

(No Model.)

4 Sheets—Sheet 1.

N. B. KNIGHT.

COIN OPERATED BOOT OR SHOE BLACKING MACHINE.

No. 484,324.

Patented Oct. 11, 1892.

Fig. 1.

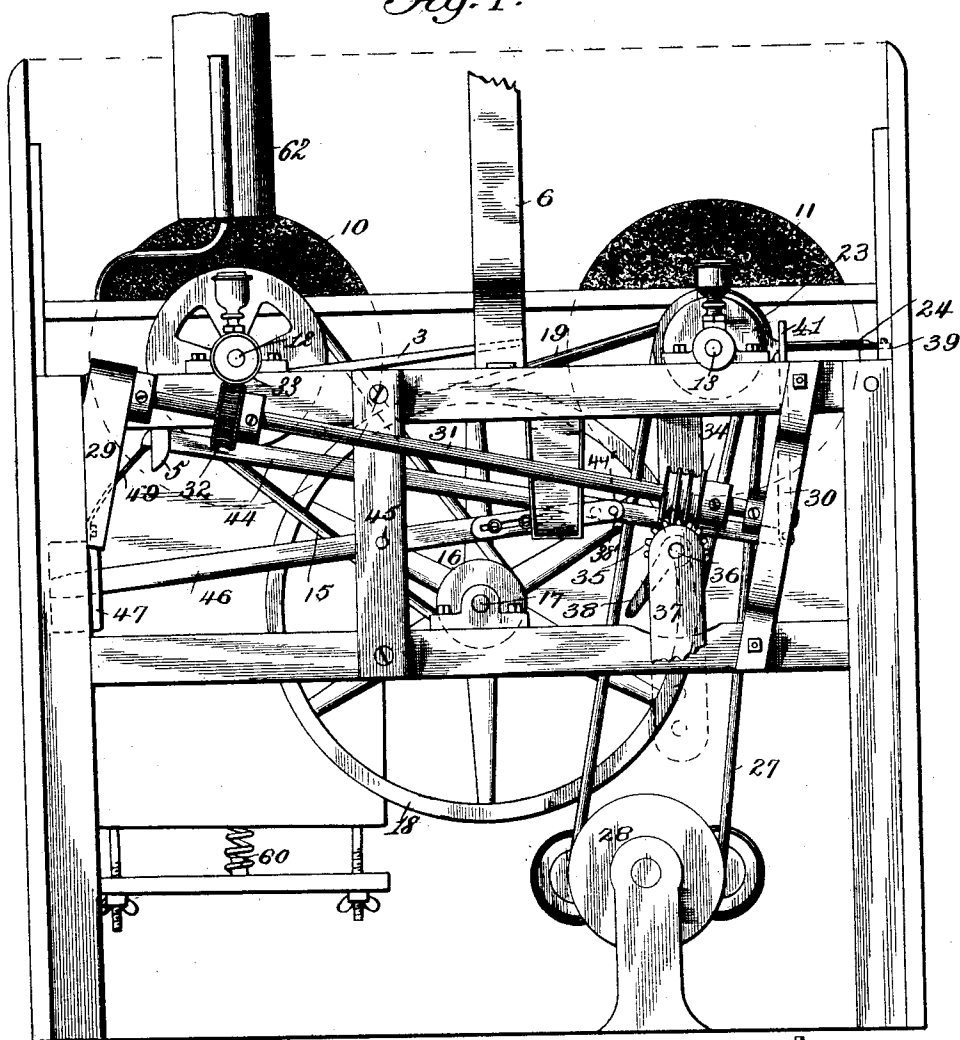
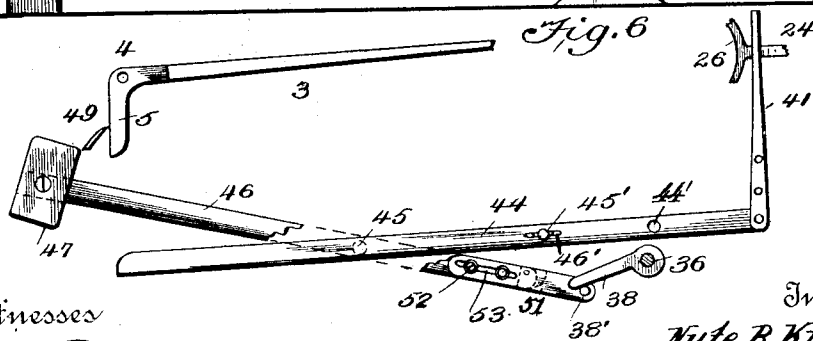


Fig. 6



Witnesses

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(No Model.)

