No. 868,620. PATENTED OCT. 15, 1907.

J. M. WOLKOSKY, F. MAGIDSON, S. PRINTZ & A. WOLKOSKY.

# SHOE CLEANING AND SHINING MACHINE.

APPLICATION FILED JUNE 16, 1906.

4 SHEETS—SHEET 1.

Fig. 1.

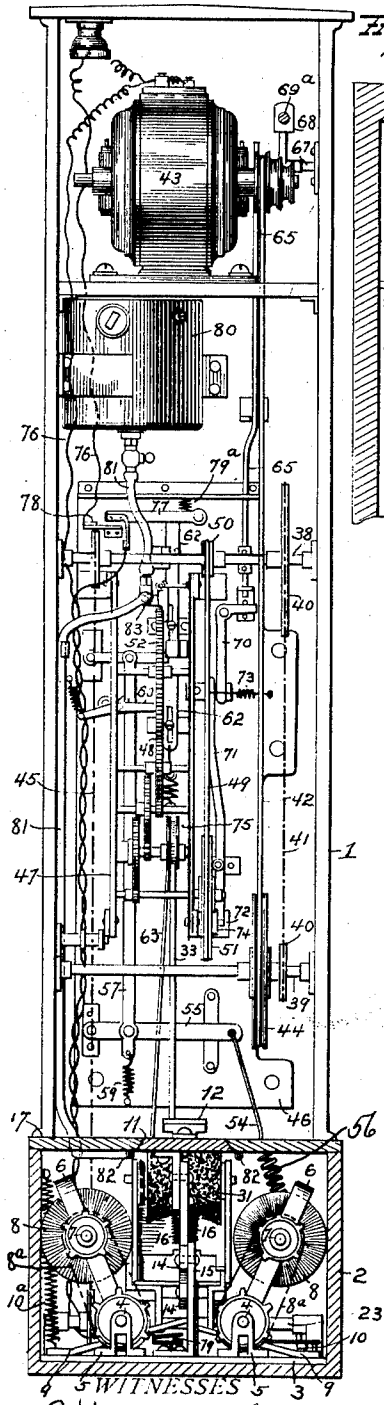


Fig. 3.

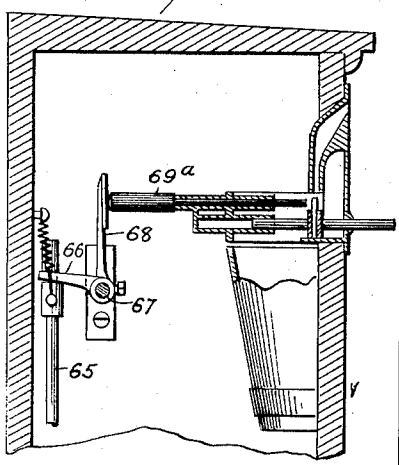


Fig. 2.

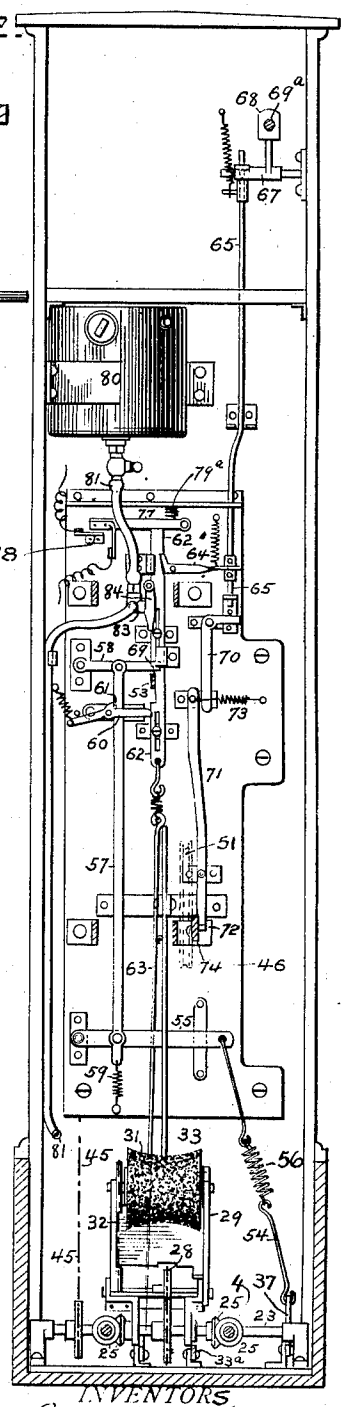
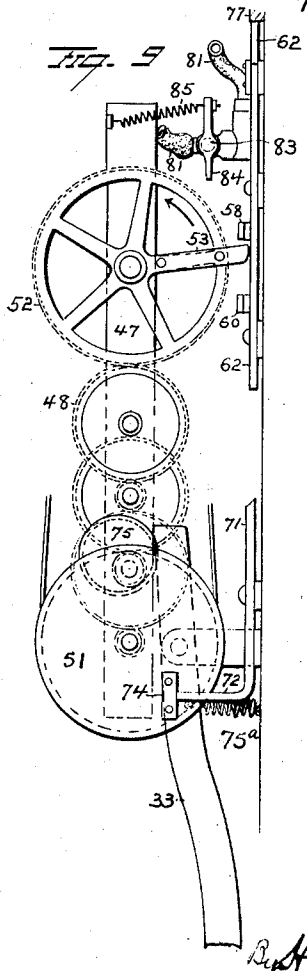


Fig. 4.



