

(No Model.)

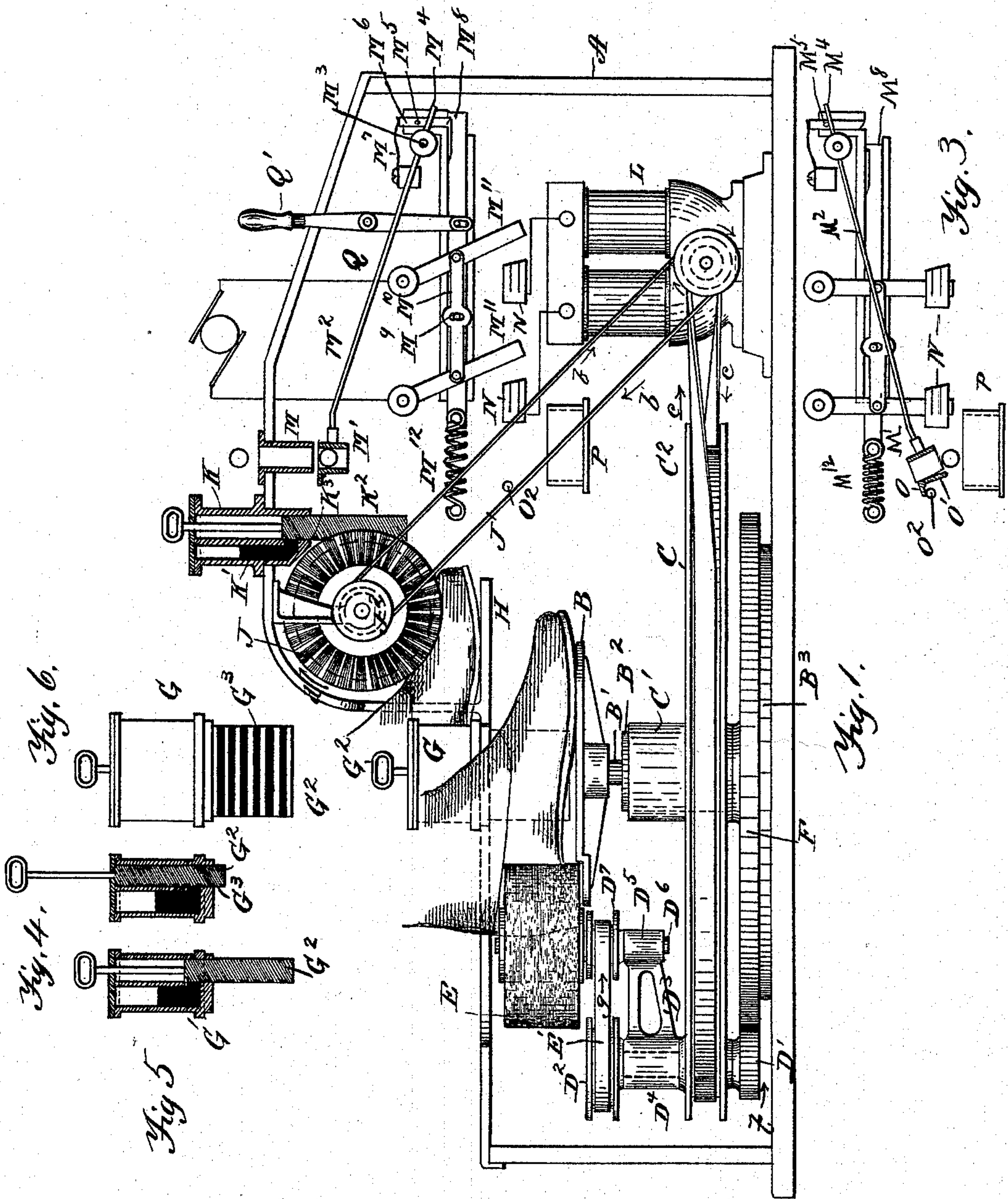
2 Sheets—Sheet 1.

J. O. HEINZE, Jr.

AUTOMATIC ELECTRICAL BOOT BLACKING MACHINE.

