

I. J. WEIGLE.

SHOE BLACKING MACHINE.

APPLICATION FILED JULY 2, 1909.

Patented Feb. 7, 1911.

2 SHEETS—SHEET 1.

983,525.

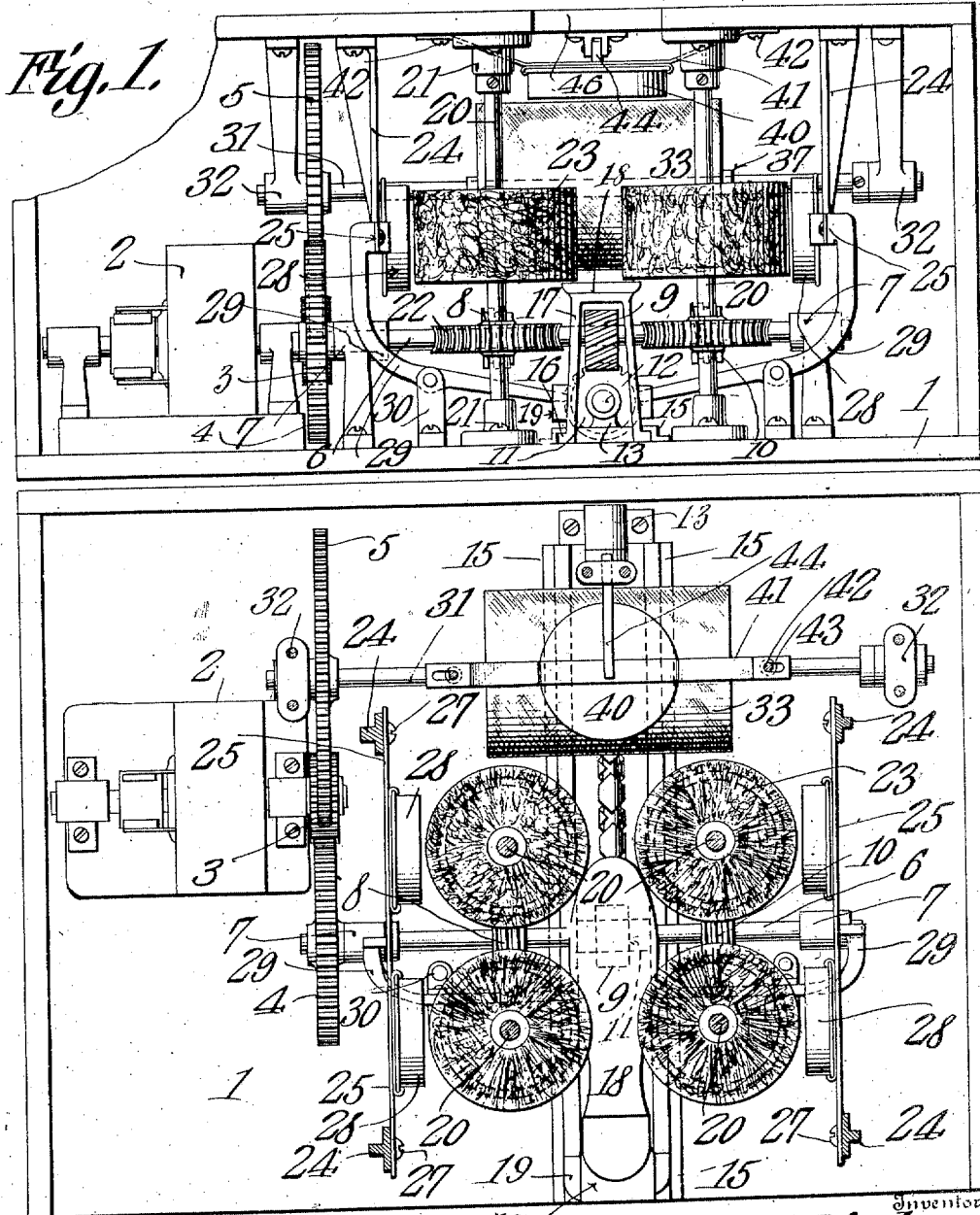


Fig. 2. 17 Irven J. Weigle.

Witnesses

H. J. Chapman
H. J. Chapman

By *C. A. Snow & Co.*
Attorneys

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Fig. 3.