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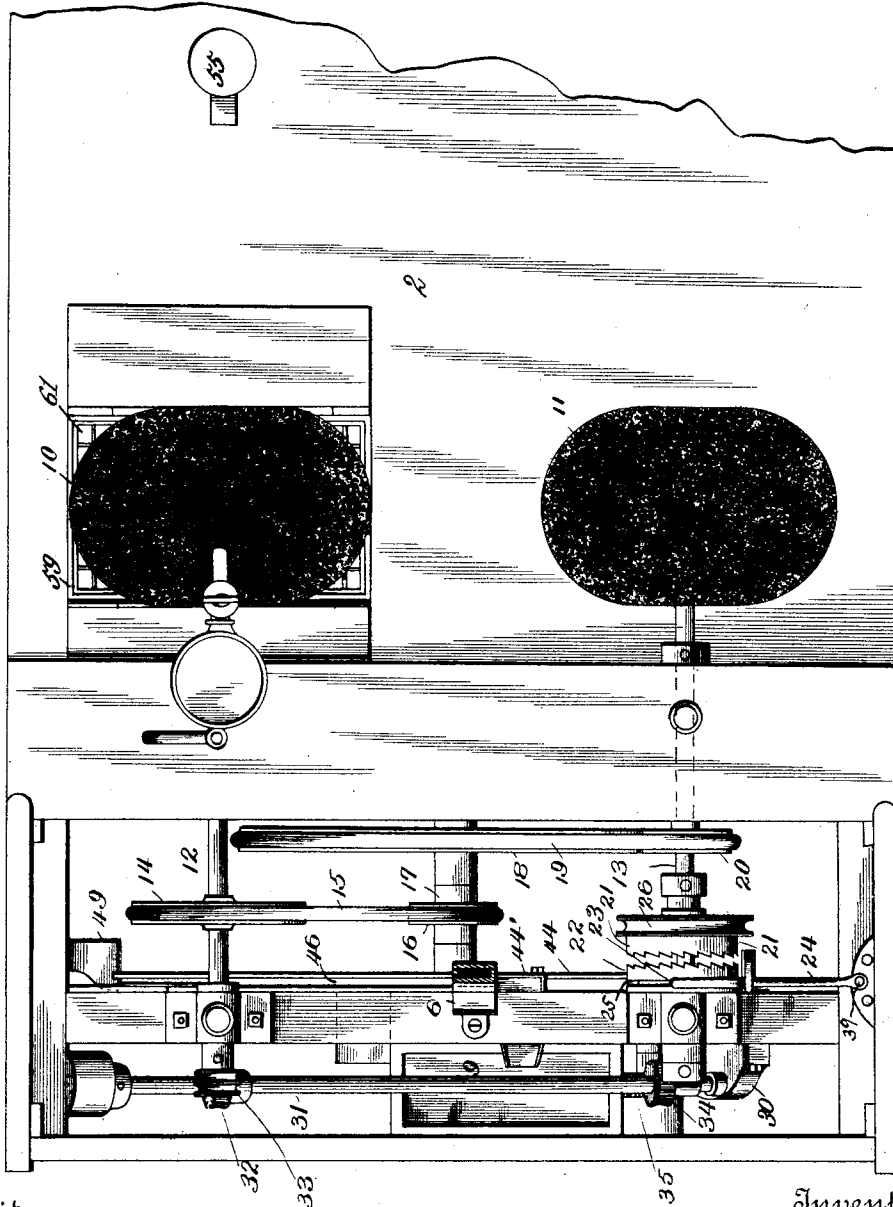
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Fig. 2.