No. 527,977.

Patented Oct. 23, 1894.



Witnesses
E. L. Harlow
L. B. Trow

Inventor
John O. Heinze Jr.
By J. A. Rusk
Attorney

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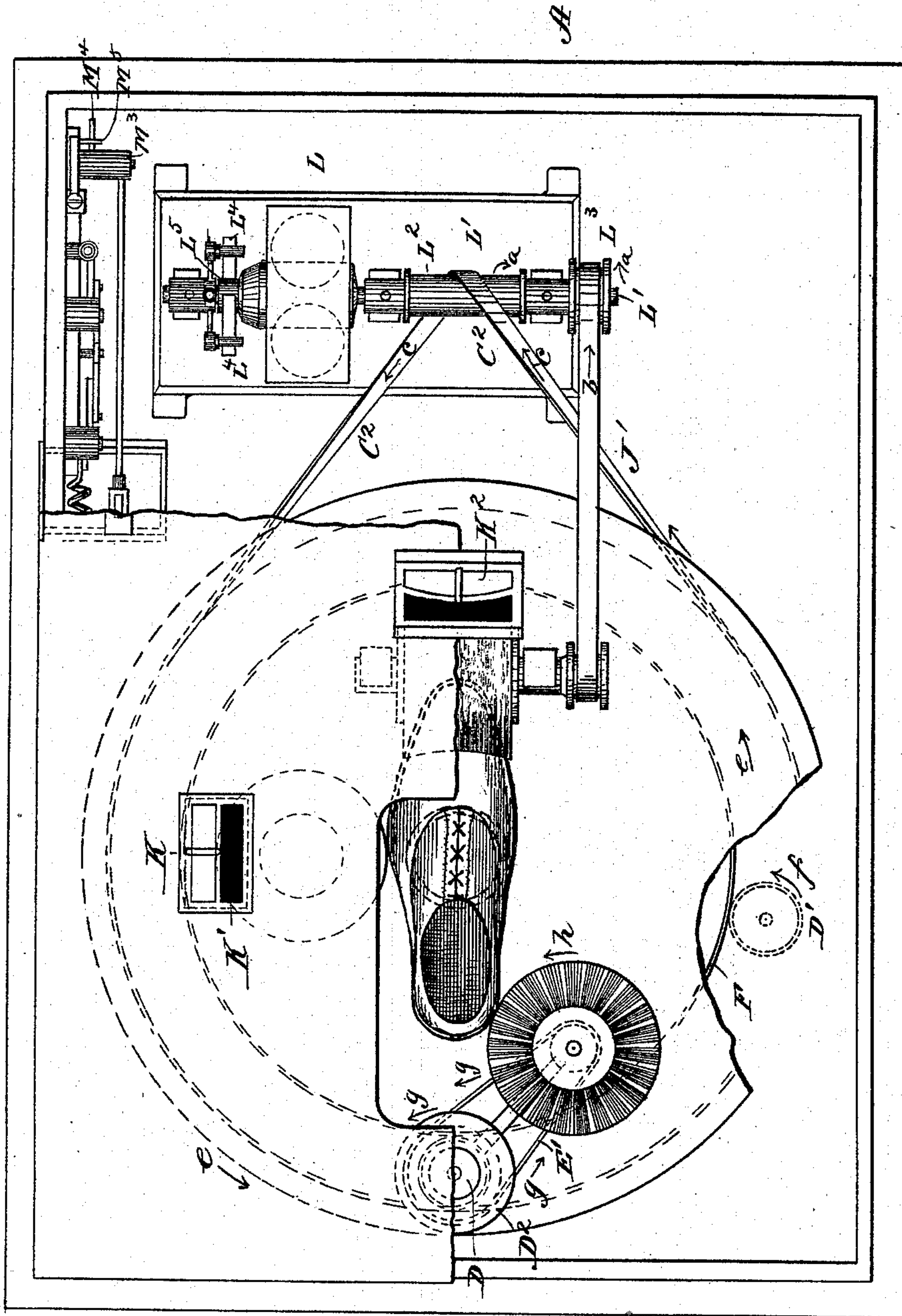


Fig. 2.

