

(No Model.)

2 Sheets—Sheet 1.

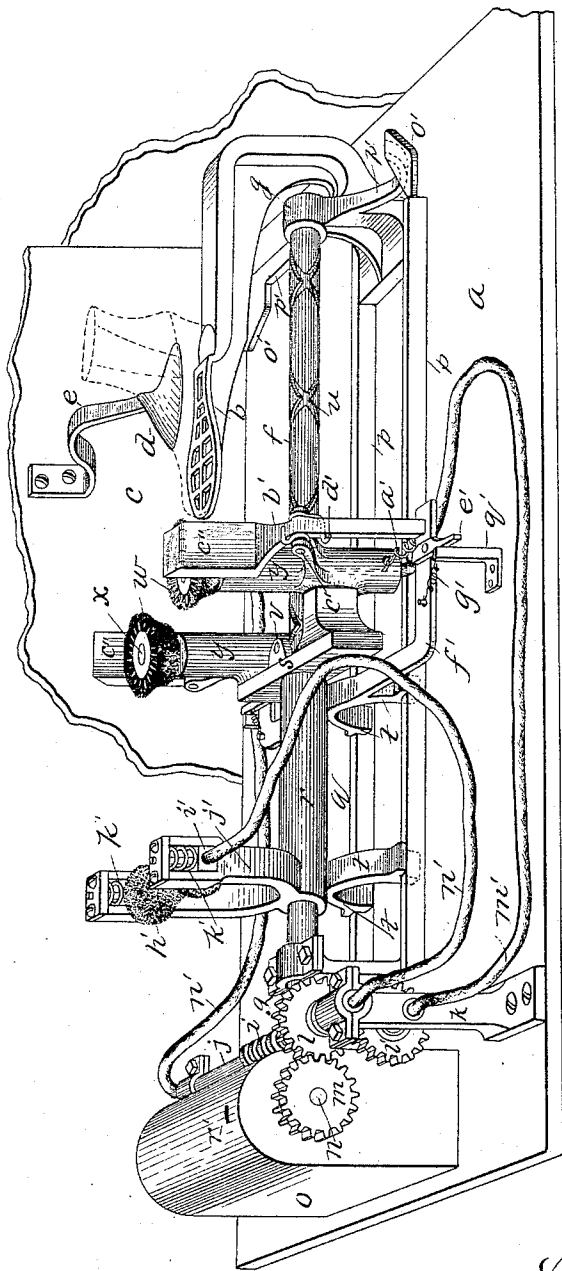
W. H. GILMAN.

MACHINE FOR BLACKING AND POLISHING BOOTS OR SHOES.

No. 460,335.

Patented Sept. 29, 1891.

FIG. 1.



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FIG. 2.