Witnesses

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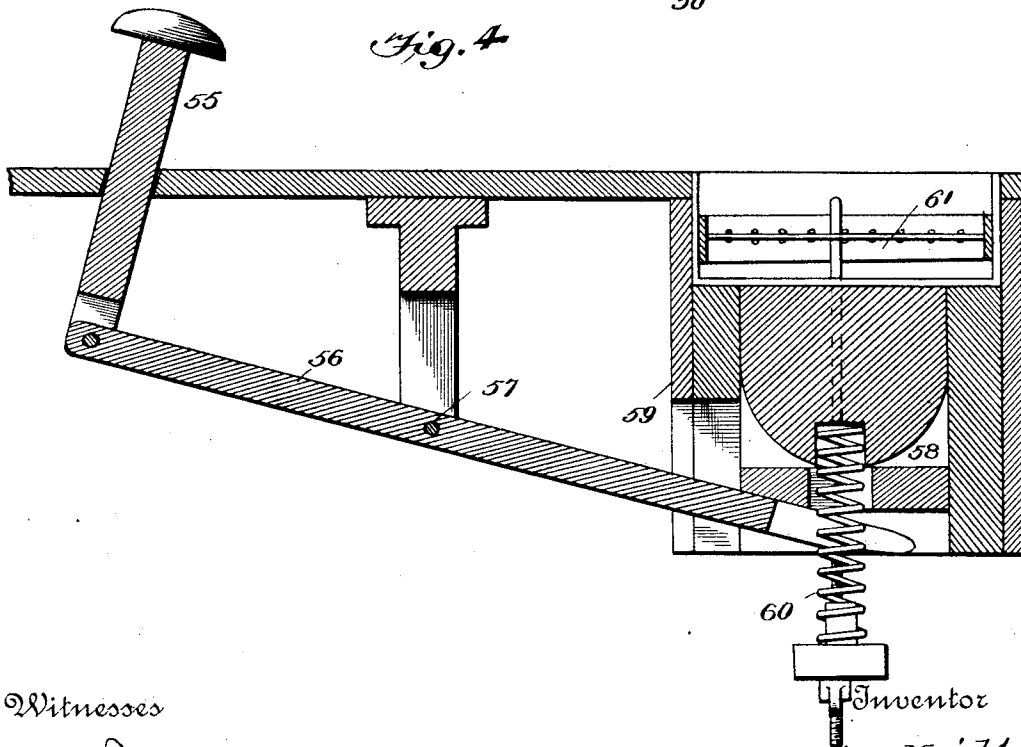
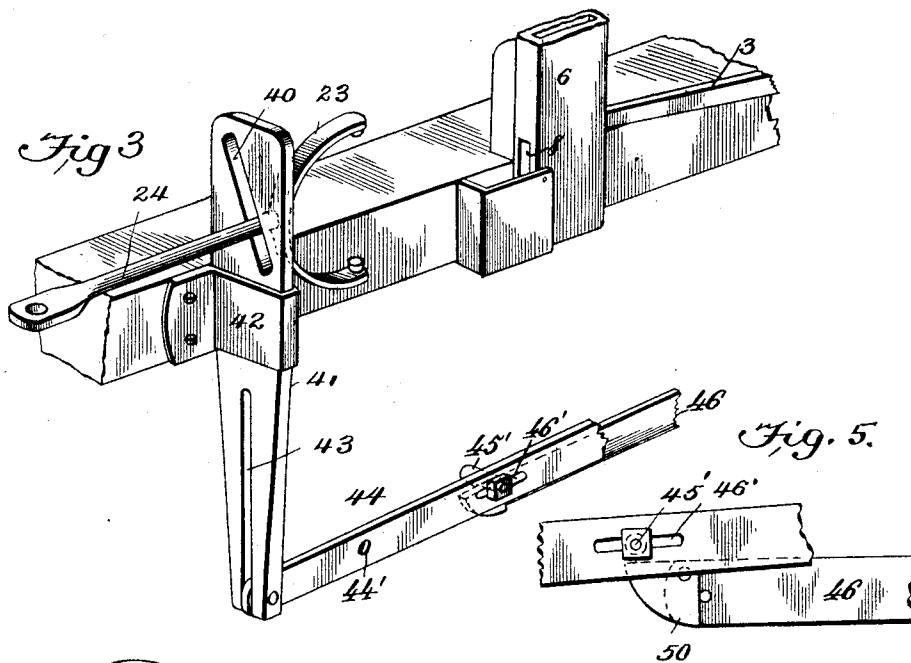
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Patented Oct. 11, 1892.



