Aug. 17, 1926. 1,596,676

P. MANGER

SHOE POLISHING MACHINE

Filed Nov. 21, 1921 4 Sheets-Sheet 1

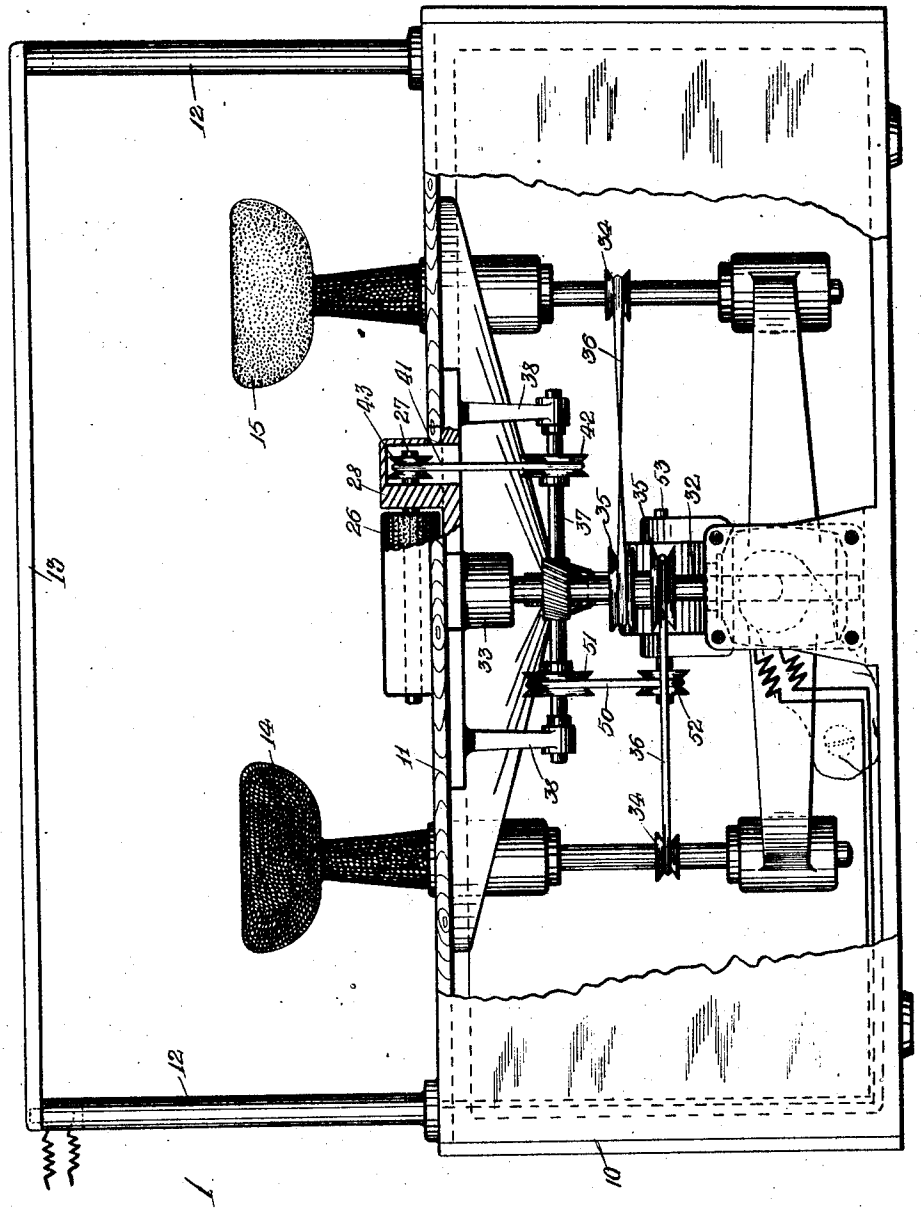


Fig. 1.

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SHOE POLISHING MACHINE

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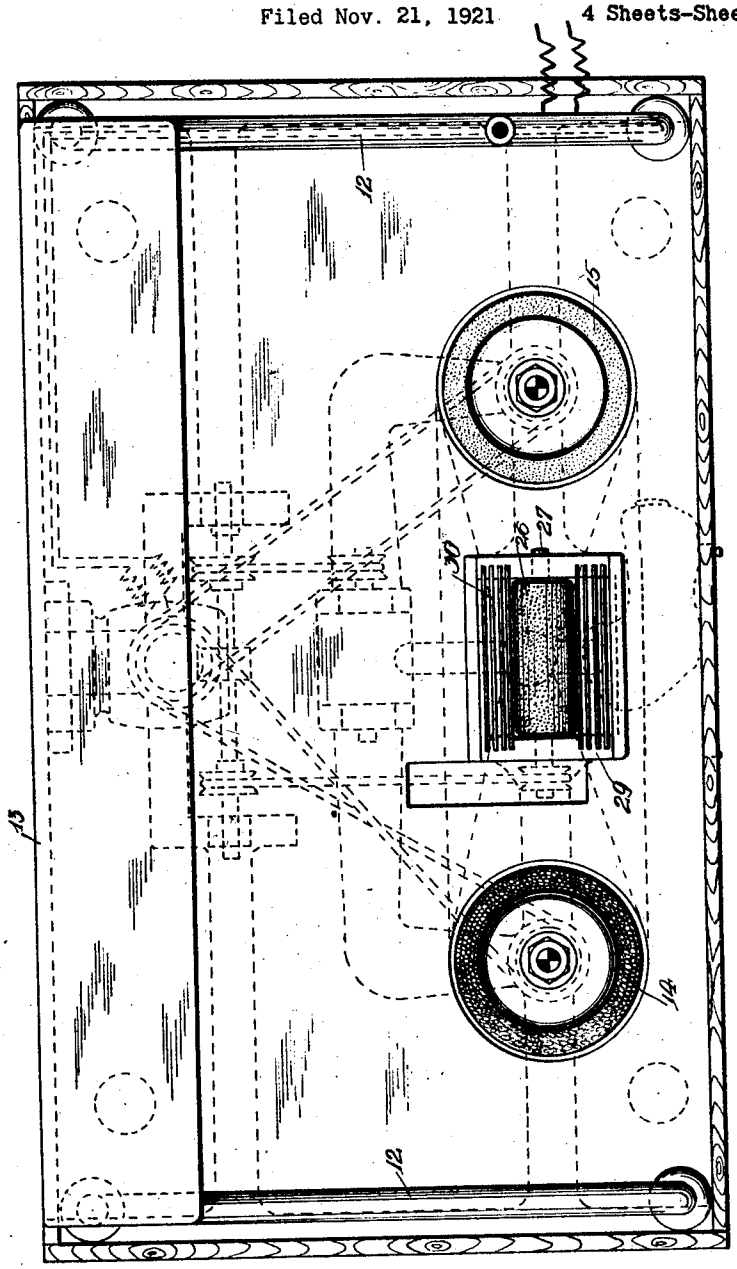