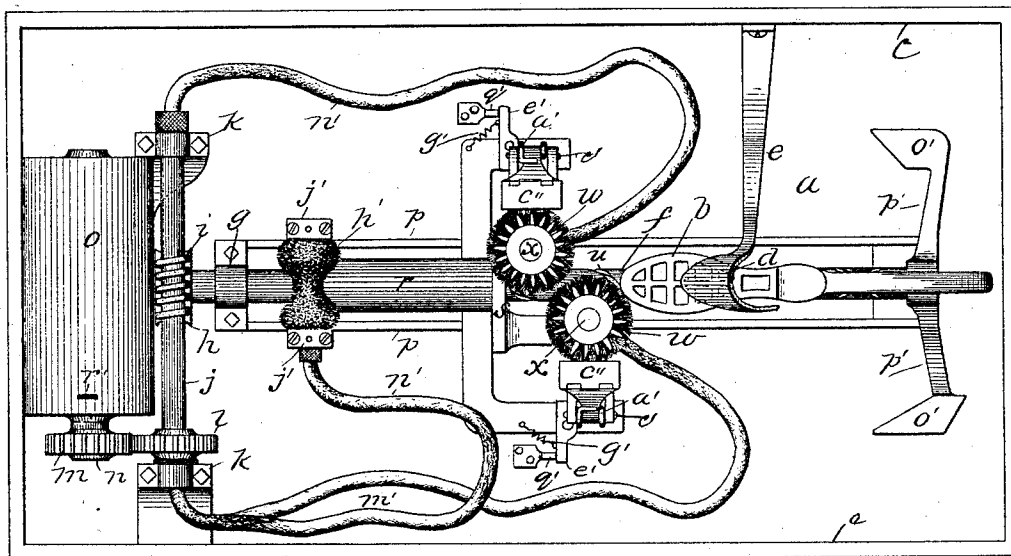
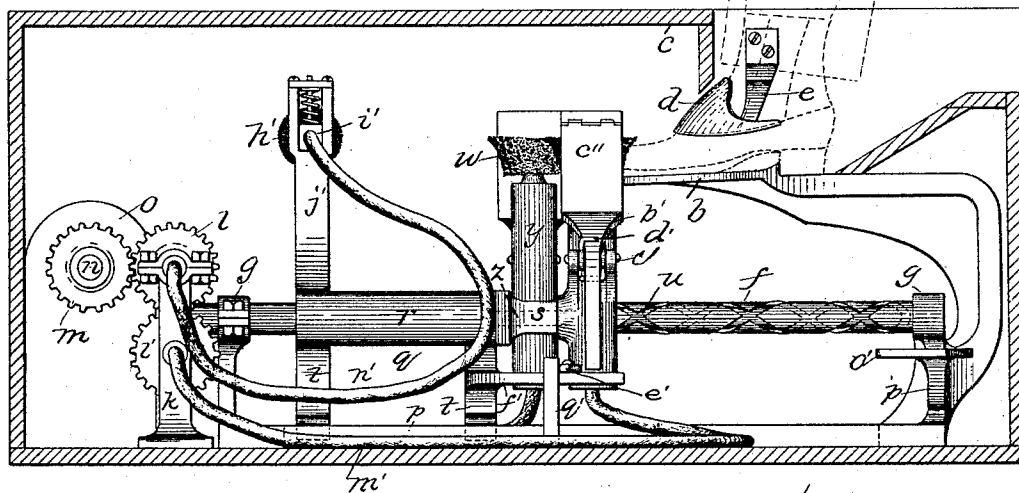


FIG. 3.



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UNITED STATES PATENT OFFICE.

WILLARD H. GILMAN, OF BOSTON, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO EMERY OSGOOD BICKNELL, OF SAME PLACE.

MACHINE FOR BLACKING AND POLISHING BOOTS OR SHOES.

SPECIFICATION forming part of Letters Patent No. 460,335, dated September 29, 1891.

Application filed August 3, 1891. Serial No. 401,448. (No model.)

To all whom it may concern:

Be it known that I, WILLARD HERBERT GILMAN, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Machines for Blacking and Polishing Boots or Shoes, (application for Letters Patent for the same invention having been made in the Dominion of Canada,) of which the following is a specification.

It is the object of this invention to provide a simple, inexpensive, and entirely efficient contrivance for thoroughly and quickly cleaning, blacking, and polishing boots or shoes, adapting the machine to be operated by an electric or other suitable motor, which may be started by dropping a coin into a receptacle or in any other desired way.

The invention consists of a boot blacking and polishing machine comprising in its construction rotary brushes for polishing the sides, heel, and toe of a boot or shoe, a reciprocating carriage supporting the said brushes, a suitable motor, and flexible shafts connecting the motor with the brushes for operating the latter.

The invention also consists of combinations of parts incidental to the foregoing, all as is hereinafter more fully described and claimed.

Reference is to be had to the annexed drawings, and to the letters of reference marked thereon, forming a part of this specification, the same letters designating the same parts or features, as the case may be, wherever they occur.

Of the drawings, Figure 1 is a perspective view of the machine, a part of the box or frame being represented as broken away. Fig. 2 is a top plan view of the machine. Fig. 3 represents a side view of the same, the box being represented in section.