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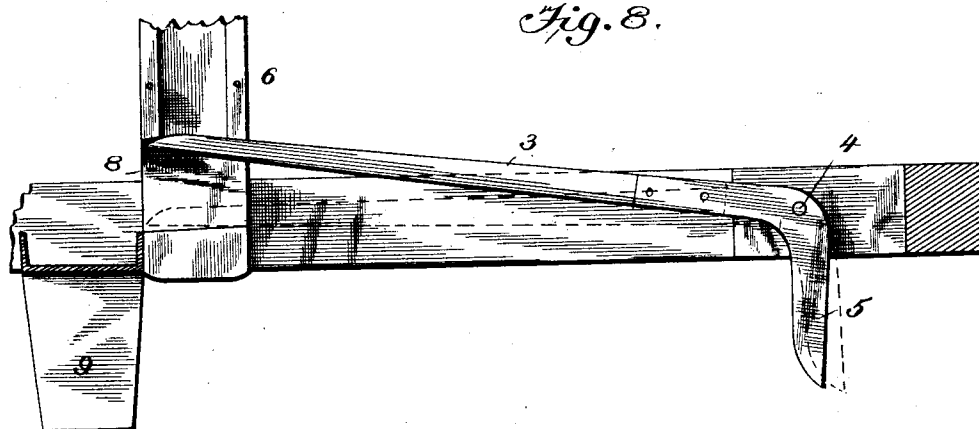
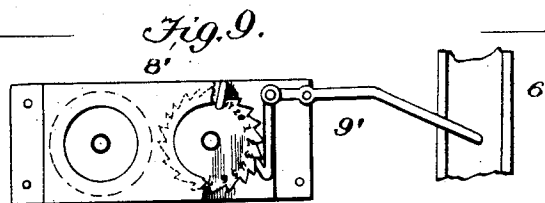
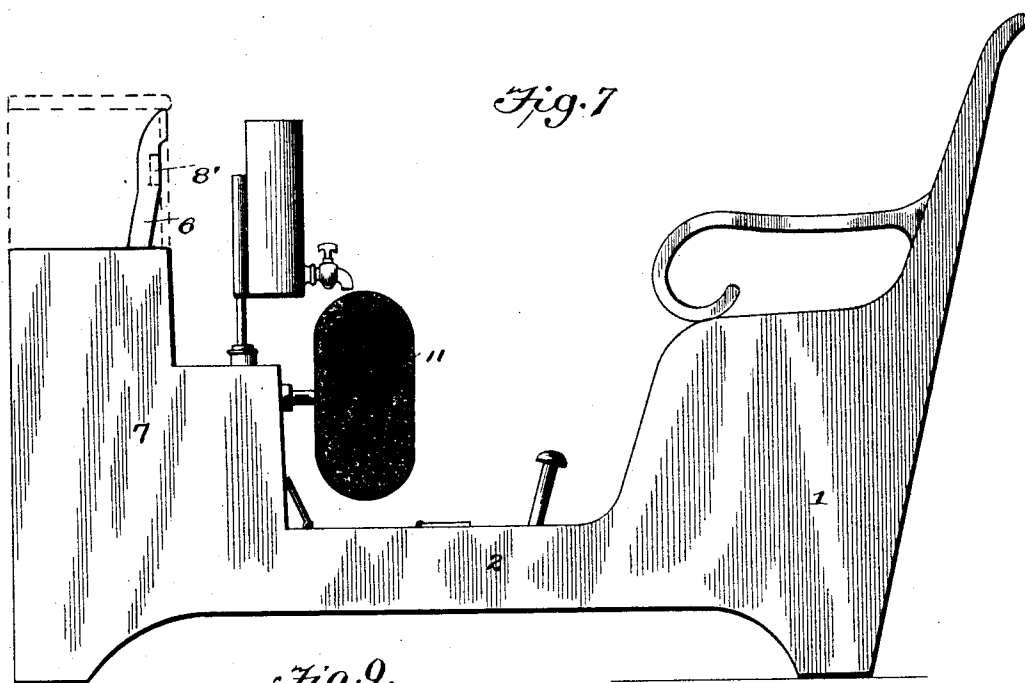
4 Sheets—Sheet 4.

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No. 484,324.

Patented Oct. 11, 1892.



Witnesses

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UNITED STATES PATENT OFFICE.

NUTE B. KNIGHT, OF DALLAS, TEXAS.

COIN-OPERATED BOOT OR SHOE BLACKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 484,324, dated October 11, 1892.

Application filed March 3, 1892. Serial No. 423,679. (No model.)

