

(No Model.)

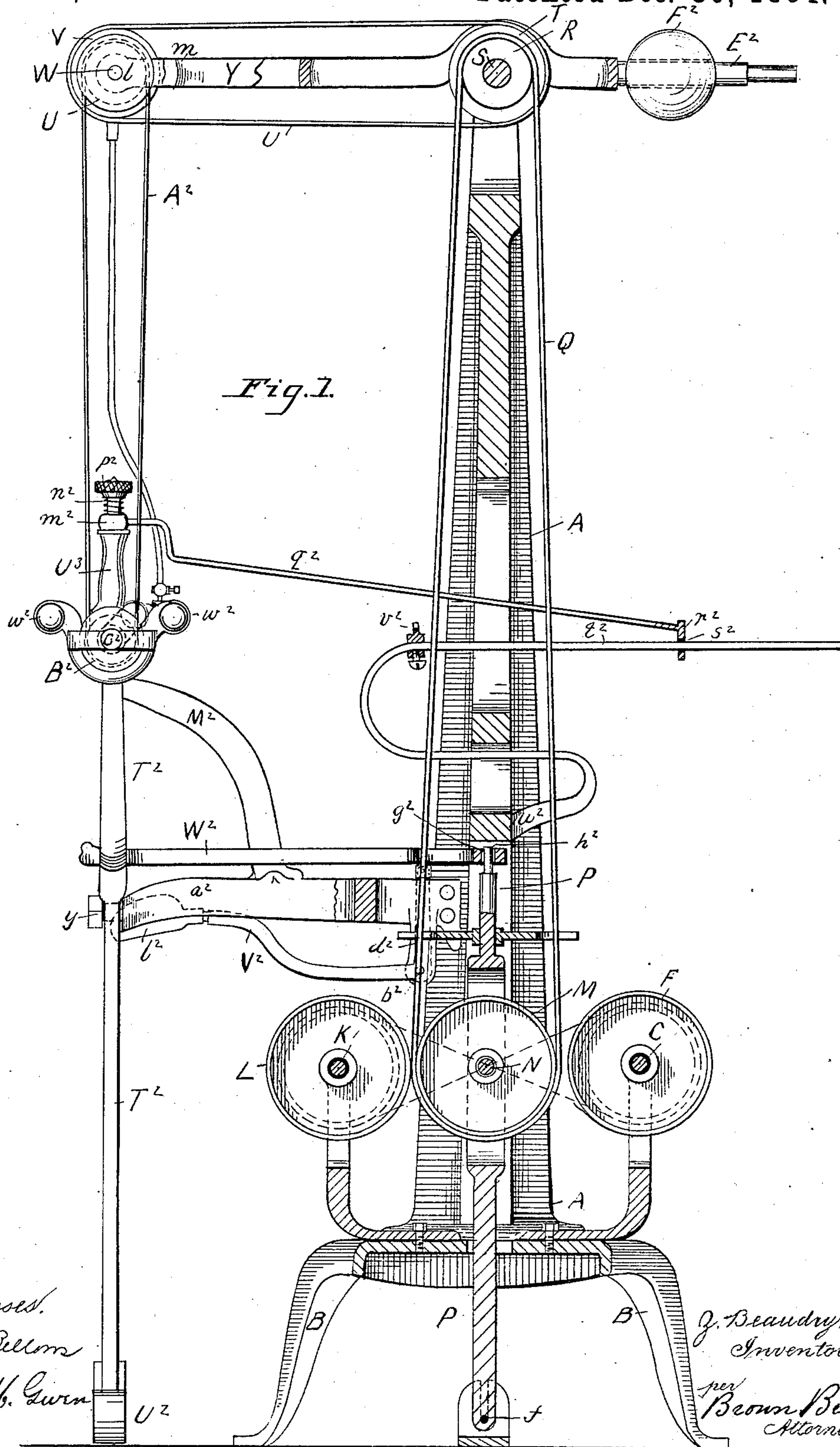
2 Sheets—Sheet 1.

Z. BEAUDRY.

MACHINE FOR BURNISHING THE SOLES OF BOOTS OR SHOES.

No. 310,117.

Patented Dec. 30, 1884.



