

(No Model.)

2 Sheets—Sheet 1.

F. L. RICHARDSON.  
SOLE STAINING MACHINE.

No. 483,944.

Patented Oct. 4, 1892.

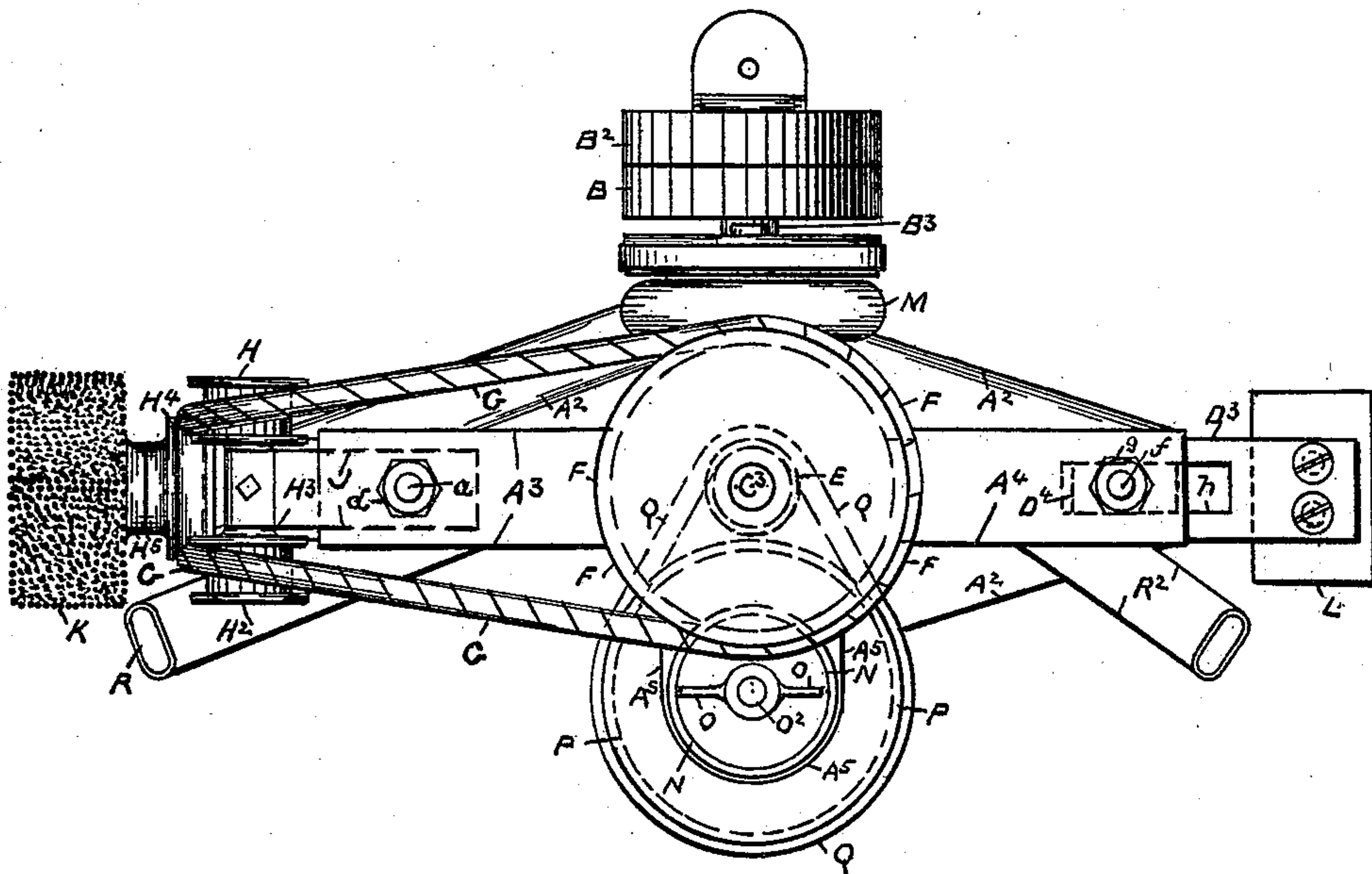


Fig. 1.

