

**C. W. GLIDDEN.**  
**Machines for Burnishing the Heels of Boots and Shoes.**  
**No. 143,899.**

2 Sheets--Sheet 1.

Patented Oct. 21, 1873.

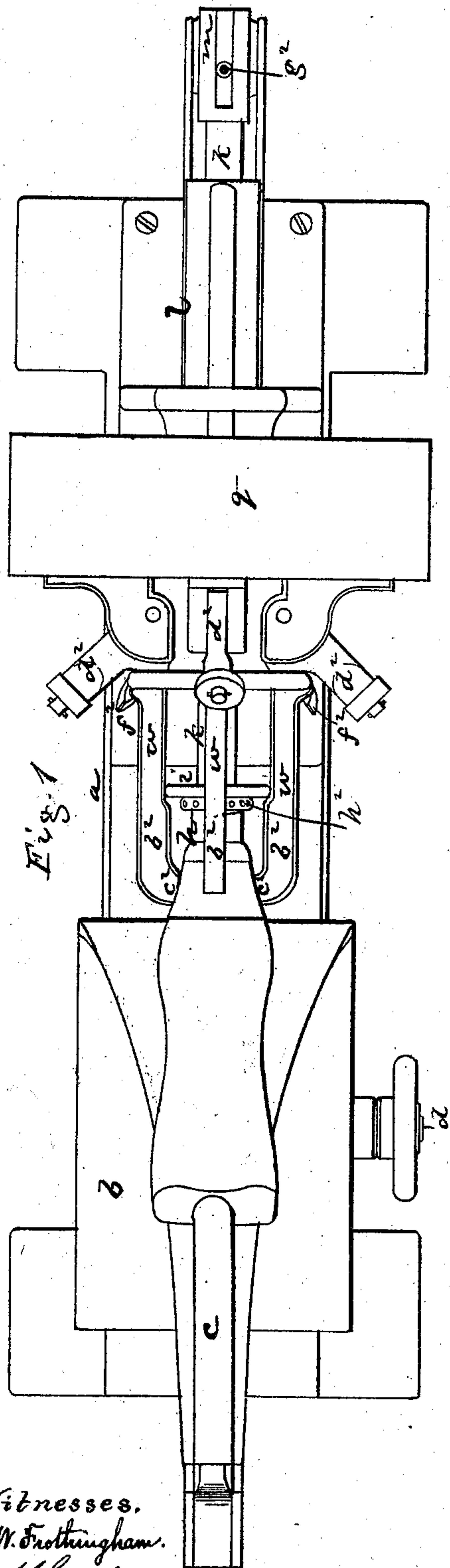


Fig. 1

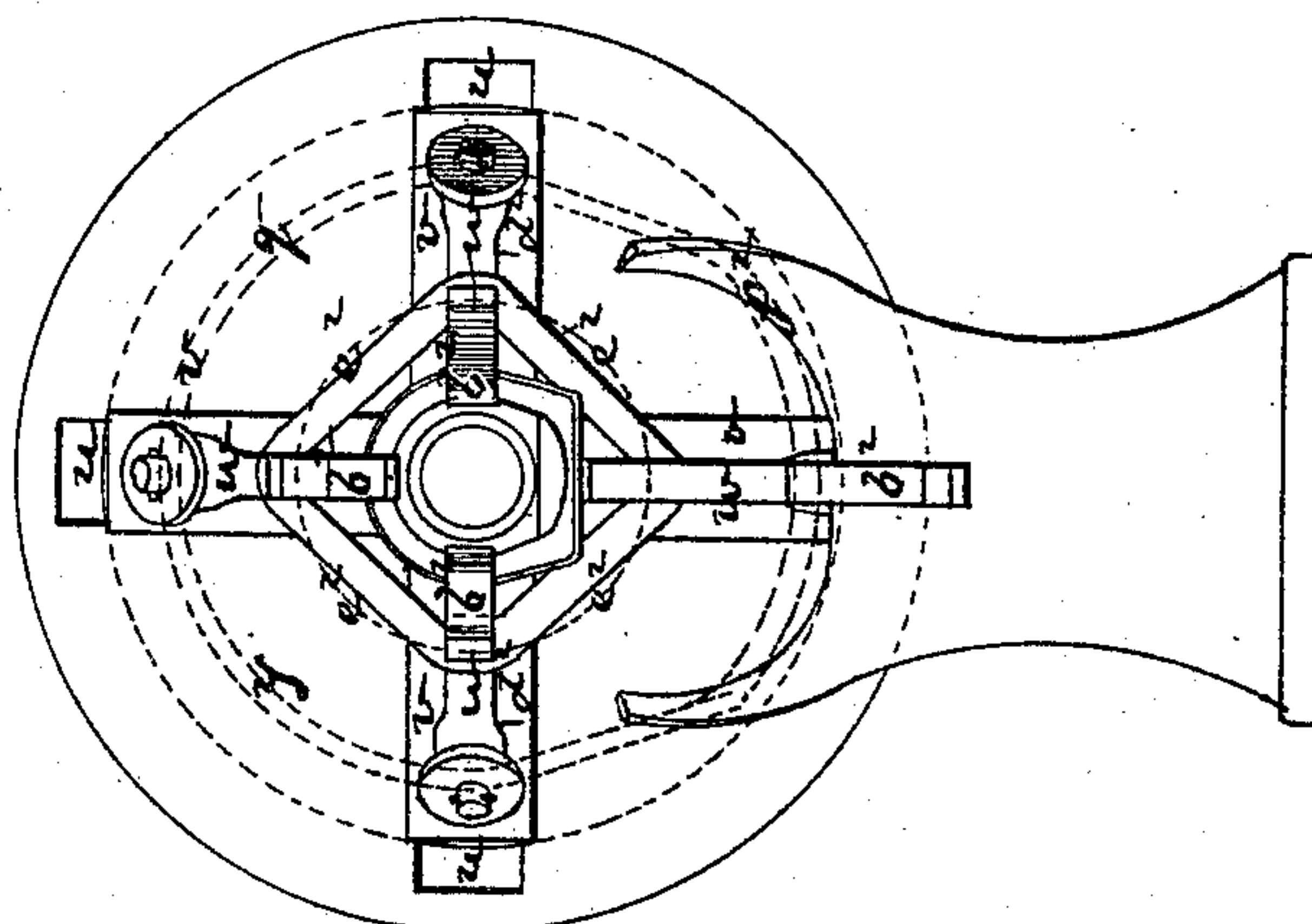


Fig. 3

Witnesses,  
 M. W. Frothingham.  
 L. H. Catimer.

