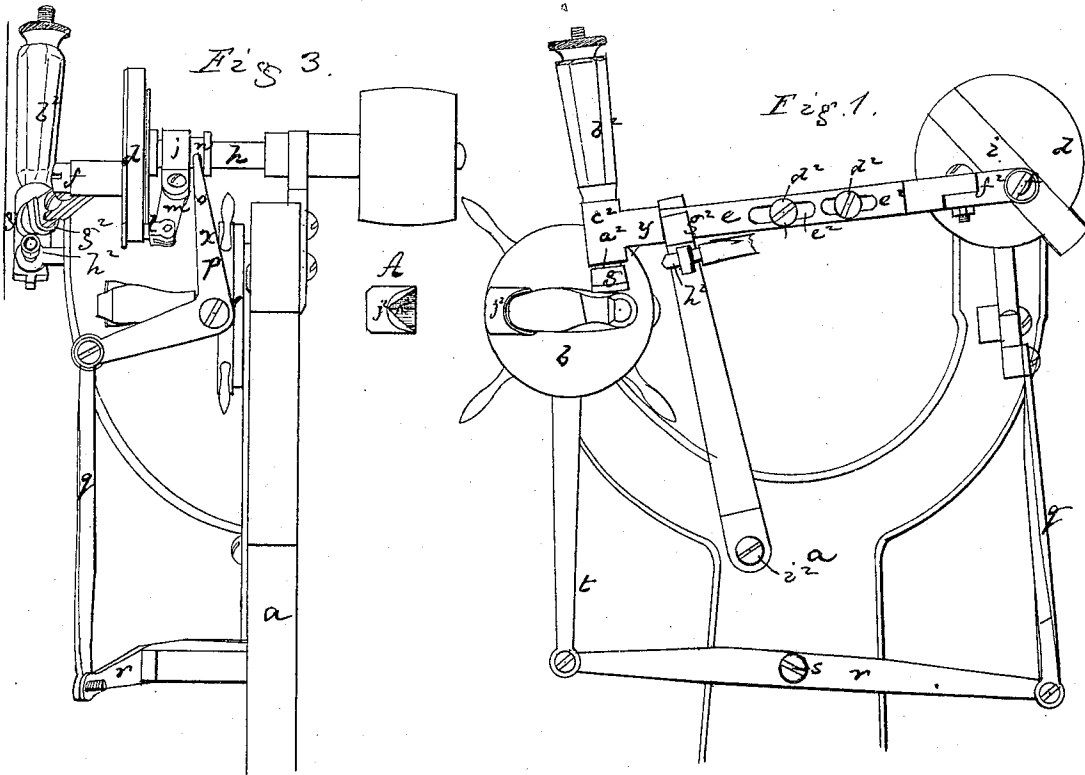


A. C. CAREY.

Improvement in Sole-Burnishing Machine.

No. 132,749.

Patented Nov. 5, 1872.



Witnesses.  
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# UNITED STATES PATENT OFFICE.

AUGUSTUS C. CAREY, OF MALDEN, ASSIGNOR TO HIMSELF AND DEAN PEABODY, OF LYNN, MASSACHUSETTS.

## IMPROVEMENT IN SOLE-BURNISHING MACHINES.

Specification forming part of Letters Patent No. 132,749, dated November 5, 1872.

*To all whom it may concern:*

Be it known that I, AUGUSTUS C. CAREY, of Malden, in the county of Middlesex and State of Massachusetts, have invented an Improved Machine for Burnishing Sole-Edges; and I do hereby declare that the following, taken in connection with the drawing which accompanies and forms part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

United States Letters Patent No. 131,425, have been granted for my invention of an "improvement in sole-edge burnishing-machines," said improvement consisting in an organization in which the length of stroke of the reciprocating burnishing-tool is varied by the changing position of the shoe under the tool, the stroke being longest at the sides of the sole and shortest at the heel and toe.

In my present invention I have in view the same purpose, and one part of my invention relates to and consists in the means employed for varying the length of the stroke of the burnishing-tool in accordance with the position of the tool upon the sole-edge. In my present invention the jack-wheel upon which the shoe is mounted has on one face a cam or pattern groove, into which extends a pin projecting from one end of a link having its other end jointed to one arm of a lever, whose other arm is connected by a link to one arm of another lever, the other arm of the latter lever being connected with a sliding crank-pin, to which is jointed the arm of the burnisher. The form of the cam or pattern groove is such that the link connected to it is raised and depressed as the jack-wheel is turned, and by such rise and depression the two levers effect such change in position of the crank-pin as will effect change of throw of the burnisher, such change being in accordance with the varying length of stroke required for the respective parts of the sole-edge. This part of the invention may be stated as consisting in combining with the jack or shoe-holding mechanism, and with the reciprocating burnisher-arm actuated by a crank motion, a connection by which the position of the crank-pin with reference to its center of rotation is changed, to change the throw of the burnisher in accordance with the position

of the burnisher upon the respective parts of the sole-edge to be burnished.

The drawing represents a machine embodying my invention.

Figure 1 shows the machine in front elevation. Fig. 2 is a plan of it. Fig. 3 is an end view of it. Fig. 4 is a rear view of the jack-wheel.

