No. 650,723. Patented May 29, 1900.

A. MARTIN.

COIN FREED BOOT BRUSHING MACHINE.

(Application filed July 18, 1899.)

(No Model.) 4 Sheets—Sheet 1.

Fig. 1.

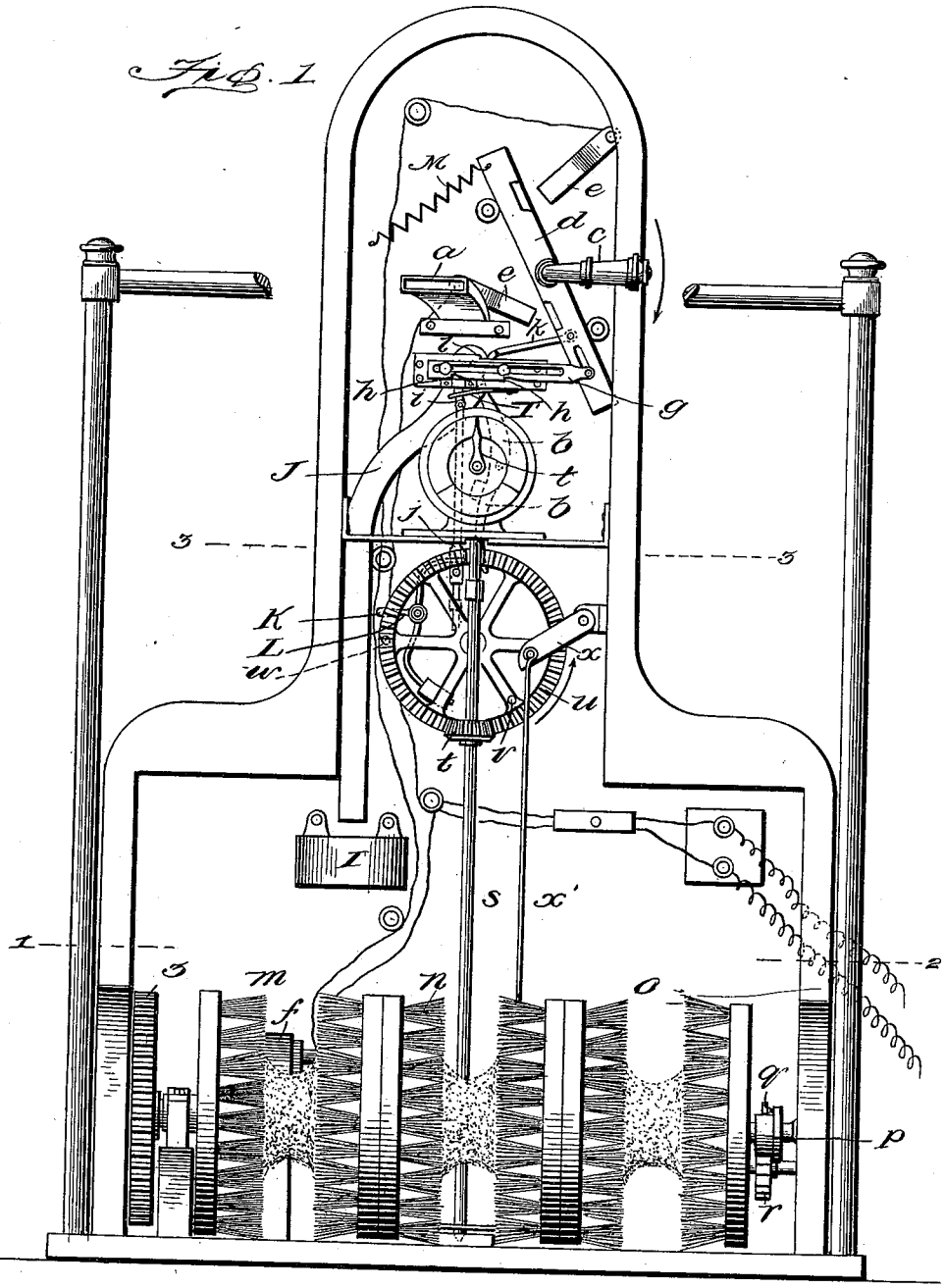
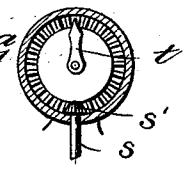


Fig. 2.