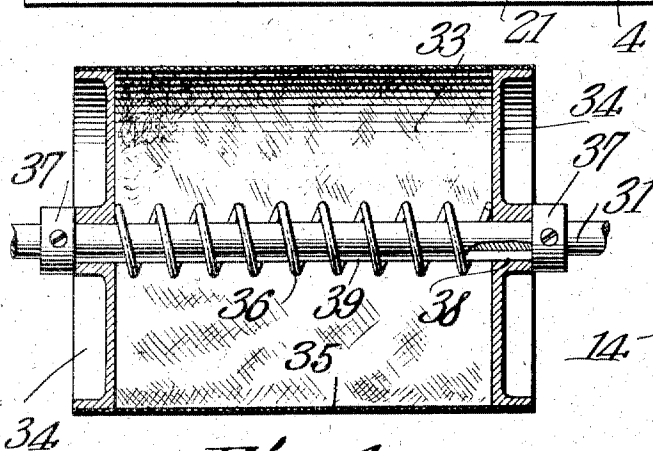
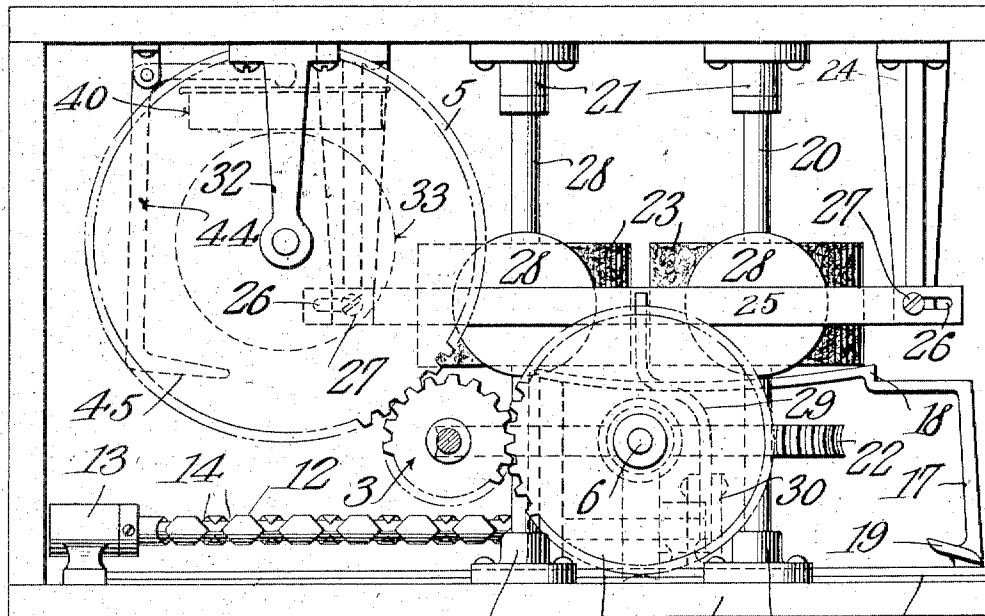


Fig. 4.

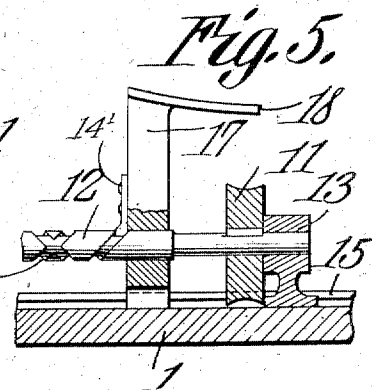


Fig. 5.

Witnesses
E. J. Weigle
F. J. Chapman

Inventor
Irven J. Weigle.
By *CA Snow & Co.*
Attorneys

UNITED STATES PATENT OFFICE.

IRVEN J. WEIGLE, OF ST. MARYS, PENNSYLVANIA.

SHOE-BLACKING MACHINE.

983,525.

Specification of Letters Patent.

Patented Feb. 7, 1911.

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To all whom it may concern:

Be it known that I, IRVEN J. WEIGLE, a citizen of the United States, residing at St. Marys, in the county of Elk and State of Pennsylvania, have invented a new and useful Shoe-Blacking Machine, of which the following is a specification.

This invention has reference to improvements in shoe blacking machines and relates more particularly to a machine which is automatic in character even to the proper presentation of the footwear to be blackened to the means for applying the blacking and for polishing the same after application.

It is the object of the present invention to provide a mechanism especially adapted for use in connection with a coin-controlled lock so that the operator has but to place the foot in position in the machine and then set the machine in operation after which the foot is moved automatically into position to receive blacking on the shoe or other foot covering and to then be subjected to the polishing action of suitable brushes or buffers after which the foot is returned to the initial position and may then be withdrawn from the machine.