WITNESSES.

E. L. Nottingham

G. F. Downing.

INVENTORS.

J. M. Wolkosky,

F. Magidson

S. Printz and

A. Wolkosky

By H. A. Seymour Attorney

No. 868,620. PATENTED OCT. 15, 1907.

J. M. WOLKOSKY, F. MAGIDSON, S. PRINTZ & A. WOLKOSKY.

SHOE CLEANING AND SHINING MACHINE.

APPLICATION FILED JUNE 16, 1906.

4 SHEETS—SHEET 2.

Fig. 3.

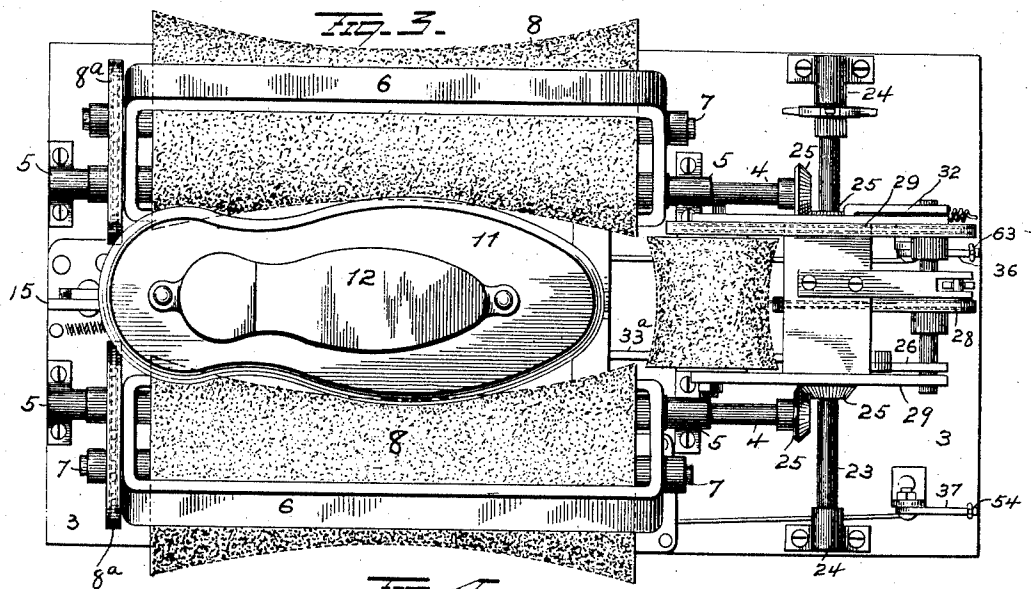



Fig. 4.

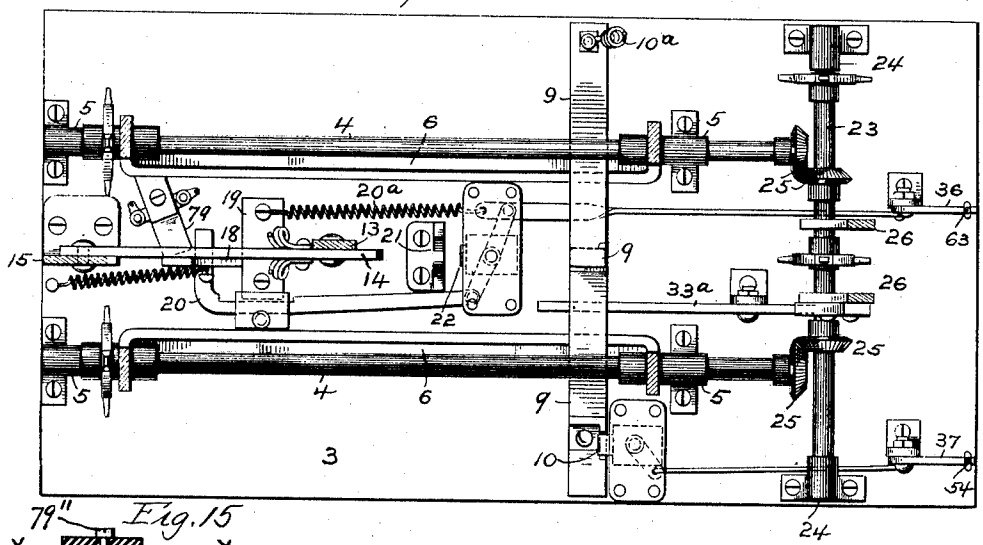



Fig. 15

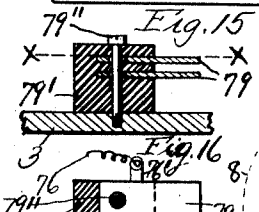
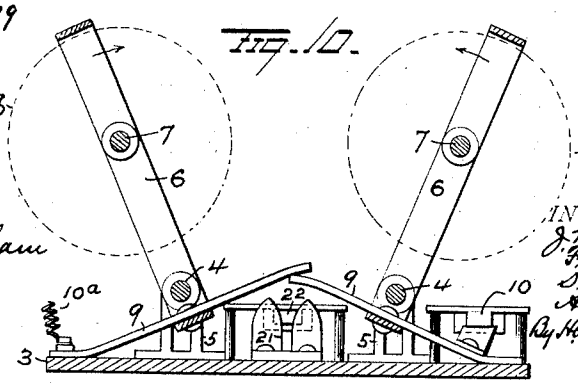



Fig. 16




Fig. 10.