To all whom it may concern:

Be it known that I, NUTE B. KNIGHT, a citizen of the United States, residing at Dallas, in the county of Dallas and State of Texas, have invented new and useful Improvements in Coin-Operated Boot or Shoe Blacking Machines, of which the following is a specification.

This invention relates to certain new and useful improvements in coin-controlled shoe blacking and polishing machines; and it consists substantially in such features of arrangement, construction, and combinations of parts as will hereinafter be more particularly described, and pointed out in the claims.

The object of the invention is to provide a new and improved machine of the character referred to, the operative parts of which shall be set in motion only on the deposit therein of a coin of proper or predetermined weight, size, or quantity.

A further object of the invention is to provide a novel machine of the character referred to which shall enable the blacking and polishing of shoes to be accomplished with little or no exertion or labor and without the loss or waste of time.

A further object of the invention is to provide a novel machine of the character referred to which shall only remain in operation for a limited period of time after a coin has been deposited within the same, thereby preventing the use of the machine by more than a single person for each coin deposited.

A further object of the invention is to provide a novel machine of the character referred to which shall be comparatively simple in construction, effective in the uses intended for it, and one in which the several parts are not likely to become disarranged or broken.

The above objects I attain by the means illustrated in the accompanying drawings, wherein—

Figure 1 represents a rear vertical elevation of the operative mechanism, the back and top of the inclosing box or casing being removed so as to more clearly indicate the interior arrangement. Fig. 2 is a top or plan view also with the top removed, said figure being intended to represent more clearly the devices by which the polishing-brush is thrown into and out of operation. Fig. 3 is an en-

larged detailed perspective view of a part of the interior or operative mechanism, by which the construction and arrangement thereof will be better understood, the parts shown in this view being in reverse position to that shown in Fig. 1. Fig. 4 is a transverse sectional elevation of the elevated platform and the feed mechanism for supplying polish or blacking to the applying-brush. Fig. 5 is an enlarged detail view of certain parts; and Fig. 6 is a side view in detail, also enlarged, showing the relative arrangement of the parts of the tripping mechanism which set the machine into operation on each deposit of a coin. Fig. 7 is a side view of the entire machine as it appears when ready for use. Fig. 8 is an enlarged view of a portion of the coin-chute and the tripping-lever, one end of which extends into the chute, so as to be actuated by a falling coin. Fig. 9 is a detail view of the registering devices.

In carrying my invention into effect I provide a suitable seat or chair, which, besides, constitutes a box or casing for inclosing the main or principal operative parts of the machine. Said chair, box, or casing is also provided with a raised platform, to the opposite end of which the blacking and polishing devices are arranged. Automatic feed or supply devices are resorted to for keeping the blacking-brush supplied with the required amount of blacking or polish, and the machine is further so constructed and arranged that the brush for polishing the shoe may be placed into and out of motion at the proper time. The parts of the machine are set into motion by the action of a coin of proper size or denomination falling down a chute and tripping a lever, which releases certain parts and starts them to work. A suitable motor is employed, preferably electric, so that whenever the parts are released and placed into operative condition they (the said parts) will be set into action automatically.

Referring to the several parts of the drawings more in detail, the numeral 1 designates a suitable box or inclosing case for the operative parts of the mechanism, the said box or casing being shaped like a chair or seat, so as to enable the person having his shoes blacked or polished to be seated during the operation. This box or casing is also constituted in part

of a raised or elevated foot-rest or platform 2, within which is arranged the trip-lever 3, having at or near its fulcrum 4 a curved right-angled portion 5, which engages and normally maintains the parts in inoperative connection. The free end of the said lever extends over and enters the side of the coin-chute 6, extending upwardly from a casing 7, arranged at the end of the platform 2 opposite to the chair or seat-box 1. When the said lever is in engagement with the tripping devices, it occupies the position shown in the full lines Fig. 8; but when the same is depressed or tripped by a coin falling down the chute it assumes the position shown in dotted lines, said figure. When in the position shown in full lines, the said lever serves to close the chute against communication with an opening 8 in the side of the chute, which leads it to a box, till, or receptacle 9 for receiving and collecting the coins that are deposited within the machine and from which such coins may be removed from time to time. Preferably, though not essentially, I employ, in connection with the upper part of the chute, a suitable registering device marked 8', by which each coin is registered as it falls down the chute, and thus is an accurate account kept of the number of coins deposited. This register consists of a series of toothed wheels, as shown, which I operate by means of a small lever 9', also entering the coin-chute above the lever 3, and serving to turn the wheels the extent of one tooth each time a coin is dropped in. Each movement of these wheels serves to turn an indicator or pointer, which moves over the face of a registering-disk having numerals arranged around the same in successive order, as shown.