In carrying out my invention a base *a* may be provided suitable for supporting the various parts of the machine.

b is a foot-rest connected with the base *a* and properly arranged in a box or side casing *c*.

d is a guard constructed and arranged to cover the instep. It may also cover a part of the ankle portion of the boot or shoe to be op-

erated upon. The guard *d* may be rigidly mounted, but is preferably, as shown, connected with a spring or yielding support *e*, and it may itself be yielding, so as to adapt it to cover and protect the instep part of boots or shoes of varying size.

f designates a rotary shaft supported in suitable bearings *g*, on one end of which shaft is a worm-gear *h*, which is engaged by a worm *i* on a transverse shaft *j*, supported in suitable bearings in the brackets *k*. The shaft *j* is provided with a gear *l*, which is engaged by a gear *m* on the shaft *n*, which may be supposed to be operated by an electric motor inclosed in the casing *o*.

p p designate rails or tracks connected with the base *a*, upon which the carrier *q* is adapted to reciprocate. The said carrier consists of the sleeve *r*, surrounding the rotary shaft *f*, provided at its forward end with the cross-head *s* and having legs *t*, the feet of which rest upon the tracks *p*.

The forward end of the shaft *f* is provided with a double worm-groove *u*, in which is arranged a traveler (not shown) of common construction, swiveled on the lower end of a bolt *v*, arranged in lugs or projections connected with the cross-head *s*.

w designates brushes secured to the upper ends of rotary shafts *x*, arranged in elongated bearings *y*, pivoted upon bolts connected with the cross-head *s*, as indicated by dotted lines *z* in Fig. 3. A spring *a'*, connected at one end with the lower end of the bearing *y* and at the opposite end with a stationary part of the machine, operates with a tendency to throw the upper ends of the bearings *y*, and consequently the brushes *w*, inward and to draw the lower ends of said bearings outward.

b' designate arms pivoted at *c'* upon the bearings *y*. The upper ends of the said arms are provided with boxes *c''*, constructed to receive a suitable shoe blacking or polishing compound. A spring *d'* is connected with each of the said arms and its supports at the pivotal point and operates with a tendency to press the upper end of the arm, and consequently the box *c''*, into contact with the brushes to supply blacking thereto.

e' designates latches pivoted upon brackets *f'*, connected with the carrier *q*. Each of the said latches is provided with a spring *g'*, connected at one end to one arm of the latch and at the other end to a stationary part of the carrier and tending to hold the end of the inner arm of the latch normally against the lower end of its adjacent arm *b'* when the carrier is in its rearward position.

h' designates a brush horizontally arranged on a shaft having its bearings in boxes *i'*, arranged in a bracket *j'*, connected with the sleeve *r*. The boxes *i'* are constructed and arranged to have a limited sliding movement in the bracket *j'*, being held down normally by means of springs *k'*.

l' designates a gear engaged by the gear *l* on the shaft *j*, the journal of the said gear *l'* being connected with one end of a flexible shaft *m'*, the opposite end of the latter being connected with the shaft *x* of one of the rotary brushes *w*. The shaft of the other rotary brush, as also the journal of the brush *h'*, are connected by means of flexible shafts *n'* with the ends of the shafts *j*.

o' are cams or inclines arranged on the inner ends of the brackets *p'*, connected with a stationary part of the machine at the forward end thereof, and *q'* are stationary stops extending up from the bed *a* and arranged so as to strike the outer ends of the latches *e'* and move them on their pivots against the stress of the springs *g'* when the carrier reaches the rearward limit of its movement and move the inner ends of the latches away from the lower ends of arms *b'*, as is represented in Fig. 1.

It is to be noted that one of the brushes *w* is arranged a little in advance of the other and that the brush *h'* (which may be termed the "toe-brush") is arranged to the rear of the brushes *w*.

In some instances means for supplying blacking to the toe-brush may be employed, though where the bristles of the brushes *w* extend over on the top of the forward part of the foot this will not ordinarily be necessary.