WITNESSES

E. D. Nottingham

G. F. Downing.

INVENTORS

J. M. Wolkosky

F. Magidson

S. Printz and

A. Wolkosky

By H. A. Seymour Attorney

No. 868,620. PATENTED OCT. 15, 1907.

J. M. WOLKOSKY, F. MAGIDSON, S. PRINTZ & A. WOLKOSKY.

SHOE CLEANING AND SHINING MACHINE.

APPLICATION FILED JUNE 16, 1906.

4 SHEETS—SHEET 3.

Fig. 5.

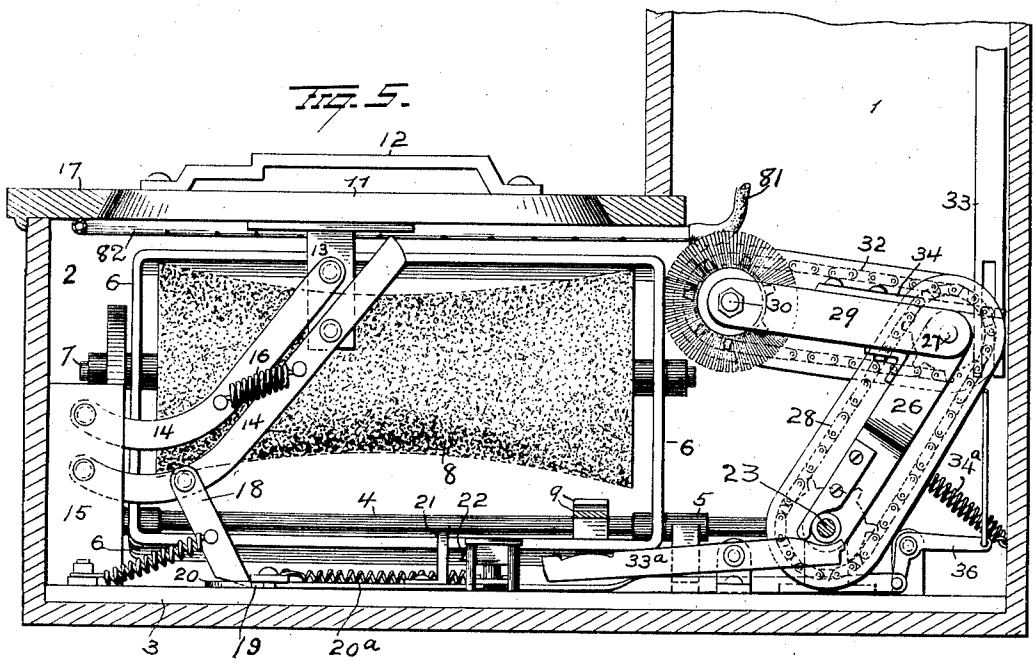
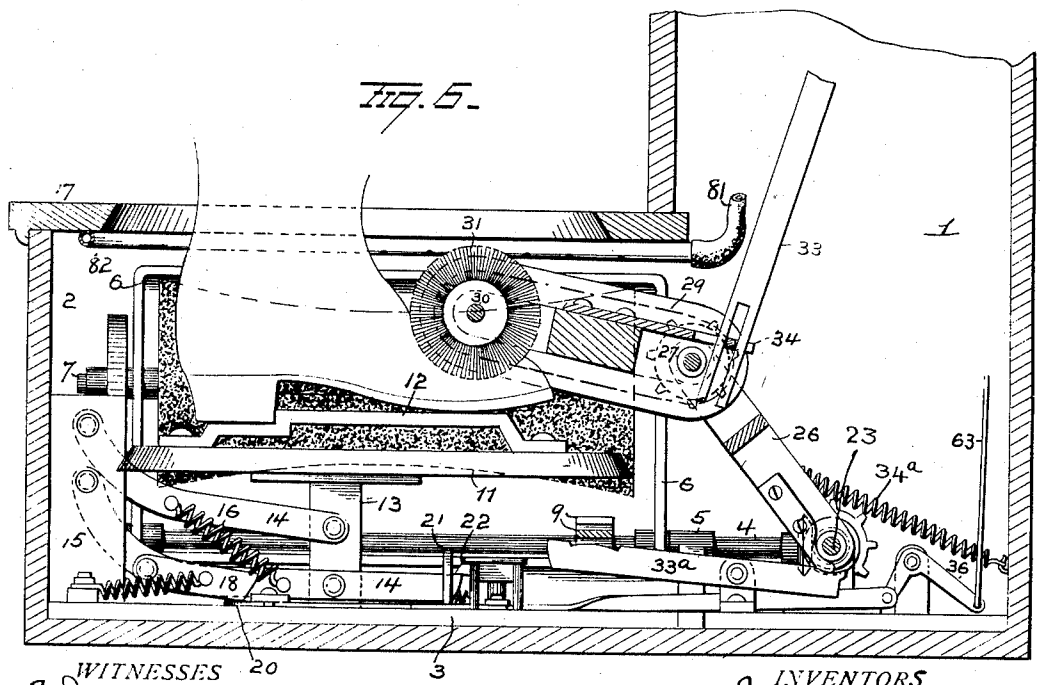



Fig. 6.