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UNITED STATES PATENT OFFICE.

JOHN O. HEINZE, JR., OF LYNN, MASSACHUSETTS.

AUTOMATIC ELECTRICAL BOOT-BLACKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 527,977, dated October 23, 1894.

Application filed April 2, 1894. Serial No. 506,054. (No model.)

To all whom it may concern:

Be it known that I, JOHN O. HEINZE, Jr., of Lynn, county of Essex, and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Automatic Electrical Boot-Blackening Machines; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to certain new and useful improvements in electrical boot blackening machines and also to mechanism for automatically starting said machines, and its general object is to provide a machine of this class, simpler in construction and more convenient of operation than those heretofore in use.

One feature of my invention consists of means for automatically starting the said boot blackening machine by closing the electric circuit by dropping a coin into a money pocket, which, moving by the weight of the coin, closes the said circuit and starts the operation of the machine.

My invention further consists of certain novel features, arrangements and combinations hereinafter particularly described and pointed out in the claims.

Figure 1 represents a side elevation of the machine with the side casing removed to show its construction. Fig. 2 is a plan view of the machine with parts of the top casing broken away to show certain parts of the mechanism. Fig. 3 is a detail view of the automatic electric circuit closing device showing the parts in their positions when the circuit is closed. Fig. 4 is a side view in section of the blacking pot. Fig. 5 is a similar view showing the piston as moved down to supply the blacking brush with blacking. Fig. 6 is an end view of the blacking pot showing grooves cut in the face of the piston to hold the blacking which is to be supplied to the brushes.

Like letters of reference refer to like parts throughout the several views.

Within the case A of the machine there is arranged a foot rest B mounted on a fixed shaft B', and around this shaft is a fixed, metallic bushing B² which may, if desired, be cast in one piece with the base plate B³. Sur-

rounding this bushing there is a disk C having a sleeve C' resting on the base plate B³ and loosely mounted on and capable of movement around the said shaft B'. This disk C is driven by the belt C² in a manner hereinafter described.

Near the periphery of the disk C there is a shaft D extending through said disk on both sides and has secured at its lower end a friction pulley D' which rotates on the surface of the outer periphery of a fixed circular disc F cast with or secured in any desired manner to the base plate B³. At the upper end of this revoluble shaft D there is a fixed pulley D², and below the fixed pulley D² and above the disk C there is a sleeve D⁴ around the shaft D, having an extension D³ provided at its outer end with a sleeve D⁵ in which is located the revoluble shaft D⁶, which extends upwardly and forms the driving shaft of the brush E secured thereto. At about the center of the shaft D⁶ there is fixed to it the pulley D⁷, and around the pulley D² and the pulley D⁷ there is a driving belt E' by which motion from the shaft D is communicated to the shaft D⁶, by which the brush E is revolved against the side of the boot as the brush moves around the sides of the boot in a manner hereinafter described.

After the foot has been placed on the rest B and the machine started, as hereinafter described, the brush E moves around the sides of the shoe to clean the same, and after this operation the said brush takes its blacking from the blacking pot G and applies it to the shoe. This blacking pot G has on one side a well G' and on the other side a piston chamber in which the piston G² operated by hand moves up and down to supply the brush E with blacking, and in the face of this piston there are cut the grooves G³ to carry the blacking to the brush E, which is then applied to the shoe, and the continued revolution of the brush E, after the application of the blacking, polishes the shoe. After the sides of the shoe have been polished the foot is raised from the rest B and the sole of the shoe is placed upon a small rest H in position under the brush J, which is secured to shaft J² supported from the top casing of the machine. This brush J applies blacking to the top of the shoe and polishes the same, and

after the shoe is polished the machine can be thrown out of operation in a manner herein-after described.

The shaft J^2 , to which the brush J is secured, is driven by the belt J' in a direction indicated by the arrows, and it receives its motion from the same source as the belt C^2 which drives the disk C, as will be hereinafter described. For this top brush J a blacking pot K is provided, and it is of similar construction to the blacking pot G for the brush E which operates on the sides of the shoe. It has a well K' for the blacking, and piston chamber in which the plunger K^2 moves and which is provided with the grooves K^3 to carry the blacking into the brush J to be applied to the top of the shoe. The front of the plunger K^2 , where the grooves K^3 are cut is curved to conform to the shape of the brush, as indicated in plan view Fig. 2.

