April 3, 1934. J. T. UDEN 1,953,376

SHOE DRESSING MACHINE

Filed June 10, 1933

Fig. 1

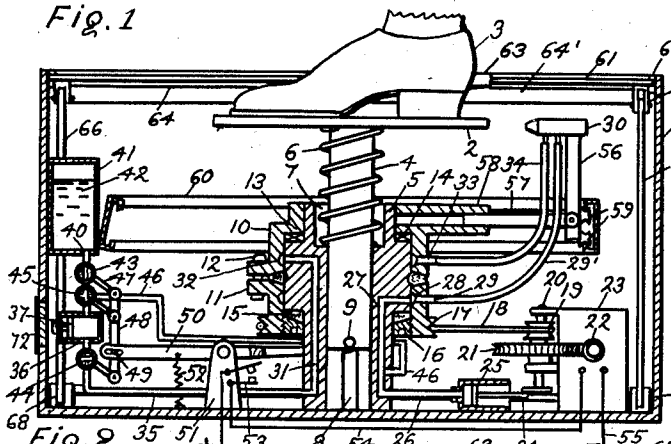


Fig. 2

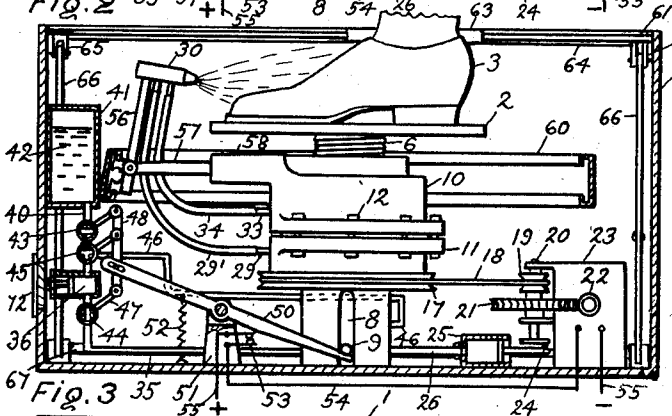


Fig. 3

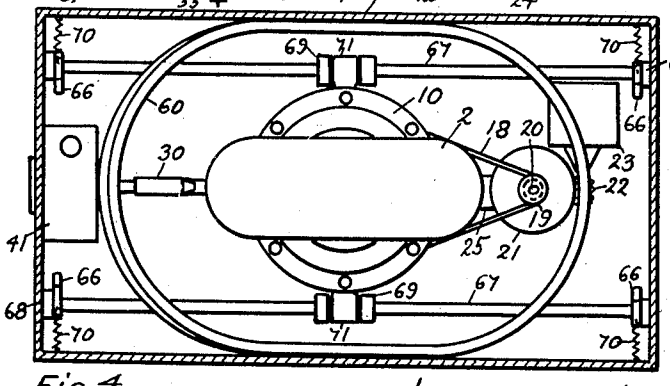


Fig. 4

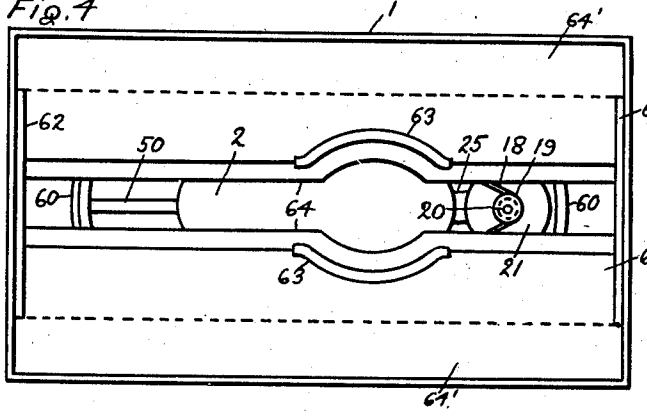


Fig. 5

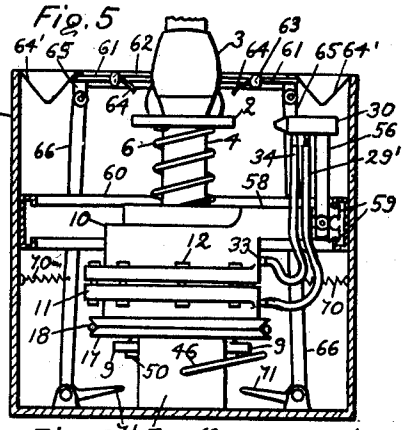


Fig. 6

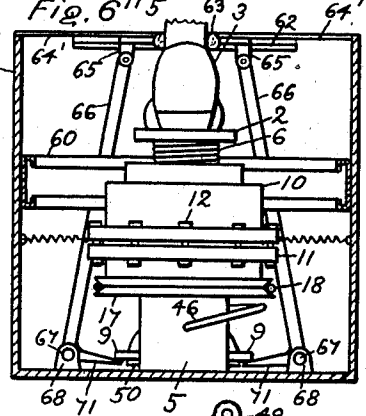


Fig. 7

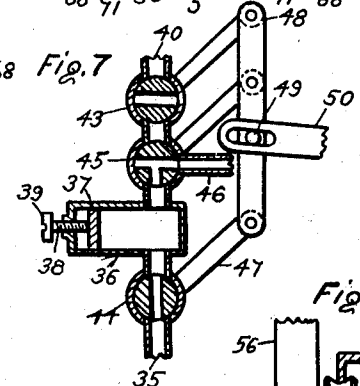
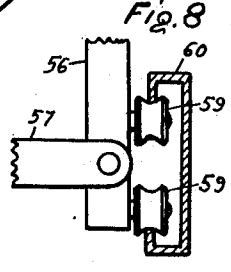


Fig. 8



JACOB T. UDEN
INVENTOR

BY John P. Nikonow
ATTORNEY

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SHOE DRESSING MACHINE

Jacob T. Uden, New York, N. Y.

Application June 10, 1933, Serial No. 675,188

3 Claims. (Cl. 15—31)

My invention relates to shoe dressing machines and has particular reference to machines for applying dressing fluids to shoes preparatory to their polishing or shining.

The object of my invention is to provide a machine of an automatic type, preferably operated by an electric motor, for applying shoe polish or dressing fluid to shoes by spraying method. This machine is especially adapted for use with my shoe shining machine as described in my patent application Serial No. 647,841, filed Dec. 19, 1932.

Another object of my invention is to provide a machine for spraying the shoe dressing fluid on shoes while the latter are worn on the user's feet, protecting at the same time the user's feet above the shoes from the sprayed composition, using for this purpose protective shields, automatically placed in the operative position when the user places his foot with the shoe into the machine.

Still another object of my invention is to provide means for rotating the spraying device around the shoe thereby insuring the uniform spraying of the shoe from all sides. I also provide guiding means for moving the nozzle in an oval-shaped path around the shoe, and I provide means for feeding a predetermined amount of the dressing fluid to the nozzle by compressed air. I also provide means for controlling the rotation of the nozzle and its spraying action by the act of placing the user's foot into the operative position in the machine.

My invention is more fully described in the accompanying specification and drawing in which—

Fig. 1 is a sectional elevation of my machine with the platform in the raised (inoperative) position, Fig. 2 is the same with the platform lowered into its operative position, Fig. 3 is a sectional plan view, Fig. 4 is a top plan view, Fig. 5 is a transverse section with the platform in the raised position, Fig. 6 is the same with the platform lowered, Fig. 7 is an enlarged detail view of the valves, and Fig. 8 is an enlarged detail view of the guiding device for the nozzle.