WITNESSES

E. DeNottingham

G. F. Downing.

INVENTORS

J. M. Wolkosky

F. Magidson

S. Printz and

A. Wolkosky

By H. A. Seymour Attorney

No. 868,620. PATENTED OCT. 15, 1907.

J. M. WOLKOSKY, F. MAGIDSON, S. PRINTZ & A. WOLKOSKY.

SHOE CLEANING AND SHINING MACHINE.

APPLICATION FILED JUNE 16, 1906.

4 SHEETS—SHEET 4.

Fig. 11.

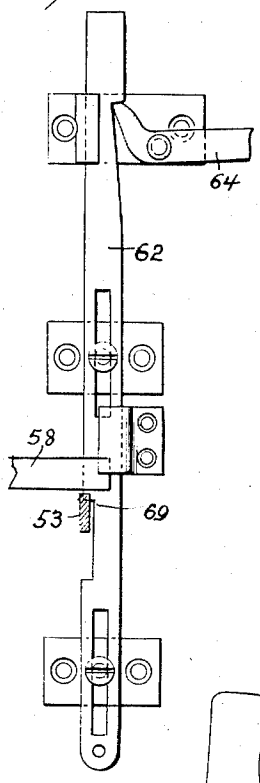



Fig. 7.

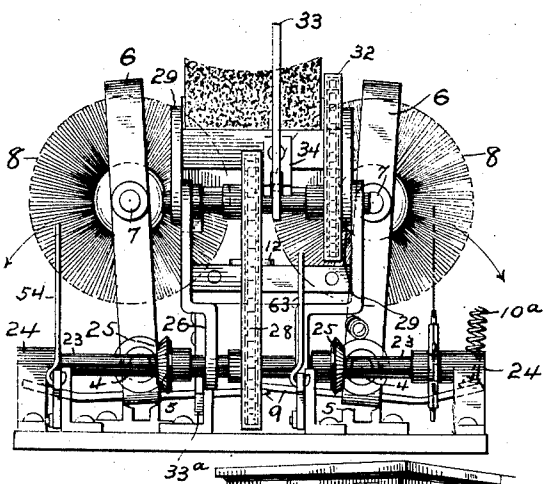



Fig. 12.



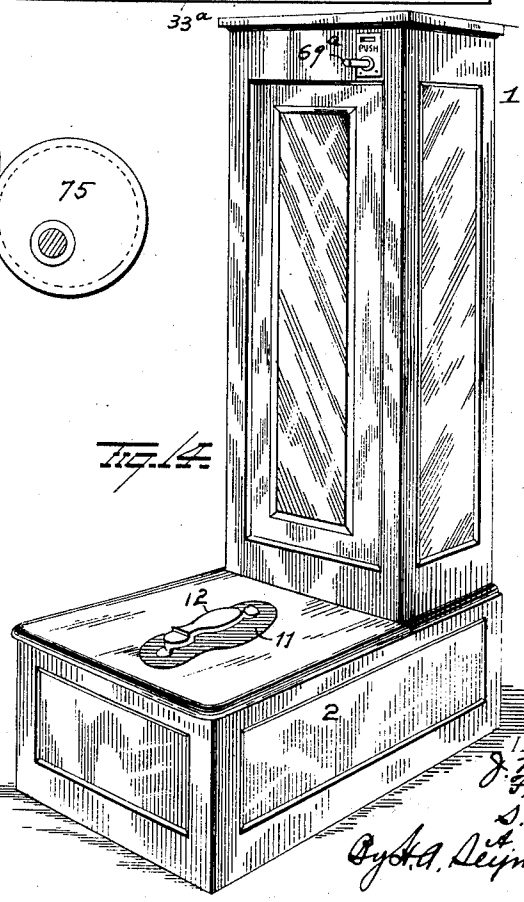




Fig. 13.

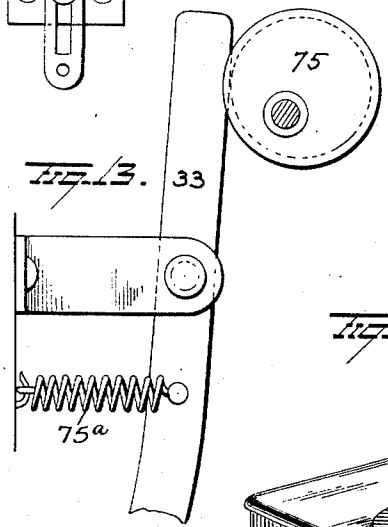



Fig. 14.

WITNESSES

E. L. Nottingham

G. F. Downing.

INVENTORS.

J. M. Wolkosky.

F. Magidson

S. Printz and

A. Wolkosky.

By H. G. Seymour Attorney

# UNITED STATES PATENT OFFICE.

JOSEPH M. WOLKOSKY, FRANK MAGIDSON, SAMUEL PRINTZ, AND ABRAHAM WOLKOSKY, OF IRWIN, PENNSYLVANIA, ASSIGNORS TO WESTMORELAND AUTOMATIC MACHINE COMPANY, OF IRWIN, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

## SHOE CLEANING AND SHINING MACHINE.

No. 868,620. Specification of Letters Patent. Patented Oct. 15, 1907.