The invention will be best understood from a consideration of the following detail description taken in connection with the accompanying drawings forming a part of this specification in which drawings—

Figure 1 is an elevation of the machine with a part of the casing removed. Fig. 2 is a plan view of the machine with the top of the casing removed. Fig. 3 is an elevation at right angles to that of Fig. 1 with the driving motor removed and the motor shaft shown in section. Fig. 4 is a detail section of a polishing drum used in a machine. Fig. 5 is a detail of adjacent parts of the foot rest and feed screw therefor.

Referring to the drawings there is shown a casing 1 of suitable shape and capacity to house the various working parts of the machine. Within the casing there is lodged an electric motor 2 of any suitable type and which therefore need not be described in detail. It is designed that this motor shall be cut into and out of circuit by means controlled by a suitable coin. The present invention does not include any particular type of coin-controlled mechanism and any suitable known type of such mechanism may be employed. For this reason the coin-con-

trolled side of the machine has been omitted from the drawings.

The shaft of the motor 2 carries a pinion 3 meshing with two gear wheels 4 and 5. The gear wheel 4 is mounted on one end of a shaft 6 having appropriate journal bearings 7 and this shaft carries three worms 8, 9, 10 appropriately spaced for purposes which will hereinafter appear. The intermediate worm, which is the worm 9, meshes with a worm gear 11 upon a shaft 12 having suitable journal bearings 13 on the bottom of the casing 1, said shaft extending along the casing in a direction at right angles to and below the shaft 6. The shaft 12 for the greater portion of its length is provided with long pitch screw grooves 14, there being two such grooves of like character in reverse order on the shaft and these grooves are joined at the ends so that a pin or stud 14' engaging one of the grooves 14 will be fed along the length of the shaft and then entering the second groove will be returned by the latter to the starting point.

On the bottom of the casing on opposite sides of the vertical longitudinal plane of the shaft 12 are guide strips 15 in which engage a carriage 16 from the ends of which rise standards 17 supporting a foot rest 18. This carriage is provided with a pin or stud or projection engaging in the grooves 14 so that upon rotative movement of the shaft 12 the carriage will be fed along said shaft for an appropriate distance and will then be returned to the initial position. The rear standards 17 of the carriage are provided with inclined ledges 19 for a purpose which will presently appear.

On opposite sides of the shaft 6 adjacent to the worms 8 and 10 are upright shafts provided with bearings 21 in the bottom and at the top of the casing. Each shaft 20 carries a worm gear 22 in mesh with the worm 8 or 10, the shafts being arranged in pairs, two of them having the worm gears 22 in mesh with the single worm 8 and the other shafts 20 having their gears 22 in mesh with the worm 10.

At an appropriate distance above the worm gear 22 each shaft 20 carries a buffer 23 of felt or bristles or any appropriate substance and this buffer is of such size and so located that a person's foot upon the foot-rest 18 will pass between and be engaged by the four buffers 23 upon the several shafts 20.

Secured at appropriate points to the top of the casing 1 are hangers 24 carrying at their lower ends elastic strips 25, these strips being preferably in the form of light steel strips each longitudinally slotted as indicated at 26 where they are secured to the hangers 24 by headed studs 27 or otherwise. The hangers 24 are arranged in pairs so that the strips 25 are parallel with the shaft 12 but on the sides of the buffers 23 remote from the foot support 18. Each band 25 carries blacking containers 28 normally out of contact with the corresponding portions of the buffers 23 but capable of being moved into contact with these buffers so that blacking will be transferred from the box or container 28 to the corresponding buffer 23.

At a point about midway of the length of each strip 25 there is located one end of a lever 29 pivoted upon a post 30 rising from the base of the casing 1 and the other end of this lever is carried to a point within the path of one of the ledges 19 on the rear standards 17 of the carriage 16. The structure of these parts is such that when the foot rest is moved forward from its normal position and just as it reaches its forward position the ledges 19 will engage the respective ends of the levers 29 and move the same in a direction which will cause the movement of the elastic strips 25 toward the buffers 23 and so cause a transfer of blacking thereto which by the rotative movement of the buffers is transferred to the shoe incasing the foot upon the foot rest.

The gear wheel 5 is mounted on a shaft 31 carried by hanging bearings 32 secured to the top of the casing. Mounted on this shaft is a polishing drum 33 best shown in Fig. 4 where it will be seen that this drum is composed of two spaced heads 34 connected by a flexible web 35 forming the outer wall of the drum. These heads are normally maintained separated by a spring 36 surrounding the shaft 31 and tending to force the heads one away from the other until this movement is arrested by fixed collars 37 upon the shaft 31. The drum 33 is constrained to rotate with the shaft 31 by keyways 38 in the heads 34 engaging a spline 39 on said shaft 31.