My machine consists of a housing 1 with a platform 2 for a shoe 3. The platform is mounted on a plunger 4 slidably fitted in a tubular support or stand 5 mounted on the bottom board of the housing. A spring 6 fitted in a recess 7 in the stand 5 tends to keep the platform in a raised position. Slots 8 are provided in the lower portion of the stand for pins or lugs 9 attached to the lower end of the plunger. The length of the slots determines the amount of travel of the plunger. The central portion of the stand 5 is made larger and it supports a sleeve consisting of two halves 10 and 11 held together by bolts or studs 12. The sleeve 10 has a shoulder 13 fitting over the upper end of the tube 5. A graphitized packing 14 is placed between the sleeve and the enlarged portion of the stand. A similar packing 15 is placed against the lower shoulder of the enlarged portion and is clamped by a gland nut 16 threaded in the lower end of the sleeve 11. A pulley 17 is mounted on the lower end of the sleeve 11 for a belt 18 which also engages a small pulley 19 on a transmission shaft 20 with a worm gear 21 in mesh with a worm 22 on the end of the shaft of an electric motor 23.

A crank 24 is mounted on the end of the shaft 20 engaging the piston rod of an air compressor 25. A pipe 26 extends from the compressor to a channel or duct 27 in the body of the stand 5. The duct 27 extends radially into a circular groove 28 inside of the sleeve 11. A nipple 29 is fitted in the sleeve 11 opening into the groove 28. A flexible pipe 29' extends from the nipple 29 to a spraying nozzle 30. A similar duct 31 in the stand 5 extends into the communication with a circular groove 32. A nipple 33 fitted in the sleeve 10 is connected with a flexible pipe 34 extending to the nozzle 30. The other end of the duct 31 is in communication with a pipe 35 connected with the lower portion of a metering cylinder or well 36. A piston 37 is fitted in the cylinder 36 mounted on a threaded rod 38 passing through the threaded cover and provided with a handle 39. By turning the handle the piston may be moved in the cylinder thereby changing its volumetric capacity. A pipe 40 connects the cylinder with a storage well 41 for a dressing fluid or solution 42. Valves 43 and 44 are fitted in the pipes 35 and 40 respectively. A two-way valve 45 is also fitted in the pipe 35 below the valve 43 and is connected with an air pipe 46 extending to the duct 27. The valves 43, 44 and 45 are provided with handles 47 pivotally connected with a bar 48. A pin 49 on this bar engages a slot in the end of an arm 50 rotatively mounted in a bracket 51. The other end of the arm 50 is made in the shape of a fork engaging the pins 9. A spring 52 tends to keep the forked end in engagement with these pins. An electric switch 53 is placed under the fork and closes the circuit for the motor 23 when the fork is depressed, through a connecting lead 54 from the power leads 55.

The nozzle 30 is supported on a bar 56 pivotally connected with a rectangular rod 57 slidably fit-

ted in a tubular extension 58 on the sleeve 10. Rollers 59 are mounted on the bar 56 and engage the inner edge of a guiding endless rail 60 supported on the walls of the housing. The rail has a substantially oval shape so as to approximately follow the outline of the platform 2. The front portion of the rail is slightly inclined in order to incline the nozzle 30 when it moves in front of the toe portion of the shoe. The rectangular shape of the rod 57 is necessary in order to prevent the bar 56 with the nozzle from tilting sideways.

Cover plates 61 slide with their ends in guiding rails 62 attached to the end walls of the housing. The inner edges of these plates are recessed in order to fit the foot above the shoe and are lined with a soft padding 63, made of sponge rubber, felt or similar compressible material. Flexible rubber sealing strips 64 are attached to the inner edges of the plates 61 in order to provide additional protection for the foot above the shoe from the sprayed fluid. Flexible cloth 64' extends from the outer edges of the plates 61 to the upper edges of the side walls of the housing. The plates 61 are provided with lugs 65 pivotally connected with the ends of arms 66, the lower ends of which are attached to shafts 67 journaled in brackets 68 and 69. Springs 70 tend to keep the arms 66 moved apart thereby keeping the plates 61 apart and providing an opening for insertion of the foot with the shoe into the machine on the platform 2. Levers 71 are attached to the shafts 67 and are adapted to be engaged by the pin 9.