Witnesses
[illegible]
[illegible] C. Whittemore

Inventor
Albert Martin,
By [illegible] Whittemore
Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 650,723. Patented May 29, 1900.

A. MARTIN.

COIN FREED BOOT BRUSHING MACHINE.

(Application filed July 18, 1899.)

(No Model.) 4 Sheets—Sheet 2.

Fig. 2.

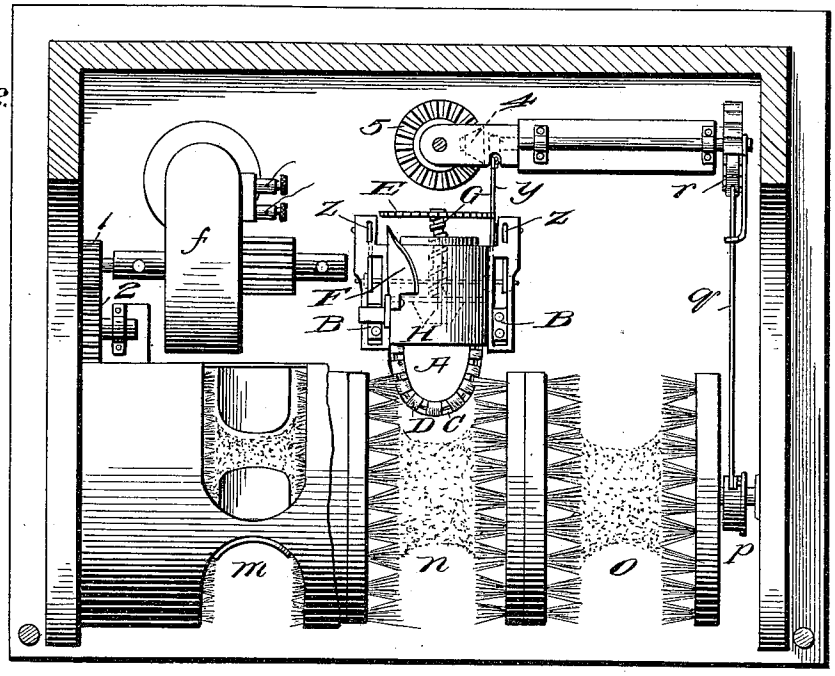
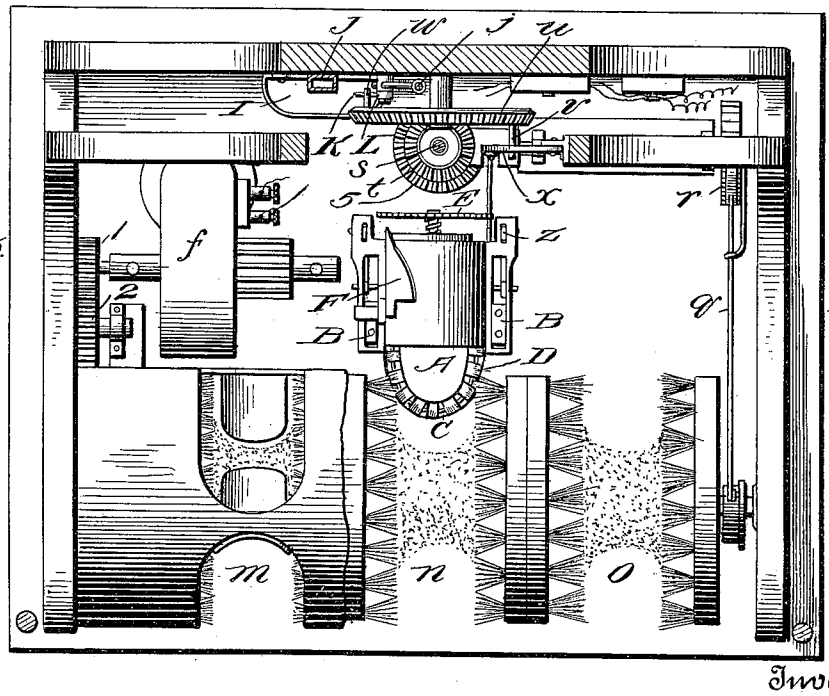


Fig. 3.