Witnesses.  
 Wm. L. Bellom  
 Geo. W. M. Gwin

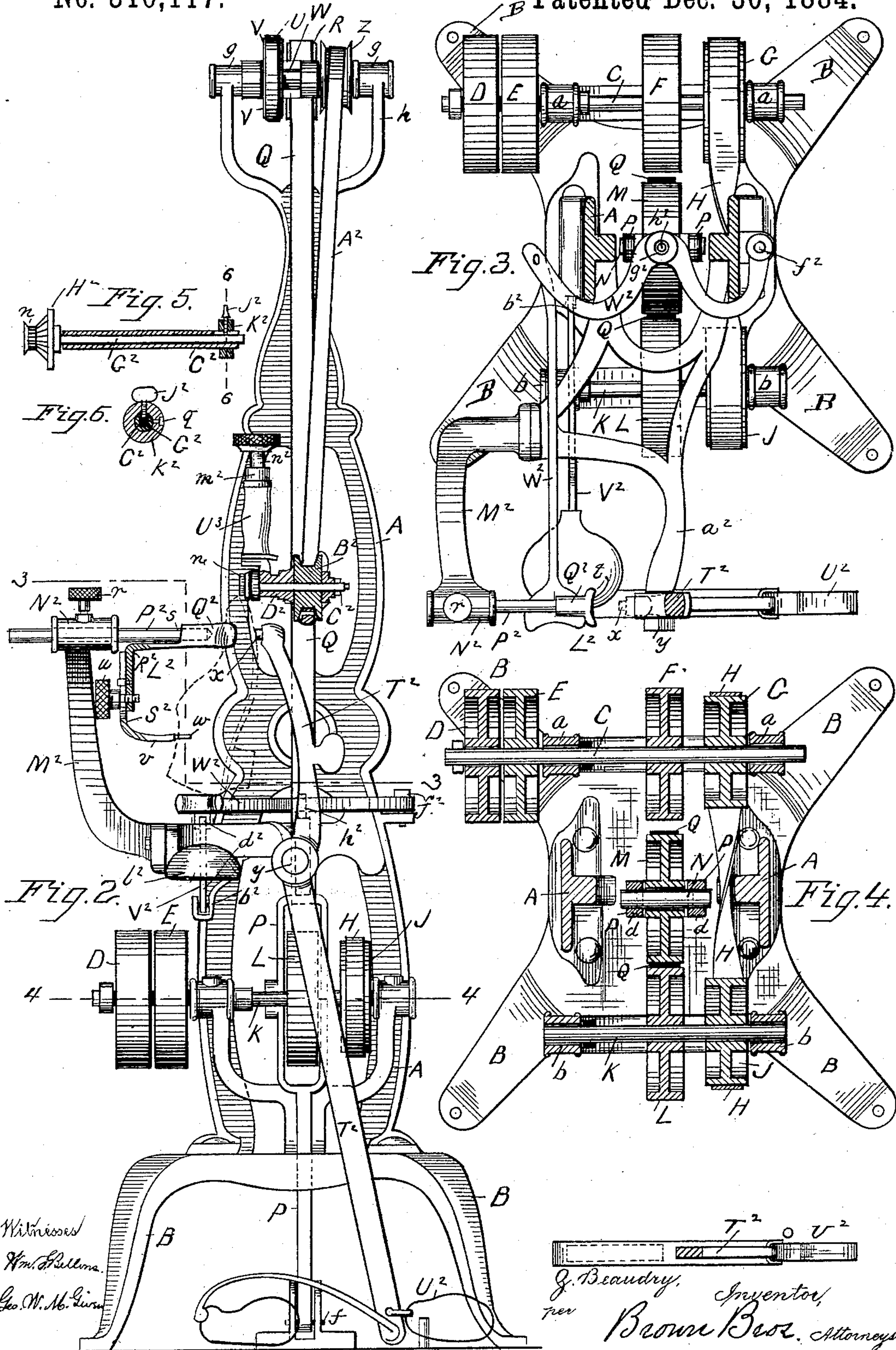
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Witnesses  
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# UNITED STATES PATENT OFFICE.

ZOTIQUE BEAUDRY, OF LYNN, MASSACHUSETTS.

## MACHINE FOR BURNISHING THE SOLES OF BOOTS OR SHOES.

SPECIFICATION forming part of Letters Patent No. 310,117, dated December 30, 1884.

Application filed December 18, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, ZOTIQUE BEAUDRY, of Lynn, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Machines for Burnishing the Soles of Boots or Shoes, of which the following is a full, clear, and exact description.

This invention relates to a machine for burnishing the edges of soles of boots and shoes; and it consists in a construction and arrangement of the parts constituting such a machine, all substantially as hereinafter described.

In the accompanying plates of drawings is illustrated a machine for burnishing the edges of boot and shoe soles constructed according to this invention.