Application filed June 16, 1906. Serial No. 322,012.

*To all whom it may concern:*

Be it known that we, JOSEPH M. WOLKOSKY, FRANK MAGIDSON, SAMUEL PRINTZ, and ABRAHAM WOLKOSKY, of Irwin, in the county of Westmoreland and State of Pennsylvania, have invented certain new and useful Improvements in Shoe Cleaning and Shining Machines; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to improvements in shoe cleaning and shining machines, an object of the invention being to provide an improved arrangement of brushes and operating mechanism therefor to thoroughly clean and polish the shoes, all of which mechanism being controlled by the insertion of a coin or check.

A further object is to provide an improved power driven mechanism of this character having improved means for automatically stopping the motor and locking the parts in inoperative position.

A further object is to provide improved automatically controlled mechanism for applying liquid polish to the shoe after the shoe has been cleaned and then thoroughly shine the shoe.

A further object is to provide parallel rotary brushes for cleaning and polishing the sides and back of the shoe and provide an improved rotary brush moved back and forth over the toe portion of the shoe to clean and polish the same.

With these and other objects in view the invention consists in certain novel features of construction and combinations and arrangements of parts as will be more fully hereinafter described and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in front elevation with the casing broken away. Fig. 2 is a similar view with parts of the operating mechanism removed. Figs. 3, 4, 7, and 10 are views of the brush and brush actuating mechanism removed from the casing; Fig. 3 being a top plan view, Fig. 4 a similar view of the mechanism beneath the brush, Fig. 7 an inner end view, and Fig. 10 a view in cross-section of the brush carrying frames together with parts of the base mechanism. Figs. 5 and 6 are vertical longitudinal sectional views of the base of the machine and its contained mechanism, Fig. 5 illustrating the normal position of the parts when out of operation, and Fig. 6 the same when operating upon a shoe. Fig. 8 is a sectional view of the mechanism at the top of the machine for starting the same. Fig. 9 is a side elevation of the chain of gearing driven by the motor and some of the parts associated therewith. Fig. 11 is a detail view of part of the mechanism associated with the time wheel for starting and stopping the motor. Fig. 12 is a detail view of the lever for locking the chain of gearing in starting position. Fig. 13 is a detail view of the upper portion of the toe-brush operating lever and cam. Fig. 14 is a perspective view of the machine. Figs. 15 and 16 are detail views of the circuit-closing contact operated upon the depression of the foot-rest, Fig. 16 being a section on line X—X of Fig. 15.

1 represents the upright portion of our improved machine casing and 2 the base portion thereof. This casing may be made of various shapes and ornamented in any desired manner and we do not restrict ourselves in this particular.

In the base portion 2 a removable base plate 3 is located and supports the brushes and foot rest as will now be explained. Parallel horizontal shafts 4, 4 are mounted in bearings 5 on base plate 3 and rectangular brush carrying frames 6 are hinged or fulcrumed on these shafts 4 and carry shafts 7 on which the side brushes 8 are secured and sprocket chains $8^a$ connect sprocket wheels on the shafts 4 and 7 to compel them to turn together. These brushes are so shaped as to conform to the general outline of the sides of a shoe and to clean the back of the shoe as the brushes are slightly enlarged at their rear ends and will brush all around the back of the shoe when the intermediate bristles are more or less compressed against the sides of the shoe.

Cross bars 9 are secured to the lower members of brush frames 6 and the inner ends of these bars 9 overlap so that when the underlying bar 9 is locked by its spring catch 10, both brush frames will be held at an angle away from the foot rest 11 between them. This catch is operated by a bell-crank 37 to be hereinafter explained and a spring $10^a$ exerts a pull on one bar 9 to draw the frames 6 toward each other. The foot rest 11 comprises a board or plate with foot form 12 thereon and is made with a depending lug 13 pivotally connected by curved links 14 with a standard 15 on base plate 3, and these links 14 are connected by a coiled spring 16 to normally hold the foot rest elevated and projected up into position to close an opening in the top 17 of base portion 2 of the casing. The links 14 compel the foot rest, when depressed to move down in a horizontal position but the downward movement of the foot rest is normally prevented by a spring held pivoted finger 18 on the lower link 14. This finger 18, when the foot rest is elevated will move against a shoulder 19, forming a lock, which prevents any downward movement of foot rest, until a sliding guide bar 20 is drawn in position beneath the finger 18 to guide it over the shoulder 19 and permit the foot rest to lower, and a spring $20^a$ tends to move the guide to this position. When the foot rest is forced down to its lowest position, the forwardly projecting end of the lower link 14 will move into a bifurcated bracket 21 on base plate 3 and be caught by a

spring catch 22 and held locked in lowered position during the polishing operation, the guide bar 20 and spring catch 22 being connected to and operated by a bell-crank 36 as will hereinafter appear.