Witnesses
Chas. Roberts.
Lillian C. Whitney

Inventor
Abram Martin,
by Geo. C. Whitney
Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 650,723. Patented May 29. 1900.

A. MARTIN.

COIN FREED BOOT BRUSHING MACHINE.

(Application filed July 18, 1899.)

(No Model.) 4 Sheets—Sheet 3.

Fig. 4.

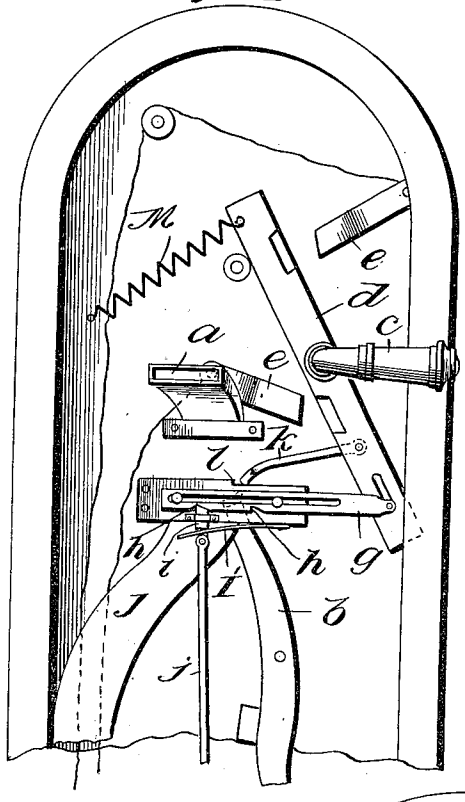


Fig. 6.

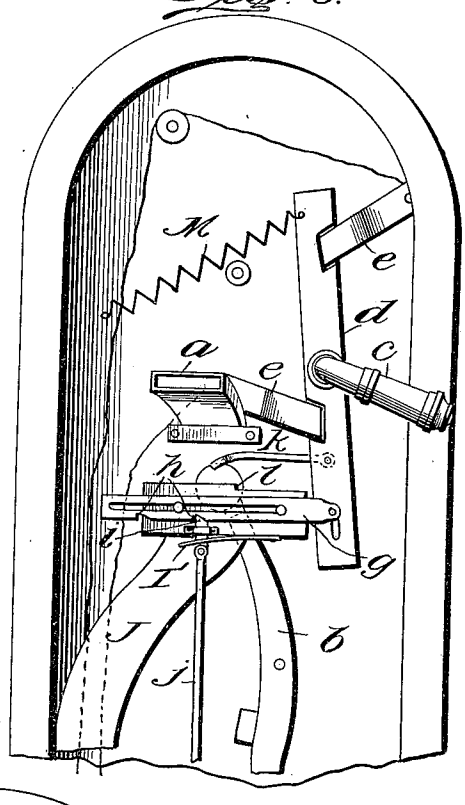
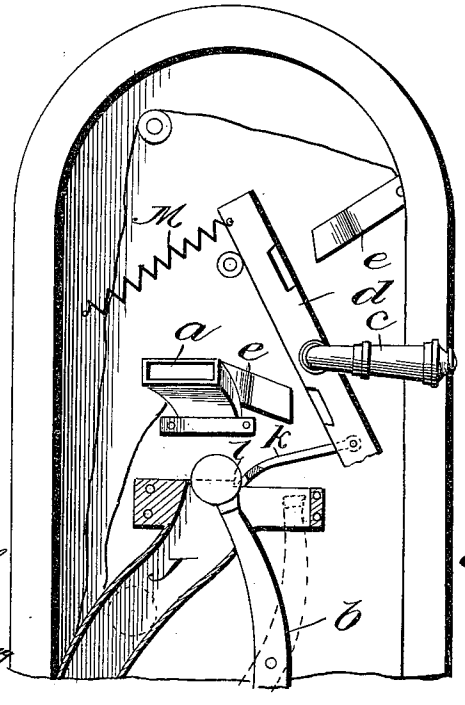


Fig. 5



Witnesses
John L. Wirth
William C. Whittemore

Inventor
Albert Martin
by Geo. P. Whittemore
Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 650,723. Patented May 29, 1900.