In Plate 1, Figure 1 is a view in side elevation and partial vertical cross-section. In Plate 2, Fig. 2 is a front elevation. Figs. 3 and 4 are cross-sections on lines 3 3 and 4 4, respectively, Fig. 2; Figs. 5 and 6, detail sectional views, to be hereinafter referred to.

In the drawings, A represents a frame or stand, having legs B, on which frame or stand the various moving and other parts are supported.

C is a horizontal shaft turning in suitable bearings, *a*, in the frame A, and carrying pulleys D, E, F, and G. The pulley E is the driving-pulley, and is rigidly connected to said shaft, and is driven by belt from any suitable driving mechanism.

D is a loose pulley onto which the driving-belt for pulley E is shipped when not operating the machine. Pulleys F and G are fixed to and turn with the shaft C. The pulley G is connected by a cross-belt, H, with a pulley, J, fixed to a horizontal shaft, K, parallel to the shaft C, and turning in suitable bearings, *b*, in the frame A, and carrying another pulley, L, in line with the pulley F. These several pulleys are all on the same horizontal plane.

M is a pulley in line with and between the pulleys F and L, and arranged to turn by its shaft N in suitable bearings, *d*, in the upper end of an upright bar, P, pivoted at its lower end to the floor at *f*. This pulley M is connected by a belt, Q, with a pulley, R, above it,

and on a shaft, S, which turns in suitable bearings at *g* in the upper end, *h*, of the frame. Attached to this pulley R is a pulley, T, from which a belt, U, extends to and around a pulley, V, of a shaft, W, arranged to turn in bearings *l* in the end *m* of an arm, Y, attached to and arranged to rock or oscillate in a vertical direction on shaft S. The shaft W carries a pulley, Z, connected by a belt, A<sup>2</sup>, with a pulley, B<sup>2</sup>, on a shaft, C<sup>2</sup>, of burnisher-tool D<sup>2</sup>. The arm Y has an extension, E<sup>2</sup>, back of its shaft S, having a weight, F<sup>2</sup>, arranged to slide back and forth thereon, by which to balance and adjust the end *m* of the arm and the parts carried by it, as shown more particularly in Fig. 1. Power communicated to shaft C revolves the pulleys F and G, and through the cross-belt H the pulleys J and L, the crossing of the belt revolving the pulleys J and L in a reverse direction to the pulleys F and G. The pulleys F and L are friction-pulleys, and act on the pulley M, as it is placed in contact with either the one or the other of said pulleys, which is secured by swinging the arm P in the proper direction therefor, and when so placed in contact the pulley M is revolved, and through the several pulleys and belts between said pulley M and the pulley B<sup>2</sup> on the burnisher-tool said pulley B<sup>2</sup> and its shaft C<sup>2</sup> are caused to revolve in the one or the other direction, as the case may be.

The shaft C<sup>2</sup> of the burnisher-tool, as shown more particularly in Figs. 5 and 6, is of tubular form, turning in suitable bearings in the burnisher, in which shaft is a rod or spindle, G<sup>2</sup>, carrying on one end the burnisher-head H<sup>2</sup>. This rod or spindle G<sup>2</sup> is adapted to be easily inserted and removed from said tubular shaft, as desired, and to turn therewith when in said shaft it is secured thereto by a thumb-screw, J<sup>2</sup>, screwing into a collar, K<sup>2</sup>, secured by a set-screw, *q*, to the tubular shaft, which thumb-screw passes loosely through one side of said tubular shaft and bears against said rod or spindle. The burnisher-head H<sup>2</sup> is circular in form, and by its edge *n*, as it is revolved by said tubular shaft, the edge of the boot or shoe sole is burnished, as usual. Loosening said thumb-screw, the burnisher-head, with its spindle, can be removed from said



shaft, and this mode of removing and inserting or attaching the burnisher-head by its rod or spindle to the said tubular shaft  $C^2$  enables various sizes of and shaped heads to be attached to the said shaft  $C^2$  and used as desired, and when so attached to be secure from any liability to become loose or detached when in operation.

$L^2$  is the jack for supporting and holding the boot or shoe to be burnished, and it is constructed as follows:

$M^2$  is an arm of the frame  $A$ , having on its upper end a horizontal sleeve,  $N^2$ , in which a rod,  $P^2$ , is arranged to freely slide forward and backward, and to be secure against movement, when desired, by a set-screw,  $r$ , in the sleeve. The rod or arm  $P^2$  carries on its end toward the frame a head-piece,  $Q^2$ , adapted to fit by a socket over and swivel on said end  $s$ , its face  $t$  being concave, as shown in Fig. 3. An arm,  $R^2$ , of this head-piece  $Q^2$  extends horizontally and then downward, having attached to it by slot and set-screw  $u$  an arm,  $S^2$ , so it can be adjusted vertically thereon, its horizontal portion  $v$  extending toward the frame, and adapted to fit in a hole in the last by its end  $w$ .