Across the inner end of base plate 3 a horizontal shaft 23 is supported in bearings 24 and connected by beveled gears 25 with the shafts 4, to compel all of said shafts to turn together. A frame 26 is pivoted on the central portion of shaft 23, and carries a shaft 27 and sprocket wheels on said shafts 23 and 27 are connected by a chain 28. A toe brush frame 29 is pivotally secured on shaft 27 and carries a shaft 30 at its free end on which a rotary toe brush 31 is secured and a sprocket chain 32 connects sprocket wheels on the shafts 27 and 30, and an operating lever 33 fulcrumed between its ends in the upright portion of casing 1 is located in a slotted bar 34 on frame 29 and is adapted to reciprocate the brush 31 back and forth over the toe portion of the shoe as the brush is revolved, as will more fully hereinafter appear, and a spring $34^a$ normally holds this toe brush out of operative position.

A lever $33^a$ is fulcrumed between its ends on base plate 3 and projects beneath the overlapping ends of cross bars 9 and the opposite end of this lever $33^a$ is engaged by the toe brush frame so that at each forward movement of the toe brush the side brushes will be forced apart, so that the last forward movement of the toe brush will force the side brushes into locked position, as the catch 10 will be previously released as explained in the operation of the machine.

In the upright portion 1 of the casing two horizontal shafts 38 and 39 are supported in suitable bearings and sprocket wheels 40 thereon are connected by a chain 41 as shown, and a belt 42 driven by an electric motor 43 drives a pulley 44 on shaft 39 and a sprocket chain 45 connects a sprocket wheel on shaft 38 with a sprocket wheel on shaft 23 to drive the brushes at the proper rate of speed.

Secured in the back of the upright portion of casing 1, is a plate 46, to which a frame 47 is secured and supports a chain of gearing 48, to which motion is transmitted by a belt 49 connecting a pulley 50 on shaft 38 with a pulley 51 on a shaft at the lower end of the chain of gearing 48. The upper wheel 52 of the chain of gearing is driven at a very slow speed, and this wheel 52 controls the time of operation of the brushes and will be hereinafter referred to as the "time wheel", and this time wheel 52 carries a finger 53 which trips the several mechanisms which will be hereinafter explained.

The bell-crank 37 on base plate 3, is connected by a wire or rod 54 with the free end of a pivoted lever 55 and has a coiled spring 56 between its ends. The lever 55 is connected by a rod 57 with a trip arm 58 and a coiled spring 59 normally holds this rod 57 in its lowest position. The finger 53 of time wheel 52 strikes this trip arm 58, and draws rod 57, lever 55, and wire 54 upward to operate bell crank 37 and move catch 10 to release the brush frames, and a spring held dog or catch 60 will move its lug 61 into a notch in rod 57 to hold the parts in this position until the dog 60 is struck by the finger 53 as the time wheel nears its complete revolution to move the lug 61 out of the notch and permit the several springs to return the parts to their former position, and at the same time release the catch 10.

A vertically movable rod 62 is located about the center of casing 1 and connected by a wire 63 with bell crank 36 and the rod is normally held up by a pivoted spring held dog 64 engaging a notch in the rod. This dog 64 is connected to a vertically movable rod 65 the latter connected at its upper end to a crank arm 66 on a crank bracket 67 and the other member 68 of said bracket is operated by any approved check controlled mechanism, a push bar $69^a$ being illustrated to move the crank bracket and depress rod 65, to release dog 64 from rod 62 and permit the latter to fall. This rod 62 is made with a shoulder 69 which is engaged by the finger 53 of time wheel 52 to elevate the rod 63 and return the parts to their normal positions.

The extreme lower end of rod 65 is connected to a bell-crank 70 and the latter moves in the path of the upper end of a pivoted lever 71. The lower end of lever 71 is provided with an arm 72 which is normally held by a spring 73 in the path of a lug 74 on pulley 51 to prevent any turning of the chain of gearing. When the rod 65 is depressed by the coin controlled mechanism, the bell-crank 70 will move lever 71 to throw its arm 72 out of the path of lug 74 and permit the chain of gearing to operate, but when the rod 65 again ascends, due to the dog 64 springing into the notch in rod 62, the lever 71 will return the arm 72 to position to lock the gearing. On one of the shafts of the chain of gearing a grooved cam wheel 75 is secured and engages the upper end of lever 33 to oscillate the latter against the pull of spring $75^a$ and move the toe brush back and forth over the toe portion of the shoe as it revolves.

The wires 76 in electric circuit with motor 43, are broken at two points, one in the upper portion of casing 1, and the other at the base plate 3. In casing 1, a pivoted arm 77 carries a contact point normally held away from a fixed contact point 78 by the upper end of rod 62, but when the latter moves downward a spring $79^a$ forces the contacts 77 and 78 together but the circuit is not closed to start the motor until the foot-rest is depressed, when the supporting link 14 of the latter will press the contact points 79 together and close the circuit to start the motor. Contacts 79 are secured one above the other in slots formed in a block 79′ of insulating material, the whole being clamped together and secured to base 3 by screw 79″. Each of the contacts 79 is formed with a lateral projection 76′, and these projections extend from opposite sides of block 79′ with circuit wires 76 secured thereto. Being in the path of link 14, the normally separated contacts 79 are pressed together when the link lowers upon the depression of the foot rest.