A. MARTIN.

COIN FREED BOOT BRUSHING MACHINE.

(Application filed July 18, 1899.)

(No Model.) 4 Sheets—Sheet 4.

Fig. 7.

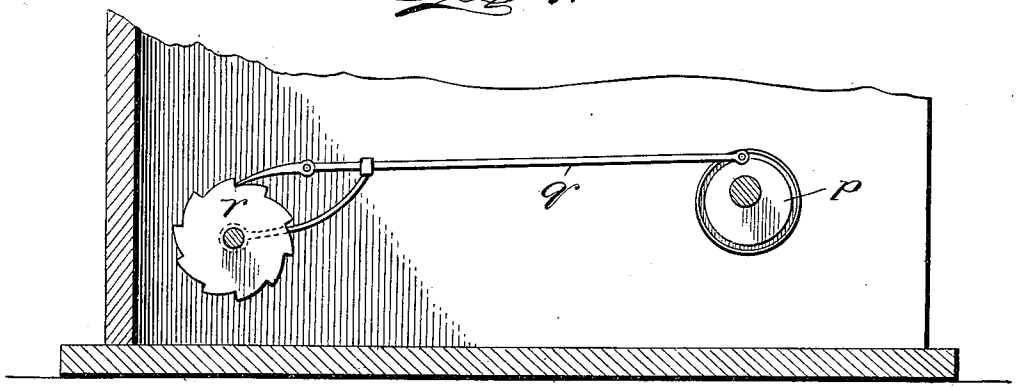


Fig. 8.

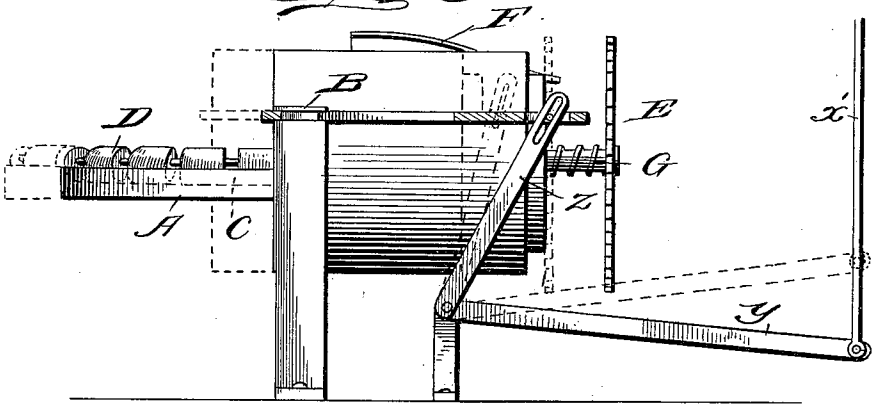
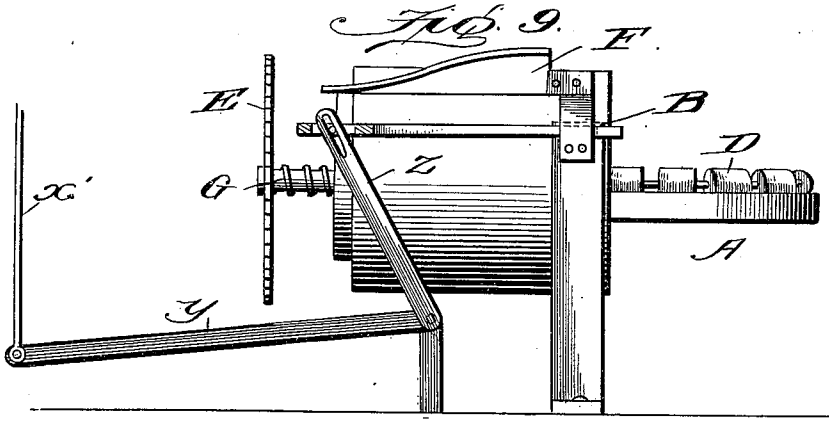


Fig. 9.