WITNESSES:

*Marion E. Brown*

*Frances M. Brown*

INVENTOR:

*Fred L. Richardson*  
by his Attorneys  
*Brown Brothers*

(No Model.)

2 Sheets—Sheet 2.

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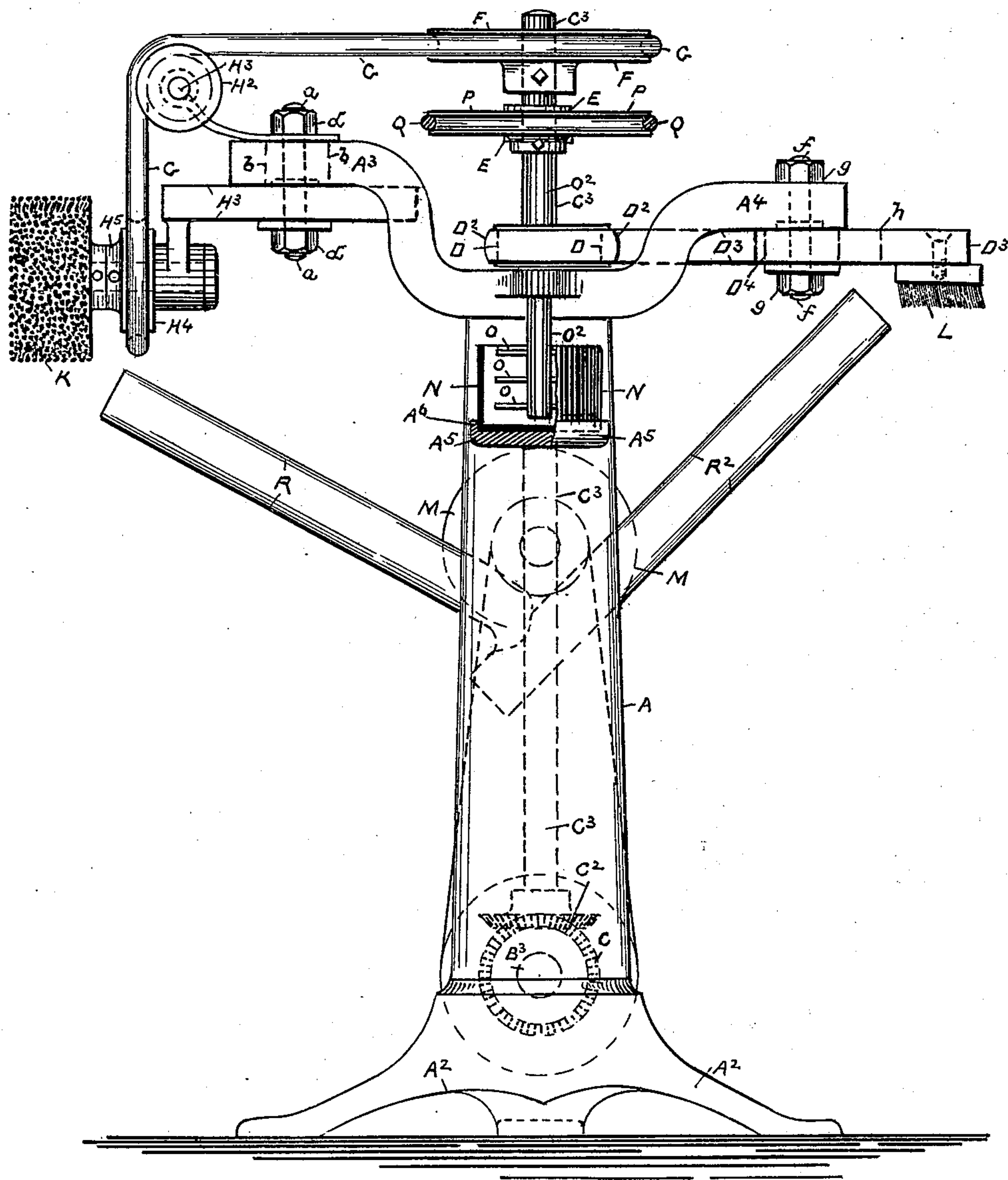