So far I have described the mechanism for blacking the sides and top of the shoe, and without reference to the means for communicating the power to the mechanism for carrying out this purpose, I will now describe the mechanism by which the machine is started in operation.

The motor L is of the usual construction and has an armature L' provided on one side with pulley L^2 fixed thereon and beyond said pulley another pulley L^3 also fixed thereon. On the opposite end of the armature there is provided the usual brushes L^4 and the commutator L^5 . When the armature is revolved by the closing of the circuit the pulley L^2 is revolved and drives the belt C^2 which revolves the disk C in a direction indicated by the arrow, and at the same time the pulley L^3 drives the belt J' which revolves the shaft J^2 of the brush J in a direction indicated by the arrows. To close the circuit and thus automatically operate the machine, I have provided a chute M in the top casing of the machine of sufficient size to receive a nickel or other suitable coin, which, passing through this chute, enters the pocket M' and is held therein, and by its weight carries down the lever M^2 secured to the weighted sleeve M^3 , pivoted to the side of the machine, and which sleeve holds the lever M^2 in the position shown in Fig. 1. In the downward movement of this lever M^2 and the revolution of the sleeve M^3 on its pivot the pin M^4 , secured to the sleeve M^3 , strikes the pin M^5 on the key M^6 and raises said key, as shown in Fig. 3, against the tension of the spring M^7 , and permits the inward movement of the bar M^8 , under the tension of the spring M^{12} , as shown in Fig. 3. On the bar M^8 , near its center, there is provided the pin M^9 which, in the movement of the bar M^8 , moves a piece of fiber or insulating material M^{10} which is pivotally connected to two metal bars M^{11} , and by the movement of this bar M^8 , under the tension of the spring M^{12} after being released from the key M^6 , the two metal bars M^{11} are brought into contact with the switch N, by

which the electric circuit is closed, and the armature L caused to revolve and with it the pulleys L^2 , L^3 , by which motion is communicated to the disk C and the shaft J^2 , and the operation of the machine started.

When the circuit has been closed, as above stated, the armature shaft L' of the dynamo L and the pulleys L^2 , L^3 mounted on the armature shaft L' revolve in a direction indicated by the arrow a and move the belts J' and C^2 in a direction indicated respectively by the arrows b , c on the said belts. The belt J' moving in this direction causes the rotation of the brush J in a direction indicated by the arrow d . The belt C^2 moving in a direction indicated by the arrows c on the said belts moves the disk C in a direction indicated by the arrows e . This direction of movement of the disk C causes the friction pulley D' to revolve around the fixed disk F in a direction indicated by the arrow f . This direction of movement of the friction pulley D' causes a revolution of the shaft D, which is communicated to the pulley D^2 and moves the belt E' in a direction indicated by the arrow g . The brush E is revolved by the belt E' in a direction indicated by the arrow h against the sides of the shoe. This direction of movement of the belt E' and of the brush E, which is driven thereby, tends to hold the brush in close contact with the sides of the shoe in the revolution of the disk C and the brush E around the shoe. By this strain of the belt E' , moving in the direction indicated, the tendency is to hold the brush E, in its revolution, against the side of the shoe and give an even pressure upon it, in the revolution of the disk C in a direction indicated by the arrow e . The downward movement of the lever M^2 continues until the projection O on the side O' of the money pocket M' strikes a projection O^2 in the side of the casing and tilts the lower end of the side O' outwardly a sufficient distance to permit the coin to drop from the money pocket M' into the money receptacle P, after which the lever M^2 returns to its normal position by reason of the weighted sleeve M^3 , as previously described.