Witnesses
Thos. Goerth.
Lilian C. Whiting

Inventor
Albert Martin
By Geo. P. Whittemore
Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ALBERT MARTIN, OF PARIS, FRANCE.

COIN-FREED BOOT-BRUSHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 650,723, dated May 29, 1900.

Application filed July 18, 1899. Serial No. 724,280. (No model.)

To all whom it may concern:

Be it known that I, ALBERT MARTIN, a citizen of the French Republic, residing at Paris, France, have invented a new and useful Improvement in Automatic Coin-Freed Boot-Brushing Machinery, (for which I have made application for Letters Patent in Great Britain under No. 13,438, bearing date June 28, 1899,) of which the following is a specification.

My invention consists in the combination of a mechanical boot-brushing apparatus with an automatic device for starting the brushes, controlled by a coin-freed disengaging mechanism, the whole forming a new automatic machine.

The functions of the brushes of the brushing device are, first, to brush off the dirt; secondly, to apply blacking to the boot, and, thirdly, to put a polish on the boot.

The functions of the coin-freed disengaging mechanism are to start the brushes and to distribute the blacking on the introduction of a coin into the apparatus and to stop the brushes after a suitable time.

The cleaning and polishing of the boots of any one desiring to have his boots blacked may be done at any time without the necessity of taking them off.

The following description clearly sets forth the operation and the method of using my invention.

In the accompanying drawings, Figure 1 is a front elevation of my machine, the casing being removed. Fig. 1ª shows the connection between the mechanism and the index. Fig. 2 is a part-sectional plan on the line 1 2 of Fig. 1. This figure shows on the left a part of the casing covering the brushing apparatus. This casing is specially arranged so as to permit the foot to be introduced below or above the brush. Fig. 3 is a cross-section on the line 3 3, Fig. 1. Fig. 4 is a view, on an enlarged scale, of the coin-receiving and switch-operating parts. Fig. 5 is a sectional elevation of the same, showing a coin in position. Fig. 6 is an elevation of the same, showing the action of the coin in raising the switch-locking detent. Fig. 7 is a side elevation of the pawl-and-ratchet-wheel mechanism for operating the blacking-box and the other connected mechanism. Fig. 8 is a side elevation of the blacking-box and its operating devices. Fig. 9 is an opposite side elevation showing the cam for actuating the plunger which forces out the blacking.

In order to use my automatic blacking-machine, it is sufficient to put a coin of the predetermined kind into the opening *a*, which is within easy reach of the public. This coin slides down an appropriate chute and is stopped in its course by a hook which terminates the upper part of the oscillating lever *b*. After the introduction of the coin the operator turns in the direction of the arrow the handle *c*, fixed on the switch-bar *d*, which on turning enters on either side into the forks *e*, each in connection with a different pole of a source of electricity. The circuit is thus closed, and the motor *f*, arranged in the pedestal of the machine, starts. The boot-blacking machine will remain in action during the whole time of the complete operation, the switch-bar *d* being held in its contacts *e e* against the reaction of a spring M by means of the sliding piece *g*, held in place during the operation by the stop-notch *h* and the spur or bolt *i*. This spur is mounted on a spring I at the upper end of a vertically-suspended stem *j*. The switch-bar *d* carries on its lower part a small pin, on which a lever *k*, ending in a hollow nose, is pivoted. This lever when there is not a coin in the disengaging device abuts against a shoulder *l* of the plate, against which the sliding piece *g* slides, and the machine is prevented from working, the starting-handle being locked. The coin which has been introduced at the opening *a* falls down and rests behind the sliding piece projecting a little beyond the shoulder *l* and in the hollow in the inclined plane of the nose of the lever *k*. Then while turning the handle *c* the bar *d* pushes the sliding piece *g* toward the left. The inclined plane at the end of the lever *k* causes this latter piece to pass above the coin, as shown in Fig. 6, and the sliding piece can thus be pushed to the end of its travel, allowing the hand-switch *d* to make contact and energize the motor, which will work immediately. The electric current being established in the manner described above, the motor *f* drives the gear-wheels 1 2 3. The brushes *m n o* are mounted side by side on the same