*a* denotes the post or standard; *b*, the jack-wheel, turning on a pin, *c*, and having the shoe jacked to it by any suitable means. *g* denotes the burnishing-tool at one end of an arm, *e*, the arm at its opposite end being jointed to a crank-pin, *f*, extending from a crank-wheel, *d*, on a driving-shaft, *h*, the arm and burnisher being reciprocated by the rotation of the shaft. If the crank-pin be stationary as respects the wheel, the reciprocations of the burnisher will be of equal length, and to vary these reciprocations I make this pin adjustable and connect it with the jack, as follows: The pin *f* extends directly from a slide-plate, *i*, that slides in a radial or diametric groove in the face of the crank-wheel, said slide having extending from its opposite face and through a slot in the crank-wheel, a pin, *l*, jointed by a link, *m*, with a sleeve or collar, *j*, sliding upon the shaft *h*; this sleeve having a groove, *n*, into which enter the prongs of a fork, *o*, at the top of a vertical arm of a lever, *p*, having a horizontal arm which is jointed, by a link, *q*, with one end of another lever, *r*, fulcrumed at *s*, and having the bottom of a link, *t*, connected to its opposite end. The upper end of this link *t* has a pin, *u*, extending from it into a cam or pattern groove, *v*, in the jack-wheel, this groove being so formed as to raise and lower the link as the jack-wheel is turned, and thereby, and through the lever connection, change the position of the crank-pin *f* with reference to the center of the wheel *g*, the form of the cam-groove being such that as the toe or heel part of the sole-edge is brought under the burnisher the link *t* is thrown down, and the lever-arm *x* is thereby thrown from the crank-wheel, drawing the crank-pin toward the center of the wheel, and thereby lessening the throw of the burnisher-tool, while when either shank or side portion of the sole comes under the burnisher reverse movements of the levers and links take place,

and the crank-pin is moved toward the perimeter of the crank-wheel, thereby increasing the throw of the burnisher.

The change in position of the crank-pin may be effected by a pedal connection of the lever  $p$  or the lever  $r$ , the change of throw being then made by the foot of the operator; but I prefer the connection with the jack-wheel, as the changes are then made automatically. The burnisher-arm  $e$  has a free vertical movement upon the crank-pin  $f$ , and the burnisher is moved by the operator or by the sole-edge upon which it rests, it being guided and its pressure effected by hand. In addition to this capability of free vertical movement, it is also made capable of a swivel movement to vary the angle at which the burnishing-edge is presented laterally upon the sole-edge, for which purpose it is applied to the arm  $e$  by means of a sleeve,  $y$ , turning on a pin,  $z$ , at the end of the arm, or by an equivalent connection, the pin  $z$  being preferably made as a screw, upon which the sleeve  $y$  is screwed, this connection permitting the burnisher to be readily removed. The burnisher may also be applied to the sleeve by a pin,  $a^2$ , carrying a handle,  $b^2$ , this pin turning freely in a bearing,  $c^2$ , so that the burnisher can have an axial movement with this pin, as well as a tipping movement upon the arm  $e$  and a vertical movement upon the crank-pin  $f$ . The burnisher-arm is made adjustable as to length by being made in two parts connected by screws  $d^2$  extending through slots  $e^2$  in one of the parts and screwing into the other parts. To throw the burnisher into position to act and from such position, the arm  $e$  is made with a joint,  $j^2$ , that permits the burnisher to be moved in toward and back from the jack-wheel, and when moved out from the shoe or out of action the arm may rest upon a support,  $g^2$ , that holds it in position adjacent to the jack-wheel, and readily accessible for movement to the shoe. Connected to the support  $g^2$  is a gas-burner,  $h^2$ , or other source of heat supply, the flame of which will impinge directly against the burnishing-tool when it is at rest, and will thereby keep it heated in readiness for use at all times when the machine is in operation, the gas or flame being turned down when the machine is not in use. To enable the burnisher to reciprocate when not in use the support  $g^2$  may be hung upon a pivot,  $i^2$ , upon which it can freely turn, or the burnisher-arm may slide upon the support. The

toe-rest,  $j^2$  of the jack is made with an angular recess,  $k^2$ , for receiving the instep of the shoe, this angle serving to hold the shoe from slipping, much better than the regular concave with which such rests are usually made, this recess being seen at A, which shows an end view of the toe-piece.

I claim—

1. In combination with a jack mechanism and with a reciprocating burnisher operated by a crank motion, a crank-pin, the distance of which from its center of motion may be changed to vary the length of stroke of the burnisher-tool.
2. In combination with a jack mechanism and with a reciprocating burnisher operated by a crank motion, a crank-pin whose distance from its center of motion is automatically varied by the movement of the jack mechanism.
3. In combination with the burnisher-arm, a burnisher having a capability of the described swiveling movement by means of the sleeve  $y$  or its equivalent applied as an elongation of the arm, substantially as described.
4. The rest  $g^2$ , secured to the frame for supporting the burnisher when out of operative action, substantially as described.
5. In combination with a rest for supporting the burnisher when out of action, a burner for heating the burnishing-tool, substantially as shown and described.
6. A rest and burner made to reciprocate with the burnisher, substantially as described.
7. In combination with an automatically-reciprocating burnisher-tool, a burnisher-arm made adjustable as to length, substantially as shown and described.
8. In combination with a jack mechanism, a burnisher having a capability of all the following movements: A vertical movement, a reciprocating movement upon the edge to be burnished, a lateral movement toward and from the jack mechanism, a tipping movement for edges of various patterns, and a rotative or axial movement, substantially as described.
9. In combination with the jack mechanism, a toe-rest having the angular recess  $k^2$ , substantially as shown and described.

Executed this 30th day of September, A. D. 1872.

AUGUSTUS C. CAREY.

Witnesses:

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CHARLES MERRITT.