Inventor  
 Charles W. Glidden.  
 By his Atty.  
 Crosby & Foulke

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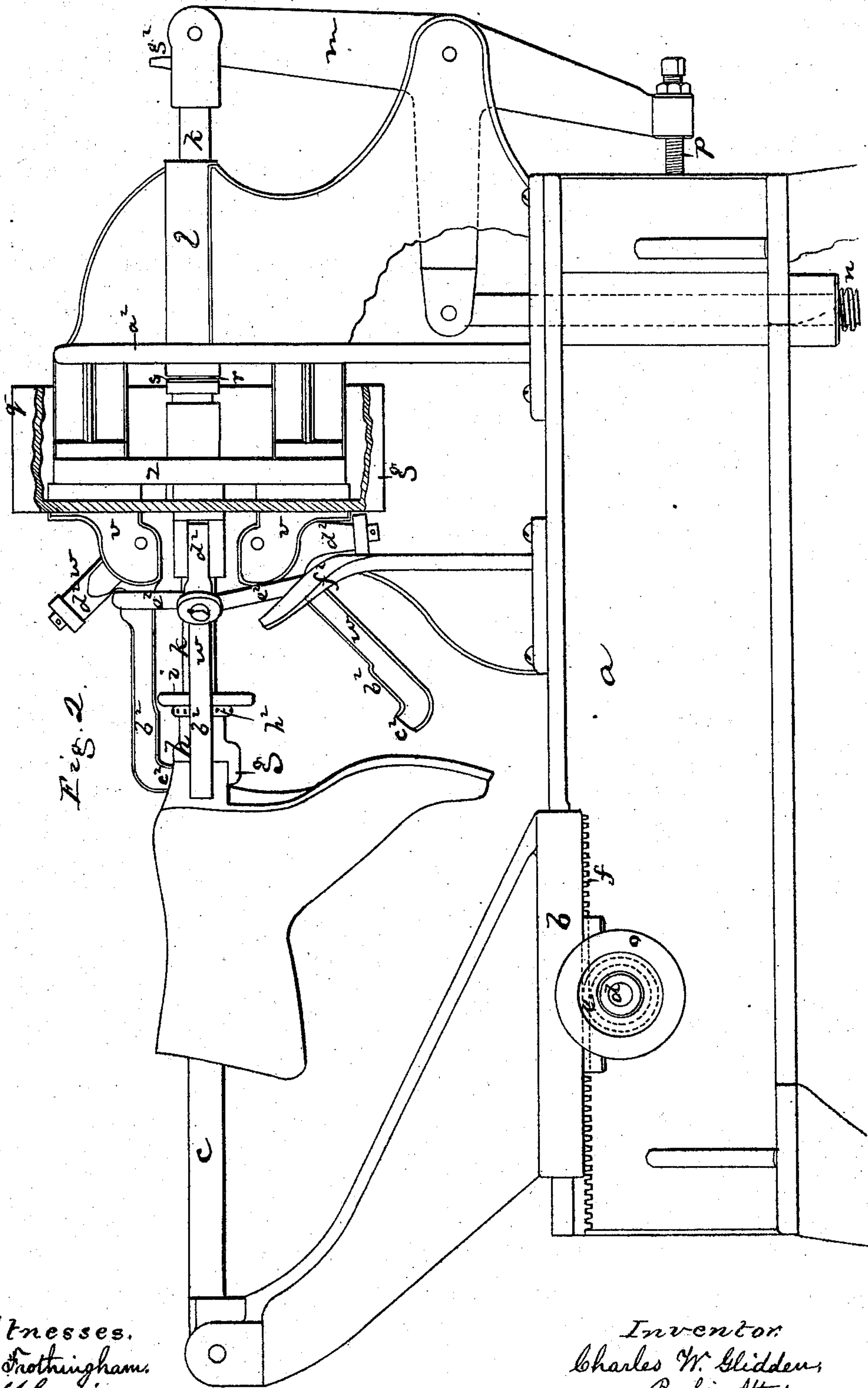


Fig. 2.

Witnesses.  
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# UNITED STATES PATENT OFFICE.

CHARLES W. GLIDDEN, OF LYNN, MASSACHUSETTS, ASSIGNOR TO JAMES W. BROOKS, TRUSTEE, OF BOSTON, MASSACHUSETTS.

## IMPROVEMENT IN MACHINES FOR BURNISHING THE HEELS OF BOOTS AND SHOES.

Specification forming part of Letters Patent No. 143,899, dated October 21, 1873; application filed September 3, 1873.

*To all whom it may concern:*

Be it known that I, CHARLES W. GLIDDEN, of Lynn, in the county of Essex and State of Massachusetts, have invented an Improved Machine for Burnishing the Heels of Boots and Shoes; and I do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

The invention relates to a peculiar construction and arrangement of the mechanism of a machine for burnishing the curved edge of the heels of boots and shoes. In my invention I jack the boot or shoe in position for the action of the burnishing devices, and for the burnishers I use a series of rotary levers or arms, the end face of each of which is made of or with a suitable face to burnish the surface of the heel by frictional rotative contact therewith, these arms being so hung that while each is in position to act against the heel-edge it is brought to and held against such edge by the stress of a suitable spring, while as it passes from the curved heel-edge it is drawn back by suitable mechanism, and passes by the breast of the heel without contact therewith. The invention consists, primarily, in a boot or shoe heel burnishing machine having a series of rotative burnishers moving in the same direction, each of which burnishers, in turn, as it rotates, is brought against the curved heel-edge at one corner of the breast, and, passing over and in contact with such edge, is thrown back therefrom when it reaches the opposite end of the curved surface, remaining out of contact with the heel while it passes by the heel breast or front.

The drawing represents a machine embodying my invention.

Figure 1 shows the machine in plan. Fig. 2 is a side elevation thereof. Fig. 3 shows the burnishers in front elevation.