axle. On the left side this axle carries the gear-wheel 3 and at its right end it carries a cam *p*. The brush *m* is for the preliminary cleaning of the boot, the brush *n* is for applying the blacking, and the brush *o* is for polishing. The time occupied by the operation is divided into three equal parts corresponding to these three operations, and an indicating-dial informs the person using the machine as to the time to change the foot to another brush. Upon the cam *p* rests a lever *q*, formed with a detent at its end, which acts as a feed-pawl to the ratchet-wheel *r*, which determines the periods of the operation, and finally the stopping of the machine, as hereinafter described. The other extremity of the axle carrying the ratchet-wheel *r* carries a bevel-pinion 4, engaging with a bevel-wheel 5, whose vertical axle *s* carries at a determined height a bevel-pinion *t*, gearing with a bevel-wheel *u*. On each of its two faces this wheel *u* carries two pins *v* and *w*. The first one, *v*, on the front side controls the distribution of the blacking. The second one, *w*, on the back determines the falling of the coin and shortly afterward the stopping of the apparatus. The position of these pins is calculated according to the timing of the operation. The blacking-machine being set in motion, the cleaning operation takes place. The wheel *u* continues its rotary motion regularly under the impulse of the ratchet-wheel *r*, and the pawl-feed *q* from the cam *p* or by any other mechanical combination serving the same end in connection with the axle of the brushes. At a determined moment the pin *v* lifts the finger *x*, which lifts a metal bar *x'*, acting on the lever *y*, Fig. 2, causing two elbows *z*, of which the ends engage in the base of A and which are on the same axis as *y*, to rock, thus effecting the advance of the blacking-receptacle A against the brush *n*. This receptacle consists of a cylindrical box made of metal or of any other suitable material sliding horizontally by means of two lateral ears on supports. These are the ears B, which are under the control of the actuating elbow-levers *z* in order to bring up and take away the blacking-box. In front of the receptacle A and in communication with the interior is a small open trough whose form fits that of the trough-shaped brush *n*. The trough C, always filled with blacking, is fed in the manner about to be described, and a series of rolls D, mounted on a fixed stem, dips continually in the blacking of the curved feeding-trough C. The rolls are of wood covered with felt; but they may be made differently. The feeding of the blacking takes place in the following manner: At the back of the receptacle A is a ratchet-wheel E, with several teeth conveniently spaced. In the path in front one of the teeth of the ratchet-wheel engages on a small helical incline F, which compels the ratchet-wheel to turn, and consequently the interior screw G also, on which the ratchet-wheel is fixed outside the receptacle. This screw G serves as a piston-rod for the piston H, which urges the supply of blacking toward the trough in which are the rolls D, which are thus charged with blacking which is taken from them by the contact of the brush *n* during the whole time of the feeding of the blacking, which ends on the retreat of the receptacle A back by the descent of the lever *x*, which is produced as soon as the pin *v* has passed the lever during the movement of the wheel *u*. The latter continuing to turn, the pin *w*, placed on the back face of the rim, abuts at a given moment against the lower extremity of the lever *b*, causing it to swing, and the coin upheld until then by the upper end of this same lever will be liberated and will fall through the chute J into the box I. The wheel *u* always continuing to revolve, the same pin *w* will engage with the branch arm K of a counterbalanced elbow-lever L in such a way as to raise the upper elbowed extremity of the said lever and then to become disengaged from it the next instant. This bent end will then under the influence of the counterweight strike sharply into a groove in the vertical stem supporting at its upper end the bolt *i*, which has been up to the present holding the sliding piece *g* in the inward position, maintaining the closure of the switch-arm *d* against the spring reaction M. The shock causes the bolt to become disengaged, and under the influence of the spring M the switch-bar *d* is disengaged from the contacts *e* and returns to its initial position, the circuit is broken, the motor stops, and the lever *k* comes to rest behind the shoulder *l* in the locked position of the apparatus, which will only be able to begin to work again after the introduction of another coin into the opening *a*.