Fig-2

WITNESSES:  
 Marion E. Brown  
 Frances M. Brown,

INVENTOR:  
Fred L. Richardson  
by his Attorneys  
Brown Brothers



# UNITED STATES PATENT OFFICE.

FRED L. RICHARDSON, OF MILFORD, MASSACHUSETTS.

## SOLE-STAINING MACHINE.

SPECIFICATION forming part of Letters Patent No. 483,944, dated October 4, 1892.

Application filed December 11, 1890. Serial No. 374,375. (No model.)

*To all whom it may concern:*

Be it known that I, FRED L. RICHARDSON, a citizen of the United States of America, and a resident of the town of Milford, in the county of Worcester and State of Massachusetts, have invented a certain new and Improved Machine for Staining Boot or Shoe Soles, of which the following is a full, clear, and exact description.

This invention relates to an organized machine to be used in staining soles of boots or shoes. This machine, in substance, comprises a suitable standard or post for the support of the working and stationary parts of the machine, a continuously-rotating brush, a continuously and rectilinearly reciprocating brush, and mechanism for driving each brush, in combination with air-suction chutes or ducts, one for and leading from each brush at or near its plane of operation, and all otherwise, as hereinafter described, and pointed out in the claim.

In the drawings forming part of this specification, Figure 1 is a plan view, and Fig. 2 is a front elevation.

In the drawings, A is a hollow standard or post having a leg-base A<sup>2</sup>, and at its upper end portion horizontal side extensions A<sup>3</sup> A<sup>4</sup> in opposite directions from the post, and below said extensions is a horizontal shelf A<sup>5</sup>, the whole making the support for the several working and stationary parts of the machine.

B B<sup>2</sup> are fixed and loose pulleys of a horizontal shaft B<sup>3</sup>, that turns in suitable bearings at the lower end portion of the post A. The shaft B<sup>3</sup> is the driving-shaft of the machine, and the pulleys are to be suitably belted from the driving power to secure the driving of the shaft.

C is a fixed vertical gear-wheel of the driving-shaft B<sup>3</sup> and in mesh with a horizontal gear-wheel C<sup>2</sup> at lower end of a vertical shaft C<sup>3</sup>. The vertical shaft C<sup>3</sup> is on the inside of and is axially coincident with and it turns in suitable fixed bearings of the post A. The vertical shaft C<sup>3</sup> extends above the horizontal side extension A<sup>3</sup> A<sup>4</sup> of post A, and its said extension has a horizontal eccentric wheel D and two horizontal pulleys E and F, severally located above each other and all rotating in common with the rotation of the vertical shaft C<sup>3</sup>.

G is a belt surrounding upper pulley F,

and thence by its two lengths it passes over separate vertical guide-pulleys H H<sup>2</sup> of a common horizontal shaft H<sup>3</sup>, which turns in suitable bearings of the side extension A<sup>3</sup> of post A, and thence to and around the under side of a vertical pulley H<sup>4</sup> on a horizontal axle H<sup>5</sup>, turning in bearings of a horizontal arm J, that is at the under side of and is secured to said side extension A<sup>3</sup> by a screw-bolt *a*, passing through a lengthwise slot *b* of said extension and the thickness of said arm J and screw-nuts *d* screwed onto the projecting end of said bolt. Tightening up the screw-nuts *d* firmly attaches the arm J to said side extension A<sup>3</sup> of post A, and loosening the screw-nuts releases said arm for movement on said side extension to adjust the pulley H<sup>4</sup>, as may be found necessary.