The boot to be operated upon by the burnisher-head  $H^2$ , with a last properly inserted therein, is placed by its toe against the hollow face  $t$  of the head-piece  $Q^2$  and the end  $w$  of arm  $S^2$  inserted in a hole in the last.

To hold the boot firmly against the head-piece  $Q^2$  and arm  $S^2$ , the end  $x$  of a lever,  $T^2$ , pivoted at  $y$  to an arm,  $a^2$ , of the frame  $A$ , is arranged to bear against the treading-surface of the sole of the boot in a line coincident with the center of the head-piece  $Q^2$ . This lever  $T^2$  extends below its pivot  $y$  to the floor, having a loop,  $U^2$ , made of leather, &c., attached to its lower end, in which the right foot of the operator is inserted for operating the lever, and which, moved to the right, firmly holds the end  $x$  against the boot, and thus secures the boot to the jack for the proper operation of the burnisher-tool.

The carrying parts of the jack and the length of the belt  $A^2$ , with the arm  $Y$  in substantially a horizontal position, are so arranged relatively to each other as to be all in proper position for a convenient and practical operation of the burnishing-tool.

To burnish the edges of a boot or shoe sole, first secure the boot to the jack, as described; then take hold of the boot at its back or heel portion by the left hand and with the tool  $D^2$  by its handle  $U^3$  in the right hand, at the same time causing the burnisher-head to be revolved; apply and press the working-edge  $n$  of the burnisher-head to the edge of the boot or shoe sole, turning the boot on its swivel-joint  $Q^2$  back and forth until the entire edge of said sole has been presented to and acted upon by the burnisher-head, and as many times as is necessary for the thorough burnishing of the same. In such operation it is

necessary that as the boot is turned its edge-surface where being burnished should move in a reverse direction to the direction in which the acting portion of the circular edge  $n$  of the burnisher-head moves—that is, the working-surface of the tool and the edge of the sole being acted upon should not at such time move in the same direction.

To effectually and practically burnish or polish the edge of the boot or shoe sole, its edge should be rubbed by the burnisher-head a more or less number of times, and therefore time is saved by reversing the motion of the burnisher-head and correspondingly the movement of the boot, as is obvious; and in order to secure the respective reverse motions, as desired, of the sole-edge and burnisher-head and keep the tool as constantly at work as possible, losing no time in operating the machine, the reversing of the rotation of the burnisher-head must be done quickly and on the instant, and this is accomplished by the present invention by simply swinging the arm  $P$  forward or backward, as the case may be, for the pulley  $M$  to be in contact with either one or the other of the pulleys  $F$   $L$ . To operate said arm  $P$  conveniently, a horizontal arm,  $V^2$ , is provided, it being pivoted to the frame at  $b^2$ , and by its angular arm  $d^2$ , pivoted to another horizontal arm,  $W^2$ , adapted to swing horizontally on a pivot,  $f^2$ , of the frame  $A$ , said arm  $W^2$  being attached by its socket  $g^2$  to the end  $h^2$  of the arm  $P$ , carrying the pulley  $M$ . Both of these arms  $V^2$  and  $W^2$  extend toward the front in convenient positions for the one,  $V^2$ , to be raised by the knee of the operator when he is sitting down, and for the other,  $W^2$ , to be pushed by his body when he is standing.

Raising the arm  $V^2$  or pushing the arm  $W^2$  by their connection, as described, with the arm  $P$  puts the pulley  $M$  in contact with the pulley  $F$ , and relieving the arm  $V^2$  or arm  $W^2$  of the knee or body of the operator, the end of arm  $V^2$ , which is weighted, as at  $l^2$ , for the purpose, returns the pulley  $M$  to its contact with pulley  $L$ , which is constantly maintained except when operated as above described. The reversing of the motion of the pulley  $M$ , and the consequent change of rotation of the burnisher-head, is thus secured in a simple, easy, and quick manner.

From a collar,  $m^2$ , arranged to swivel on the rod  $n^2$  of handle  $U^3$  of burnisher-tool, which collar is secure from escape by a set-screw,  $p^2$ , an arm,  $q^2$ , extends backward, its end  $r^2$  having an opening,  $s^2$ , to freely slide over and rest on a horizontal rod,  $t^2$ , attached to the frame  $A$  at  $u^2$ . On this arm  $t^2$  is an upward projection,  $v^2$ , having a concave upper surface extending across the arm, on which the arm  $q^2$  can rest when the tool is not being used, and to have it convenient for the operator.