The vertical arbor *s* carries at its upper end a pinion *s'*, which engages with any suitable counting mechanism which causes a needle *t* to move over a visible dial on the exterior of the machine, so as to indicate to the person using the machine the duration of the three before-mentioned operations of cleaning, blacking, and polishing.

In order to produce a still better polish, I may add a fourth brush of the same form as that of the three preceding ones, but furnished with flannel, felt, or cloth. This supplementary brush can be fixed on the same arbor as that of *o* or can be fixed directly on the axle of the dynamo and outside the machine with a casing like that of the three brushes.

In my apparatus as shown I use an electric current derived from a dynamo or any electric main; but in localities where an electric current is not available I may replace the electric motor by any other suitable motor or by a motor worked by hand, said motor being always in connection with the disengaging device described.

Having now described the nature of this invention, I declare that what I claim, and desire to secure by Letters Patent, is—

1. A mechanical boot cleaner and polisher,

consisting of the combination with circular brushes, of a motor rotating said brushes, a starting-handle for said motor, a coin-receiving mechanism for liberating said handle, a recoil-spring upon such handle, and locking devices for said starting-handle, adapted to automatically lock the handle out of action when not in use, until released by insertion of a coin, and to hold the handle to maintain supply of motive force until disengaged automatically by the apparatus after the lapse of a predetermined time.

2. In a mechanical boot cleaner and polisher, the combination with a starting-handle having a recoil-spring, of a locking-bar, a detent adapted to arrest a falling coin, a pawl on the starting-handle engaging with said locking-bar when no coin lies on the detent; a spring-pressed locking-pin engaging with said locking-bar; and means connected by gear to the brush-axle by which the coin is released from the detent and by which the spring locking-pin is disengaged from locking-bar of said starting-handle substantially as described.

3. In a mechanical boot cleaner and polisher, the combination with rotary brushes adapted as to shape to embrace the surface of a boot, of a motor operated by an external source of power, coin-freed mechanism to unlock and permit the operation of said motor, a wheel driven by said motor, a pin on said wheel, and mechanism adapted to be released by said pin for stopping the motor at the expiration of a definite limit of time.

4. In a mechanical boot cleaner and polisher, the combination with a series of rotary brushes, each adapted to effect a separate operation in succession, of a motor for operating the same, a starting-handle for said motor, coin-freed releasing mechanism for said handle, a spring-pin for locking said handle when the motor is started, gearing connected with the brushes to eventually trip the locking-pin, and an indicator geared to said brushes to inform the user of the passing of successive intervals of time for the several operations of the brushes.

5. In a mechanical boot cleaner and polisher, the combination with a series of rotary brushes, of a motor for operating the same, a starting-handle for said motor, coin-freed mechanism for releasing said handle, a spring-pin for locking said handle, gearing connected with the motor for dropping the coin and tripping the locking-pin, a blacking-receptacle, and means for automatically moving said receptacle toward the brushes in periodicity with the coin-dropping devices.

6. In a mechanical boot cleaner and polisher, the combination with a series of rotary brushes, of a motor for operating the same, a starting-handle for said motor, a pivoted detent for arresting the coin, a pawl pivoted to the handle and adapted to be disengaged from its stop when moved against the edge of the arrested coin, a notched bar pivoted to the handle, a spring locking-pin engaging with one of said notches, a counterweighted tappet for disengaging said pin, and gearing connected with said brushes for tripping the detent and actuating said tappet.

7. In a mechanical boot cleaner and polisher, the combination with a series of rotary brushes, of a motor for operating the same, a starting-handle for said motor, a locking-pin for holding the handle, gearing driven intermittingly by the brush-shaft, and including a wheel carrying pins, a blacking-receptacle, means actuated by one of said pins for reciprocating said receptacle, and means operated by the other pin for releasing the handle-locking pin.

8. In a mechanical boot cleaner and polisher the combination with the rotative brush-axle, of a vertical spindle, gearing for transmitting motion from one to the other, and a time-determining wheel operated by the vertical spindle and having pins thereon, a handle-locking bar, a detent for said bar, and means operated by said pins to remove the coin from position of rest, and to remove the detent from the starting-handle-locking bar substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

ALBERT MARTIN.

Witnesses:
HENRY DOENZER,
EDWARD P. MACLEAN.