The operation of the invention is as follows: The user having placed his foot with a boot or shoe thereon upon the foot-rest *b* and under and against the instep-guard *d*, the machine may be set in motion by dropping a coin into the slot *r'* of the box *o*, closing an electric circuit and setting the electric motor in operation, when the brushes *w* and *h'* will be very rapidly revolved by means of their flexible shafts and other connections, the shaft *f* will be slowly rotated, and the carriage *q* will move slowly forward by the traveler on the lower end of the bolt *v* operating in the groove *u* of the shaft. As the carriage moves forward, the brushes *w'* will engage the sides of the shoe and by reason of their shape the toe and top of the forward part of the foot and cleanse the boot by brushing the

mud therefrom and apply blacking thereto, supplied to the brushes in any suitable manner from the boxes *c''*. The rapid rotation of the brushes will cause the dust and mud taken from the boot or shoe to be freed therefrom by centrifugal tendency. As the brushes *w* approach and pass to the rear of the boot-heel, the toe-brush *h'* will pass over and act upon the toe and forward part of the foot, riding up, if it should so happen, upon the guard *d*. Just before the carriage reaches the forward limit of its movement and before the traveler switches into the return worm-groove to effect a return of the carrier the lower ends of the arms *b'* will be brought into contact with the inclines *o'*, which will move the said lower ends of the said arms inward, permitting the springs *g'* to move the inner ends of the latches *e'* behind the lower ends of the arms, so as to latch them in this position and hold the boxes *c''* on their upper ends out of contact with the brushes *w*. Upon the further operation of the machine the carriage will be returned, and the action of the brushes will serve to polish the cleaned and blacked surface of the shoe. When the brushes have passed back beyond the shoe, the outer ends of the latches *e'* will come in contact with the stationary stops *q'*, and said latches will be disengaged from the lower ends of the arms *b'*, allowing the springs *d'* to move the boxes *c''* again into contact with the brushes *w*. When the carriage reaches the rearward limit of its movement, it may be stopped automatically.

The spring-pressure exerted on the brushes serves to hold the same with a yielding pressure upon the boot or shoe being operated upon.

It is to be noted that while I have been particular in the description of the various parts and features of the machine, as herein shown, these may be variously changed in form and arrangement without departing from the nature or spirit of the invention.

Having thus explained the nature of the invention and described a way and mode of constructing and using the same, though without attempting to set forth all of the forms in which it may be made or all of the methods of operation, I declare that what I claim is—

1. A boot blacking and polishing machine comprising in its construction rotary brushes for polishing the sides, heel, and toe of a boot, a moving carriage supporting said brushes, a suitable motor, and flexible shafts connecting the brushes with the motor, as set forth.

2. A boot blacking and polishing machine comprising in its construction rotary brushes for acting upon the sides, heel, and toe of a boot, a reciprocating carriage supporting the said brushes, a suitable motor, flexible shafts connecting the brushes with the motor, pivoted arms provided with receptacles for blacking, springs for pressing the blacking-receptacles into contact with certain of the said brushes,

and tripping and latching devices for tripping and latching the said arms out of contact with the brushes, as set forth.

3. A boot blacking and polishing machine
5 comprising in its construction rotary brushes for acting upon the sides, heel, and toe of a boot, a reciprocating carriage for supporting the said brushes, a rotary shaft provided with a double worm-groove, a swiveled traveler
10 connected with the said carriage and operating in the said worm-groove, a motor for operating the parts, and flexible shafts connecting the brushes with the motor, as set forth.

4. A machine for blacking and polishing
15 boots or shoes, comprising in its construction two rotary brushes for acting upon the

sides and heel of the boot, a toe-brush for acting upon the toe and top of the foot portion of the boot, a spring-supported guard for covering and protecting the instep portion, a re- 20 ciprocating carriage, a motor, and flexible shafts connecting the brushes with the motor, as set forth.

In testimony whereof I have signed my name to this specification, in the presence of 25 two subscribing witnesses, this 1st day of August, A. D. 1891.

WILLARD H. GILMAN.

Witnesses:

ARTHUR W. CROSSLEY,
EWING W. HAMLEN.