In operative relation to the periphery of the drum 33 is a box or container 40. There is secured to the top of the casing an elastic and preferably a steel strip 41 by screws or headed studs 42 extending through elongated slots 43 in the ends of the strip 41 and this strip carries the box or container 40 designed to receive blacking.

Pivoted to the top of the casing is an angle lever 44 having one end in operative relation to about the middle portion of the strip 41 and the other end provided with an angle extension 45 in the path of the front

end of the foot rest 18 and adapted to be engaged by the latter just before it reaches its forward position.

Let it be assumed that a person wishing his shoes or other footwear blackened and polished places the foot upon the foot rest 18 and then causes the motor 2 to start in operation in any suitable manner as by the dropping of an appropriate coin into a suitable coin-controlled lock in turn controlling the motor, then the motor starts in operation and through the pinion 3 and the gear wheels 4 and 5 causes the shafts 6 and 31 to rotate in the proper direction. The shafts 6 and 31 cause rotative movement of the buffers 23 and drum 33 in appropriate directions and at the same time the shaft 12 is rotated in the direction causing the forward movement of the foot rest 18 between the buffers 23 which latter serve to clean the shoe from dust and dirt. Before the foot rest has traveled very far the toe of the shoe is brought into engagement with the drum 33 and the latter is so situated as to be engaged by the toe of the shoe in a manner to put a longitudinal strain upon the web 35 thus drawing the heads 34 toward each other and further compressing the spring 36. This will cause the web 35 to move over the toe portion of the shoe and down the sides of the same partially embracing the shoe and removing any clinging dust that may be thereon. As the foot rest approaches the forward position the forward end of the foot rest engages the angle extension 45 of the lever 44 and the cam ledges 19 engage the levers 29 causing the several receptacles 28 and 40 to be brought into contact with the respective buffers 23 and drum 33 and blacking is thereby transferred to these parts to be immediately afterward transferred to the shoe being treated. The application of blacking takes but a small portion of the time during which the shoe is under treatment and then while the foot rest is moving back toward the initial position the buffers 23 and the drum 33 act as burnishing elements for the blacking already applied.

If the two members of the screw grooves 14 be of the same pitch the foot rest 18 will be fed forward and backward at the same rate. It is, however, feasible to make these groove members of different pitch so that the foot rest will be fed forward at a comparatively quick rate and retracted at a slower rate thus subjecting the shoe to a longer period of burnishing than to the cleaning and blacking applying operations.

The top of the casing 1 may be provided with a suitable slot or opening 46 for the introduction of the foot into the machine.

While the term blacking has been used in this case in its ordinary signification it is to be understood as including any shoe pol-

ishing material whether the same be black, or white, or colored.

What is claimed is:

1. In a shoe blacking machine, a foot rest, a forward and return actuating means therefor, rotatable brushes in operative relation to the foot rest, a rotatable, yielding drum in the path of the toe end of the foot rest, a motor and connections therefrom to the brushes, drum and foot rest actuating means for driving them, blacking containers in operative relation to the brushes and drum, and members connected to the blacking containers and projecting into the path of the foot rest and adapted to be engaged and actuated by the latter to move the blacking containers into engagement with the brushes and drum.

2. In a shoe blacking machine, a foot rest, a forward and return actuating means therefor, rotatable brushes in operative relation to the foot rest, a rotatable, yielding drum in the path of the toe end of the foot rest, a motor and connections therefrom to the brushes, drum and foot rest actuating means for driving them, blacking containers in operative relation to the brushes and drum, and members connected to the blacking containers and projecting into the path of the foot rest and adapted to be actuated by the

latter at the forward limit of its travel to move the blacking containers into engagement with the brushes and drum.

3. In a shoe blacking machine, a reciprocatory foot rest, rotatable brushes in operative relation to the foot rest, blacking containers in operative relation to the brushes, members connected to the blacking containers and projecting into the path of the foot rest and actuated thereby to move the blacking containers into engagement with the brushes.

4. In a shoe blacking machine, a reciprocatory foot rest, rotatable polishing means in operative relation to the foot rest, blacking containers in operative relation to the said rotatable polishing means, and members connected to the blacking containers and projecting into the path of the foot rest at the forward limit of its travel, and actuated by said foot rest to move the blacking containers into engagement with the rotatable polishing means.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

IRVEN J. WEIGLE.

Witnesses:

J. W. DWYER,
G. M. DWYER.