A tank 80 to contain liquid polish is located in the upper portion of casing 1 and has a hose connection 81 with a perforated pipe 82 secured to the under face of the top plate of casing 2, around the opening therein, to direct a predetermined quantity of the liquid onto the shoe. A cock 83 is located in the line of hose 81 and has a trip arm 84 normally held in closed position by a spring 85 and this trip arm 84 is in the path of finger 53 on time wheel 52 so that, at the proper time, the cock 83 will be opened for an instant to permit the desired quantity of liquid to escape, and will be promptly closed and held closed by the spring 85.

The operation of our improvements is as follows:— When a coin or check is dropped into position and the push bar or plunger 69 forced in, the crank bracket 67 will be moved to force the rod 65 downward to swing

bell-crank 70 and lever 71 to move the arm 72 out of the path of the lug 74 on pulley 51 and permit the gearing to be operated. The depression of rod 65 also moves the dog 64 out of the notch in rod 62, and the latter will fall, permitting contact points 77 and 78 to come together. The downward movement of rod 63 will permit bell-crank 36 to be moved by the spring $20^a$ to bring the guide 20 under the pivoted finger 18 of the link 14, and the foot rest 11 can be depressed, as the guide 20 will direct the finger 18 over the stop or shoulder 19. When the foot rest is forced down to working position, the spring catch 22 will engage the forward end of lower link 14 and hold it in this position. The depressing of foot rest 11 will also force the contact points 79 together and close the electric circuit to start the motor, when motion will be transmitted to drive the chain of gearing, as above explained, and motion will be transmitted by means of the several sprocket chains above described, to revolve all the brushes simultaneously. As the chain of gearing starts the finger 53 on time wheel 52 will first engage trip arm 58 to elevate rod 57 and through the medium of lever 55 and wire 54 will operate bell-crank 37 to draw back spring catch 10 and release the roller frames 4, 4 thereby permitting the latter to be moved toward each other and against the sides of the shoe, by the spring $10^a$. When rod 57 is elevated the dog 60 will spring into its notch in rod 57 and hold this rod elevated until released. As the chain of gearing continues to turn, the cam wheel 75 will oscillate lever 33 and slowly move the toe brush frame 29 onto and off the toe portion of the shoe and by this means the entire polishing surface of the shoe will be thoroughly cleaned. After the brushes have operated for a fraction of a minute on the shoe, to clean the same, the finger 53 on time wheel 52 will strike the trip arm 84 on cock 83 and open the cock for an instant to allow a small quantity of the polishing liquid to escape through base 81 and be directed by perforated tube 82 against the shoe. The brushes continuing to operate as above explained give to the shoe the desired shine and at the proper time, the finger 53 on time wheel 52 will engage dog 60 releasing the rod 57, and permitting the latter to be drawn down by its spring and thereby allowing spring catch 10 to move to position to lock the brush frames 6 when the latter move back. The trip finger 53 next strikes the shoulder 69 on rod 62 and elevates the latter which separates contact point 77 and 78 and stops the motor, and when this rod 62 is elevated it will permit the dog 64 to spring into the notch in rod 62 and allow the lever 71 to swing its arm 72 into the path of the lug 74 on pulley 51 and lock the gearing against further movement. The upward movement of rod 62 will also operate bell-crank 36 to release catch 22 from the foot rest and permit the latter to rise. The release of catch 22 also moves guide 20 out from beneath finger 18 so that the foot rest will be locked and cannot again be depressed until a coin is inserted and the machine operated as before. The polishing liquid in the tank may be under pressure if desired to insure quick delivery when the cock is opened, or the liquid may flow by gravity as preferred.

A great many changes might be made in the general form and arrangement of the parts described without departing from our invention, and hence we do not restrict ourselves to the precise details set forth but consider ourselves at liberty to make such slight changes and alterations as fairly fall within the spirit and scope of our invention.

Having fully described our invention what we claim as new and desire to secure by Letters-Patent, is:—

1. The combination of a foot rest, movable brushes at opposite sides of the rest, means for moving said brushes laterally with relation to the rest, a movable front brush, and means for moving the front brush toward the rest when the side brushes are away from the rest.

2. The combination of brushes, a shoe support movable toward and away from the brushes, springs for opposing the movement of the support toward the brushes and for holding it normally away from the brushes, means for holding the support in position adjacent to the brushes, and means operative at a predetermined time for releasing the support from said holding means.

3. The combination of brushes, a depressible foot rest normally raised above the brushes, a catch adapted to hold the rest depressed, catch releasing mechanism, and means to operate the releasing mechanism at a predetermined time after the rest becomes held by the catch.

4. The combination of a foot rest, opposite side brushes, means for moving said brushes simultaneously toward and from the rest, a front brush movable in the direction of the length of the rest, and means for moving the front brush toward the rest as the side brushes move outward therefrom.

5. The combination of a foot rest, brushes at opposite sides of the rest and movable in unison toward the foot rest and from the same, a front brush movable toward and from the rest into the paths of movement of the side brushes, and brush moving mechanisms adapted to cause the side and front brushes to approach the rest alternately.

6. The combination of a foot rest, rotatable brushes at opposite sides of the rest and movable in unison toward and from the same, a rotatable front brush movable toward and from the rest into the paths of movement of the side brushes, brush rotating mechanism, and brush moving mechanisms adapted to move the side brushes toward the rest simultaneously with moving the front brush away from the rest and vice versa.