The swiveling of the collar  $m^2$  on the tool enables the tool to be turned or swiveled, as desired, to accommodate its working-edge to the various changes of the outline of the sole



of the boot. The tool is weighted, as at  $w^2$ , so as to retain its balance against the pull of the belt in revolving its shaft, and it, with the belt, is preferably heavier than the weight  $F^2$  when adjusted, in order to assist more or less the operator when burnishing the sole-edge. This weight  $F^2$  keeps the belt  $A^2$  tight at whatever height the tool is held when operating it.

As shown, the pulleys  $F$  and  $L$ , in their action on the pulley  $M$ , bear directly against the belt  $Q$  where it is in contact with the pulley  $M$ ; but, as is obvious, the pulleys can bear directly against each other—as, for instance, the pulley  $M$  could be of a width sufficient for the pulleys  $F$  and  $L$  to bear on it outside of the belt, and in such case the peripheries of said pulleys could be flat or of  $V$  shape in cross-section. It is preferable, however, to have some elastic material—such as leather—on their bearing-surfaces.

The pulley  $M$  can be moved between the pulleys  $F$  and  $L$  for the purposes of this invention in other ways—as, for instance, by sliding on guideways suitably arranged therefor; also, the pulley  $L$  can be driven independently of the pulley  $F$ , preserving, however, its rotation in a reverse direction.

The jack for holding the boot or shoe and the burnisher-tool and their operating parts are all on the same stand, so that the machine is compact, convenient for transportation, and requires no setting up nor adjustment of the parts nor of the jack to the burnisher-tool when the machine is moved from place to place.

In lieu of having the end of lever  $V^2$  weighted, as described, it can have a spring attached to it to return it to its normal position.

It is obvious that other burnishing-tools can be used in lieu of the one herein particularly described, and also that an edge-trimming tool for boots and shoes can be substituted for a burnishing-tool without departing from this invention.

Having thus described my invention, what I claim is—

1. The combination, with a tool for burnishing the edges of boot and shoe soles, constructed and arranged substantially as described, to be rotated by belts and pulleys, of a pulley arranged to be moved forward and

backward between two driving-pulleys adapted to be revolved in reverse directions by means of a cross-belt.

2. The combination, with the pulleys  $F$  and  $G$  and  $J$  and  $L$ , said pulleys  $J$  and  $G$  being arranged to revolve in opposite directions, of a pulley,  $M$ , connected to the burnisher-tool by belts for operation thereof, and carried by a swinging frame,  $P$ , provided with means for operating said frame, for the purpose specified.

3. The combination, with the pulleys  $F$  and  $G$  and  $J$  and  $L$ , said pulleys  $G$  and  $J$  being connected by a cross-belt,  $H$ , of a pulley,  $M$ , connected to the burnisher-tool by belts for operation thereof, carried by a swinging frame,  $P$ , operated by an arm,  $V^2$  or  $W^2$ , substantially as and for the purpose specified.

4. A tool for burnishing the edges of boot and shoe soles, provided with an arm,  $q^2$ , arranged to slide and rest on a supporting-arm,  $t^2$ , of the frame  $A$ , substantially as and for the purpose described.

5. The combination, with pulleys  $G$  and  $J$ , arranged to revolve in reverse directions, of a pulley,  $M$ , connected to the burnisher-tool by belts for operation thereof, carried by a swinging frame,  $P$ , having an arm,  $V^2$ , for operating the same, weighted at its end, substantially as and for the purpose specified.

6. In a burnisher-tool, a head,  $H^2$ , rigidly attached to one end of a rod,  $G^2$ , detachably secured in a tubular shaft,  $C^2$ , said shaft  $C^2$  being adapted to be rotated, substantially as and for the purpose specified.

7. The combination, with a burnisher-tool having a swiveling collar,  $m^2$ , and arm  $q^2$ , attached thereto, of an arm,  $t^2$ , of the frame, on which said arm  $q^2$  can slide and rest, substantially as and for the purpose specified.

8. A tool for burnishing the edges of boot and shoe soles, provided with an arm,  $q^2$ , arranged to slide on a supporting-arm,  $t^2$ , of the frame  $A$ , having a concave projection,  $v^2$ , substantially as and for the purpose specified.

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

ZOTIQUE BEAUDRY.

Witnesses:

EDWIN W. BROWN,  
WM. S. BELLOWS.