10 represents the blacking-brush, and 11 the cleaning or polishing brush, the said brushes being provided with or mounted upon shafts 12 and 13, respectively, so as to be given a rotary motion when the machine is started or set into operation. Mounted upon the shaft 12 is a belt-pulley 14, which connects by means of a belt 15 with a smaller pulley 16, carried by the shaft 17 of the main driving-wheel 18, the said main driving-wheel 18 being in turn connected by a belt 19 with a pulley 20, arranged on or keyed to the shaft 13. Also loosely mounted or arranged upon the said shaft 13 is the portion 21 of a clutch, of which the part 22 constitutes the laterally-movable part. The said part 22 is movable in the sense that the same is capable of slight longitudinal movement on the shaft 13 by virtue of its being keyed thereon in the manner usual with this form of clutch and which I do not deem it necessary to illustrate. The laterally-movable clutch-section 22 rotates with the shaft 13 and is engaged by the bifurcated or forked end 23 of a horizontally-swinging lever 24, said forked end working or fitting within a circumferential groove 25 of the movable clutch-section 22, so that while the clutch-section 22 can revolve with the

shaft 13 such clutch-section can be moved into and out of engagement with the clutch-section 21. When the laterally-movable part of the clutch is caused to engage the clutch-section 21, the brush-shaft 13 is caused to revolve; but as soon as the clutch-sections are separated the brush-shaft ceases its motion. The clutch-section 21 is provided with an attached band or belt pulley 26, which gears or connects by means of a belt 27, Fig. 1, with any preferred form of electric or other motor 28, located in a suitable position in the casing or frame of the apparatus.

Mounted in suitable bearings 29 and 30 is a shaft 31, carrying at its upper end a pinion or gear-wheel 32, meshing with a small worm-gear 33, carried by the corresponding end of shaft 12, while on its lower end a small worm-gear 34 is provided, and which meshes with or engages a small pinion or gear-wheel 35, carried on the end of a small stub-shaft 36, mounted in suitable bearings 37 in the framework of the machine. (See Fig. 1.) The said shaft 36 carries a tongue or toe 38, which at a certain time or interval acts to restore or reset a clutch-operating lever 44, as will be hereinafter explained.

The lever 24, hereinbefore referred to, is movable horizontally on its pivot 39, and it works through and against the sides of a diagonal oblong slot or opening 40, formed in a vertically-movable slide 41, which moves in a guide 42 on the frame of the machine, (see Fig. 3 for enlarged view,) and this slide in its movement up or down causes the said lever to turn to one side or the other, according to the direction of movement of said slide. This slide is also formed or provided with a vertical or straight slot 43, and is pivotally connected at its lower end with a pivoted clutch-operating lever 44, which normally remains in an elevated position and is so held until released by the lever 3, a pawl or dog, composed of a spring 49, serving to so hold the said lever. This clutch-operating lever 44 is pivoted or fulcrumed at 44' (see Fig. 6) and is formed or provided on its side with a pin or projection 45', which is adjustable in a slot 46' in said lever, so as to be moved to compensate for any wear or uneven working of the parts due to contact of the rear end of a lever 46 therewith, in the manner and for the purpose hereinafter described. The lever 46 is weighted at its forward end, as shown at 47, the fulcrum thereof being at the point 45, and when the machine is at rest the said lever occupies the lower position. (Shown in Fig. 1.) The rear end of said lever is rounded or curved, as seen at 50, and is provided on one side thereof with an adjustable plate 51, by which adjustment with respect to the toe 38 of shaft 36 can be effected, such adjustment being made by means of screws 52, working in slots 53. The lever 44 occupies the position shown in Fig. 1 when the machine is at rest, the end thereof resting on the top edge of spring 49, as shown. As soon as a coin is

deposited within the chute and the lever 3 tripped the said lever 44 drops down, pulling upon the slide 41, and thereby actuating the lever 24 and starting the machine into operation.