K is a horizontal and cylindrical brush secured on axle H<sup>5</sup> of, and rotating in common with, pulley H<sup>4</sup>. This brush is continuously rotated by the pulley and belt connection just explained from the rotation of the vertical shaft C<sup>3</sup>.

D<sup>2</sup> is a strap surrounding the eccentric D. This strap is at one end of a horizontal rod D<sup>3</sup>, that extends along the under side of the side extension A<sup>4</sup> of post A and is fulcrumed and secured thereon by means of a screw-bolt *f* and screw-nuts *g g*, screwed onto the opposite ends of said bolt. The screw-bolt *f* passes loosely through an elongated block D<sup>4</sup>, located in a lengthwise slot *h* of the rod D<sup>3</sup> of eccentric-strap D<sup>2</sup>.

L is a flat brush secured to rod D<sup>3</sup> at its outer end and under side.

By the eccentric and other means of connection above described the flat brush L is continuously and rectilinearly reciprocated by the rotation of the vertical shaft C<sup>3</sup>, driven as explained.

The rotating and the rectilinearly-reciprocating brushes described are on opposite sides of the post of the machine and both are operated, as explained, by a common vertical shaft C<sup>3</sup>.

The boot or shoe sole after having the common or other suitable stain applied to it, is first submitted to the rotating brush and then to the rectilinearly-reciprocating brush, by all of which in the first case the stain is distributed about and over the sole,



and in the second case is rubbed, as it were, into the sole and most thoroughly evened and smoothed.

In the operation of the brushes, as explained and as is obvious, more or less dust is thrown off, which for obvious reasons it is desirable should be in some manner taken care of. To this end air-suction chutes  $R R^2$  are provided—one for each of the brushes. Each chute leads from at or near the plane of operation of the brush to which it belongs to the inside of the post A, all so that with an air-suction blower M, (shown in blank and of any or the well-known forms of construction and arrangement of parts of itself constituting no portion of this invention,) suitably located in relation to the open ends of said chutes within the post and suitably driven, air will be drawn through the chutes from their open ends near the brushes, carrying with it the dust thrown off by each of the brushes in its operation on the boot or shoe sole.

N is a basin seated in a recess  $A^6$  at the upper side of the shelf  $A^5$  of the post A. This basin is for holding the liquid material to be used for staining boot or shoe soles, and to keep this material from settling an agitating device is used, composed, for instance, of horizontal arms O O and a common vertical shaft  $O^2$ , arranged to turn in suitable bearings of the post and having at its upper end portion a pulley P, driven by a belt Q from the pulley E of the vertical shaft  $C^3$  of the machine.

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

A hollow post A, with horizontal arm extensions  $A^3 A^4$  at its upper end and on its opposite sides, a rotating vertical shaft  $C^3$  within said post, an eccentric D and pulley F on said shaft and above said side arms, a rectilinear and horizontal reciprocating brush L of said arm  $A^4$ , a rotating brush K of said arm  $A^3$ , means to reciprocate said brush L, consisting of said eccentric D, an eccentric-strap  $D^4$ , having an extension  $D^3$ , with a slot  $h$  and a block fitting and held in said slot  $h$  and to said arm  $A^4$  by screw-bolts  $f$  and nuts  $g$ , and means to rotate said brush K, consisting of said pulley F, a pulley  $H^4$  of the brush, guide-pulleys  $H H^2$  of said arm  $A^3$ , and a belt G, connecting said pulleys F  $H^4$  and guided by said guide-pulleys  $H H^2$ , in combination with air-chutes  $R R^2$ , respectively, leading downward from said brushes K L and both opening into the hollow post A, and an air-suction blower adapted and arranged to draw air downward through said chutes and to discharge into said post, all as described, for the purpose specified.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

FRED L. RICHARDSON.

Witnesses:

ALBERT W. BROWN,  
FRANCES M. BROWN.