Ports with covers 72 may be provided in the end wall of the housing where it is necessary to have an access to the screw 39 for regulating the displacement of the cylinder 36.

The operation of my machine is as follows:

The motor remains disconnected from the line as long as the platform 2 is in the raised position. The plates 61 are drawn apart permitting the foot to be inserted between the flexible strips 64. As soon as the foot is placed on the platform, the latter drops down, and the pins 9, pressing on the lever arms 71, draw the arms 66 together thereby closing the plates 61 around the ankle above the shoe. The forked end of the arm 50 also becomes depressed, the other end of the arm turning the valves 43, 44 and 45 into operative positions shown in Fig. 2. As it may be seen from the Fig. 1, the valves 43 and 45 are open during the time when the machine is not in operation, permitting the dressing fluid to flow from the storage tank 41 into the metering well 36. The fluid does not flow out of this well as the valve 44 remains closed. The valve 43 also closes the air pipe 46. As soon as the valves are turned into operative positions, Figs. 2 and 7, the valve 43 disconnects the tank 41 from the well 36, and the valve 45 connects the well with the air pipe 46. The valve 44 being open, the dressing fluid can flow into the nozzle 30 through the pipe 35, duct 31 and flexible hose 29'. The switch 53 being now closed, the motor 23 will operate the air compressor 25 delivering the compressed air to the valve 45 which is now open, through the pipes 26 and 46 and duct 27. The compressed air will gradually force the fluid from the well 36 into the nozzle 30 until all the fluid from the well is used up.

The motor at the same time will turn the sleeves 10 and 11 on the post 4 thereby moving the nozzle 30 around the platform 2 with the shoe 3. The bar 56 supporting the nozzle is guided in its movement by the rollers 59 following the curvature of the rail 60. The rod 57 will slide in the tubular extension 58 in accordance with the position of the rollers in the rail. The nozzle will complete several revolutions around the shoe spraying the latter from all sides with the dressing fluid. The spraying will continue until the well 36 is emptied, and then only air will be blown through the nozzle for drying the dressing composition on the shoe. When the latter is sufficiently dry for the polishing operation on the polishing machine, the foot is removed from the machine. The platform is raised by the action of the spring 6. The lever 50 will be turned by the spring 52 placing the valves into inoperative position and disconnecting the switch 53 thereby stopping the motor.

Important advantages of my machine are that it automatically sprays the dressing fluid on the shoe evenly on all sides, using a predetermined amount of the fluid, it dries the shoe after spraying, and protects the foot above the shoe from the fluid during the spraying operation.

I claim as my invention:

1. In a shoe dressing machine, the combination with a housing, of a platform for a shoe in said housing, a sleeve rotatively mounted on the base of said platform, a curved rail around said platform, a spraying nozzle supported on said rail and operatively connected with said sleeve, means to feed a spraying liquid and compressed air to said nozzle through said sleeve, and means to rotate said sleeve thereby moving said nozzle on said rail around said platform for spraying said shoe.

2. In a shoe dressing machine, the combination with a housing, of a platform for a shoe in said housing, a curved rail around said platform, a spraying nozzle movably supported on said rail, means to feed a spraying liquid and compressed air to said nozzle, and means to move said nozzle on said rail around said platform for spraying said shoe.

3. In a shoe dressing machine, the combination with a housing, of a platform for a shoe in said housing, a curved rail around said platform, a spraying nozzle movably supported on said rail, means to supply a spraying liquid and compresed air to said nozzle, and means to move said nozzzle on said rail around said platform for spraying said shoe, said rail being raised and inclined in its front portion being thereby adapted to raise and to incline said nozzle for spraying the toe portion of said shoe.

JACOB T. UDEN.