55 represents a foot-piece passing down through the foot-rest or platform 2 and connecting movably with a lever 56, having its pivot or fulcrum at 57, (see Fig. 4,) the free end of said lever being bifurcated and working beneath a sliding block 58, which works up and down in a box or frame 59. Beneath the block a spring 60 is arranged, and above the block is a perforated portion 61, beneath which may be placed a pad or other material containing a blacking or polish. By pressing the foot-piece 55 down with the foot the movable block will be carried up beneath the blacking-brush 10, and by contact with the elastic bearing of the pad the blacking or polish will be squeezed or expressed through the pad onto the brush. In this way the brush may be supplied at any time.

62 represents a small tank, from which water is supplied to the blacking-brush 10 whenever it may be needed.

The operation of my invention is as follows: The machine, being at rest, as shown in Fig. 1, will be immediately set into operation on dropping a coin of proper size or weight down the chute provided for that purpose. As soon as such coin strikes the inwardly-projecting end of lever 3 the curved portion 5 of said lever will be caused to press the spring 49 inwardly, and thus release or free the end of lever 44, resting thereon. When lever 44 falls to the position shown in Fig. 6, it depresses the slide 41 and causes the lever 24 to be turned, thereby placing the two parts of the clutch into engagement, and the brushes will be then operated to revolve. The arrangement and relativeness of the worm 34 on shaft 31 and the gear 35 on shaft 36 is such that the toe or tongue 38, carried by said shaft, will not be brought around to the position shown in Fig. 6 until time has elapsed sufficient to enable a pair of shoes to be polished; but when such tongue does move around to such position it will strike a pin 38' on said lever and elevate the lever temporarily or momentarily, as shown. The said tongue, however, will pass the said lever, and in so doing the rear end of the lever is caused to fly upwardly, due to the weight on the other end of said lever. As the free end of the weighted lever rises the curved or rounded portion 50 thereof moves against the pin or projection 45' on the side of lever 44, thereby raising and resetting the lever 44 to its original position and engagement with the spring 49, and as this action also reverses the movement of the slide 41 and lever 24 the clutch will be separated and the machine stopped.

Having thus described my invention, what I claim is—

1. In a coin-controlled boot or shoe blacking machine, the combination of a coin-chute,

a brush, a rotary shaft for operating the brush, a motor, a clutch for throwing the brush-operating shaft into and out of gear with the motor, a clutch-operating lever connected with a part of the clutch, a device for engaging and holding the clutch-operating lever in position to throw the shaft out of gear with the motor, and a trip-lever operated by a coin deposited in the coin-chute to release the said device from engagement with the clutch-operating lever, substantially as described.

2. In a coin-controlled boot or shoe blacking machine, the combination of a coin-chute, a brush, a rotary shaft for operating the brush, a motor, a clutch mounted on the shaft and composed of two parts, one of which is geared to the motor and the other one of which is movable laterally for throwing the brush-operating shaft into and out of gear with the motor, a clutch-operating lever connected with the laterally-movable part of the clutch, a device for engaging and holding the clutch-operating lever in position to throw the shaft out of gear with the motor, and a trip-lever operated by a coin deposited in the coin-chute to release the said device from engagement with the clutch-operating lever, substantially as described.

3. In a coin-controlled boot or shoe blacking machine, the combination of a coin-chute, a rotary brush-shaft carrying a brush, a motor, a clutch mounted on the brush-shaft and composed of two parts, one of which is geared to the motor and the other one of which is movable laterally, a rising and falling clutch-operating lever, connections between the clutch-operating lever and the laterally-movable part of the clutch, a pawl or dog for holding the clutch-operating lever in an elevated position to throw the shaft out of gear with the motor, and a pivoted swinging trip-lever having one end portion arranged in the path of a coin moving through the chute and the other end portion arranged to release the pawl or dog from engagement with the clutch-operating lever, substantially as described.

4. In a coin-controlled boot or shoe blacking machine, the combination of a coin-chute, a brush, a rotary shaft for operating the brush, a motor, a clutch for throwing the brush-operating shaft into and out of gear with the motor, a rising and falling clutch-operating lever, a movable supporting device for engaging and holding one end of the clutch-operating lever in an elevated position, and a trip-lever operated by a coin deposited in the coin-chute and acting to release the movable supporting device from engagement with the clutch-operating lever, substantially as described.