*a* denotes the bed-frame; *b*, a slide mounted and sliding upon the top of the frame, and having an upright, to which is jointed a last-pin, *c*, upon which the boot or last is jacked. This slide is moved forward by means of a

shaft, *d*, carrying a pinion, *e*, which meshes into a stationary gear-rack, *f*. When the slide is drawn back the boot may be placed upon it or removed from it, and when thrown forward the front or breast of the heel rests upon a flange, *g*, extending from a plate, *h*, against which the heel-tread rests. The edge of this plate may serve as a pattern or guide for the burnishers, although I prefer to employ a pattern-plate, *i*. The tread-plate *h* is fixed upon the inner end of a shaft or pin, *k*, mounted and sliding in a bearing, *l*, and jointed at its outer end to one arm of a lever, *m*, whose other arm is drawn down by the stress of a spring, *n*, to force the shaft forward, the shaft being forced back by the hand-wheel *o*, the extent of its back movement being determined by a set-screw, *p*. Mounted and turning loosely on the shaft *k* is a wheel or pulley, *q*, (kept from end movement by a groove, *r*, and stop *s*,) and in the web *t* of this wheel are radial grooves *u*, in which move slides *v*. These slides project beyond the face of the wheel, and have pivoted to them, respectively, the burnisher-levers *w*. The inner face of each slide carries a pin or roll, extending into a cam-groove, *y*, of a stationary cam-plate, *z*, fastened to the upright *a*<sup>2</sup>. Each lever *w* has a long arm, *b*<sup>2</sup>, at the end of which is the burnisher or burnishing-face *c*<sup>2</sup>, and a short arm, *d*<sup>2</sup>; and the arms *b*<sup>2</sup> are drawn to or toward the pattern-plate *i* and the heel by the stress of a ligature spring, *e*<sup>2</sup>. As the wheel *q* rotates, the burnishers *c*<sup>2</sup> are brought against the curved heel-edge by the stress of the spring, and as each in rotating passes beyond such curved edge its arm *d*<sup>2</sup>, or a roll on said arm, strikes a curved cam-plate, *f*<sup>2</sup>, which is so formed as to press back the arm *d*<sup>2</sup> and draw down the burnisher, holding the burnisher away from the heel while it passes by or under the heel-breast; having passed under which, the arm *d*<sup>2</sup> leaves the plate *f*<sup>2</sup>, the spring again drawing the burnisher to the heel. The respective burnishing-faces may be in different planes, so as to embrace the whole width of heel-edge, and the heel is brought to their action and moved lengthwise under their action by moving the shoe by the hand-wheel *o*. To heat the burnishers, the shaft *k* is made



hollow, or with a gas-pipe,  $g^2$ , leading through it, the end of this pipe terminating in a chamber, from which extend flame or jet holes  $h^2$ . The wheel  $q$  and burnishers may be arranged to rotate in either direction or in each direction.

As the surface of the heel is reduced or compressed by the burnishing operation its arm  $b^2$  will strike the pattern-plate  $i$ , which thus acts to effect the shaping of the burnished surface. The cam  $y$  is made of a form corresponding with the form of the heel, and said cam acts to so position the lever-plates  $v$  as to insure equal or uniform pressure of the burnishers at the respective parts of the curved heel-surface, which parts vary in distance from the center of rotation of the burnishers.

I claim—

1. In combination with a boot or shoe holding mechanism, a series of pivoted rotary burnishers, held against the heel as they pass by the curved edge thereof, and away from said heel as they pass by the breast of the heel.

2. In combination with the burnisher-levers  $w$ , the ligature spring  $e^2$  and the cam-plate  $z$ , for actuating the levers, substantially as described.

3. The gas-tube  $g^2$  and jet or flame orifices  $h^2$ , in combination with the series of rotary burnishers, arranged and operating substantially as described.

4. The method of burnishing boot and shoe heels, consisting in subjecting the curved heel-edge to the progressive frictional action of a series of burnishers passing over its contour from breast to breast without break.

5. In combination with the rotary burnisher-levers  $w$ , the stationary cam-plate  $z$ , substantially as described.

Executed this 26th day of August, A. D. 1873.

C. W. GLIDDEN.

Witnesses:

FRANCIS GOULD,

M. W. FROTHINGHAM.