7. The combination of a foot rest, an upright frame in front of the rest and mounted to swing in the direction of the length of the rest, a brush mounting adapted to swing vertically on the frame and extending therefrom toward the foot rest, and a brush in the mounting.

8. The combination of a foot rest, a brush mounting hinged to swing vertically, stop means for limiting the downward movement of the mounting, means for moving the mounting toward and from the front of the rest in the direction of the length of the latter, and a brush carried by the mounting.

9. The combination of a foot rest, a power shaft, an upright frame hinged on the shaft to swing toward and from the rest, a shaft in the free end of the frame, a brush mounting hinged to swing vertically on said shaft, a brush rotatable in the mounting, and gearing connecting said shafts and the brush.

10. The combination of a foot rest, a brush carrier movable toward and from the rest, a brush, an upright lever at its lower end engaging the carrier, mechanism for oscillating the lever to move the carrier toward the rest, and a spring for retracting the carrier.

11. The combination of a foot rest, parallel horizontal power shafts at opposite sides of the rest, an upright frame mounted to swing concentrically with relation to each shaft, a brush rotatably mounted in each frame, gearing connecting the shaft and brush of each frame, and frame swinging means.

12. The combination of a foot rest, frames at opposite sides of the rest adapted to swing toward and from each other, a brush carried by each frame, and means for causing the frames normally to move toward each other, intermittently operating mechanism for moving the frames apart, mechanism for holding the frames apart, and intermittently operating frame releasing mechanism.

13. The combination of a foot rest, upright frames at op-

posite sides thereof adapted to swing toward and from each other, a brush carried by each frame, transverse overlapping bars secured to the frames, means for causing the frames to normally swing toward each other and depress the overlapping portions of the bars, a lever adapted to raise the overlapping portions of the bars, and means for intermittently operating the lever.

14. The combination of a fixed upright, a foot rest, links pivoted to swing vertically on the upright and also pivoted to the rest whereby the latter is maintained in horizontal position, a spring for resisting depression of the rest, and brushes to which the rest is adapted to be lowered.

15. The combination of a fixed upright, a foot rest, links pivoted to swing vertically on the upright and also pivoted to the rest, a spring for resisting depression of the rest, a downwardly swinging finger pivoted to one of the links, a stop adapted to be engaged by the finger for locking the rest in elevated position, means for disengaging the finger from the stop, and brushes to which the rest is adapted to be lowered.

16. The combination of a casing having a top opening, a depressible spring-raised foot rest normally closing the opening, lock mechanism for securing the rest in raised position, lock releasing mechanism, and brushes operative within the casing and to which the rest is adapted to be depressed when unlocked.

17. In a shoe cleaning and shining machine, the combination with a casing and shoe cleaning and shining mechanism therein, of a shoe support in the upper portion of the casing, locking means for preventing the downward movement of the shoe support and mechanism for releasing said locking means to permit the shoe support to lower to operative position and compel the operation of the shoe cleaning and shining mechanism.

18. In a shoe cleaning and shining machine, the combination with a casing and shoe cleaning and shining mechanism therein, of a shoe support normally closing an opening in the upper portion of the casing, locking mechanism holding the shoe support elevated, mechanism for releasing the locking mechanism and setting the shoe cleaning and shining mechanism in operation, and automatic means for applying liquid polish to a shoe on the support when the latter is moved down into operative position.

19. In a shoe cleaning and shining machine, the combination with rotary brushes, and a motor to drive the same, of a shoe support, locking devices normally holding the shoe support elevated out of contact with the brushes, mechanism to release the locking mechanism to permit the shoe support to be forced down to operative position and also start the motor, and automatic mechanism for stopping the machine after a predetermined time.

20. In a shoe cleaning and shining machine, the combination with rotary shoe brushes, a motor to revolve the brushes, a liquid polish containing tank, and a pipe for conveying said liquid to a point to be deposited on a shoe between the brushes, of a time wheel driven by the motor, an arm on the time wheel, a spring closed cock in the said pipe, a trip arm on said cock in the path of the arm on the time wheel, trip mechanism operated by the arm on the time wheel to stop the motor and operating mechanism, and mechanism for starting the motor.

21. In a shoe polishing machine, the combination of a side brush movable toward and from a shoe, a front brush, a support for the front brush movable toward and from the shoe, means for causing the side brush to engage the shoe alternately with the front brush, and means actuated by the front brush support as the front brush is being moved toward the shoe for moving the side brush away from the shoe.

22. In a shoe polishing machine, the combination of opposite side brushes movable toward and from each other, a support for the front brush movable toward and from the side brushes, a spring for moving the side brushes toward each other, and mechanism actuated by the front brush support and operated by the latter as the front brush approaches the side brushes to move the side brushes away from each other.

In testimony whereof, we have signed this specification in the presence of two subscribing witnesses.

JOSEPH M. WOLKOSKY.
FRANK MAGIDSON.
SAMUEL PRINTZ.
ABRAHAM WOLKOSKY.

Witnesses for J. M. Wolkosky and Frank Magidson:
S. W. FOSTER,
R. S. FERGUSON.
Witnesses for Printz and Abraham Wolkosky:
BARNEY ABRAMS,
ALBERT M. SHOTTS.