5. In a coin-controlled boot or shoe blacking machine, the combination of a coin-chute, a rotary shaft for operating the brush, a motor, a clutch for throwing the brush-operating shaft into and out of gear with the motor, a clutch-operating lever connected with a

part of the clutch, a device for engaging and holding the clutch-operating lever in position to throw the shaft out of gear with the motor, a trip-lever operated by a coin deposited in the coin-chute to release the said device from engagement with the clutch-operating lever, and mechanism for automatically resetting the clutch-operating lever into engagement with the said engaging and holding device at a predetermined time, substantially as described.

6. In a coin-controlled boot or shoe blacking machine, the combination of a coin-chute, a brush-shaft carrying a brush, a motor, a clutch mounted on the brush-shaft and composed of two parts, one of which is geared to the motor and the other one of which is movable laterally, a rising and falling clutch-operating lever connected with a part of the clutch, a movable supporting device to engage and hold the clutch-operating lever in position to throw the brush-shaft out of gear with the motor, a trip-lever operated by a coin deposited in the coin-chute to release the movable supporting device from engagement with the clutch-operating lever, and mechanism for resetting the clutch-operating lever into engagement with the movable supporting device, substantially as described.

7. In a coin-controlled boot or shoe blacking machine, the combination of a coin-chute, a brush, a rotary shaft for operating the brush, a motor, a clutch for throwing the brush-operating shaft into and out of gear with the motor, a clutch-operating lever connected with a part of the clutch, a movable supporting device for engaging and holding the clutch-operating lever in position to throw the shaft out of gear with the motor, a trip-lever operated by a coin deposited in the coin-chute to release the movable supporting device from engagement with the clutch-operating lever, and mechanism for resetting the clutch-operating lever into engagement with the movable supporting device, substantially as described.

8. In a coin-controlled boot or shoe blacking machine, the combination of a coin-chute, a brush, a rotary shaft for operating the brush, a motor, a clutch for throwing the brush-operating shaft into and out of gear with the motor, a rising and falling clutch-operating lever connected with a part of the clutch, a dog or pawl for engaging and holding the clutch-operating lever in an elevated position to throw the shaft out of gear with the motor, a trip-lever operated by a coin deposited in the coin-chute to release the pawl or dog from engagement with the clutch-operating lever, a weighted lever, and means whereby the weighted lever is caused to automatically reset the clutch-operating lever into engagement

with the pawl or dog at a predetermined time, substantially as described.

9. In a coin-controlled boot or shoe blacking machine, the combination of a coin-chute, a brush, a brush-operating shaft, a motor adapted to gear with the shaft, mechanism for throwing the shaft into and out of gear with the motor, a device for holding said mechanism in position to retain the shaft out of gear with the motor, and a trip-lever operated by a coin deposited in the coin-chute to release the device from the said holding mechanism, substantially as described.

10. In a coin-controlled boot or shoe blacking machine, the combination of a coin-chute, a brush, a brush-operating shaft, a motor adapted to gear with the shaft, mechanism for throwing the shaft into and out of gear with the motor, a device for holding said mechanism in position to retain the shaft out of gear with the motor, a trip-lever operated by a coin deposited in the coin-chute to release the device from the said holding mechanism, and automatic resetting mechanism operating to throw the brush-operating shaft out of gear with the motor at a predetermined time, substantially as described.

11. In a coin-controlled boot or shoe blacking machine, the combination of a coin-chute, a brush, a rotary brush-operating shaft, a motor, a clutch for throwing the brush-operating shaft into and out of gear with the motor, a rising and falling clutch-operating lever, a vertically-movable slide connected with the clutch-operating lever, a horizontally-swinging lever engaged with a part of the clutch and operated by the vertically-movable slide, a device for engaging and holding the clutch-operating lever in an elevated position, and a trip-lever operated by a coin deposited in the coin-chute to release the said device from engagement with the clutch-operating lever, substantially as described.

12. The combination of a case having a foot-rest, a blacking-brush for applying the blacking to a boot or shoe, a brush for polishing the boot or shoe, coin-controlled mechanism for operating the brushes, a vertically-movable block for carrying a supply of blacking, and a pivoted lever having a foot-piece and acting on the block to elevate the blacking-supply into the path of the blacking-brush when the foot-piece is depressed, substantially as described.

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

NUTE B. KNIGHT. [L. S.]

Witnesses:

H. C. EARLY,
J. E. POWERS.