To break the electric circuit and stop the operation of the machine there is provided the lever Q pivoted in the frame of the machine and having a projecting handle Q' outside of the casing, so that when this lever is operated and the movable bar M^8 , to which it is connected, is reversed from the position shown in Fig. 3 to that shown in Fig. 1 the key M^6 , under the pressure of the spring M^7 , drops into a cavity of the bar M^8 at its farthest end and locks said bar M^8 against inward movement and also against the tension of the spring M^{12} and holds it in this position and breaks the circuit by moving the bars M^{11} away from the switches N, all as shown in Fig. 1.

I do not limit myself to the exact arrangement and construction shown, as the same

may be varied without departing from the spirit of my invention.

Having thus ascertained the nature and set forth the construction of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a boot blacking machine, the combination of a foot rest, a rotary brush, a frame supporting the said brush mounted on a disk revolving around said shaft, driving mechanism operated by the said revolving disk for rotating the brush and moving it around the foot rest, an electric circuit, and a circuit closer operated by the weight of a coin to close the electric circuit and thereby operate the driving mechanism.

2. In a boot blacking machine, the combination of a foot rest mounted on a shaft, a rotary brush, a frame supporting the said brush mounted on a disk revolving around said shaft, and driving mechanism operated by the said revolving disk for rotating the brush and moving it around the foot rest.

3. In a boot blacking machine, the combination of a foot rest mounted on a shaft, a rotary brush, a frame supporting the said brush and mounted on a disk revolving around the said shaft, means for holding the brush in contact with the said shoe on the foot rest during its rotation, and driving mechanism operated by the said revolving disk for revolving the said frame and thereby causing the brush to travel around the shoe and to hold the brush, during its rotation, in contact with the shoe.

4. In a boot blacking machine, the combination of a foot rest mounted on a shaft, a rotary brush, a frame supporting the said brush mounted on a disk revolving around said shaft, means operated by the disk for holding the brush in contact with the shoe on the foot rest during its rotation, and driving mechanism for revolving the said frame and thereby causing the brush to travel around the shoe and to hold the brush, during its rotation, in contact with the shoe.

5. In a boot blacking machine, the combination of a foot rest mounted on a shaft, a disk adapted to revolve around said shaft, a rotary brush, a frame supporting at one end the shaft of the rotary brush and at the other end having a shaft passing through said disk, which shaft has fixed at its lower end a rotary pulley, a fixed disk with which the said rotary pulley contacts in the revolution of the revolving disk, and causes the revolution of the said shaft, connections between the said

shafts to communicate motion to the brush, and driving mechanism for rotating the said rotary disk and thereby communicate motion to the brush.

6. In a boot blacking machine, the combination of a foot rest, a rotary brush adapted to move around said foot rest to polish the sides of the shoe, another foot rest, and a brush located above the same for polishing the top of the shoe, and driving mechanism operated by the same motor for driving both brushes.

7. In a boot blacking machine, the combination of a foot rest, of a rotary brush adapted to move around the said foot rest to polish the sides of the shoe, another foot rest, and a brush located above the same for polishing the top of the shoe, blacking pots arranged in proximity to the brushes to supply the same with blacking, and driving mechanism operated by the same motor for driving both brushes.

8. In a boot blacking machine, the combination of a foot rest mounted on a shaft, a rotary brush, a frame supporting said brush and mounted on a disk revolving around the said shaft, a blacking pot arranged in proximity to the said rotary brush and adapted to supply the said brush with blacking, and driving mechanism operated by the said disk for revolving the said frame and thereby causing the brush to travel around the foot rest and pass the said blacking pot.

9. In a boot blacking machine, the combination of a foot rest mounted on a shaft, a bushing surrounding said shaft, a rotary brush, a frame supporting said brush mounted on a disk revolving around said bushing, and driving mechanism operated by the said disk for rotating the brush and moving it around the foot rest.

10. In a machine having mechanism operated by an electric circuit, a circuit closer consisting of two pivoted bars connected together and secured to a sliding bar, means, adapted to be released by the weight of a coin, for locking said sliding bar and circuit closers out of circuit, and a spring for moving said circuit closers to close the electric circuit, after the release of the locking means.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 29th day of March, 1894.

JOHN O. HEINZE, JR.

Witnesses:

C. H. BARBER,
L. H. TROW.