Fig 2.

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SHOE POLISHING MACHINE

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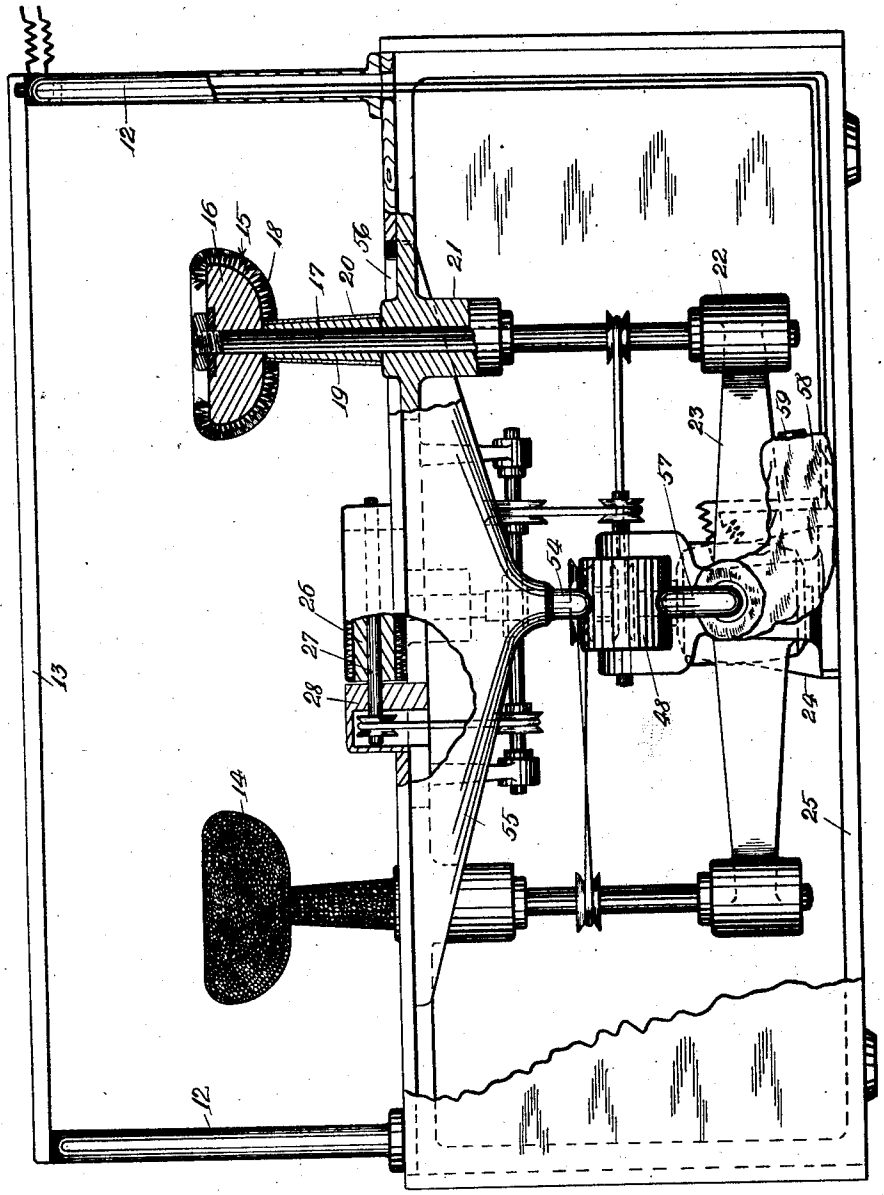


Fig. 3.

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SHOE POLISHING MACHINE

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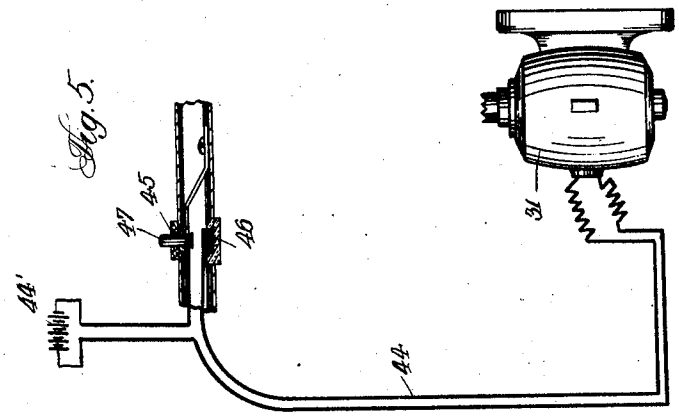


Fig. 5.

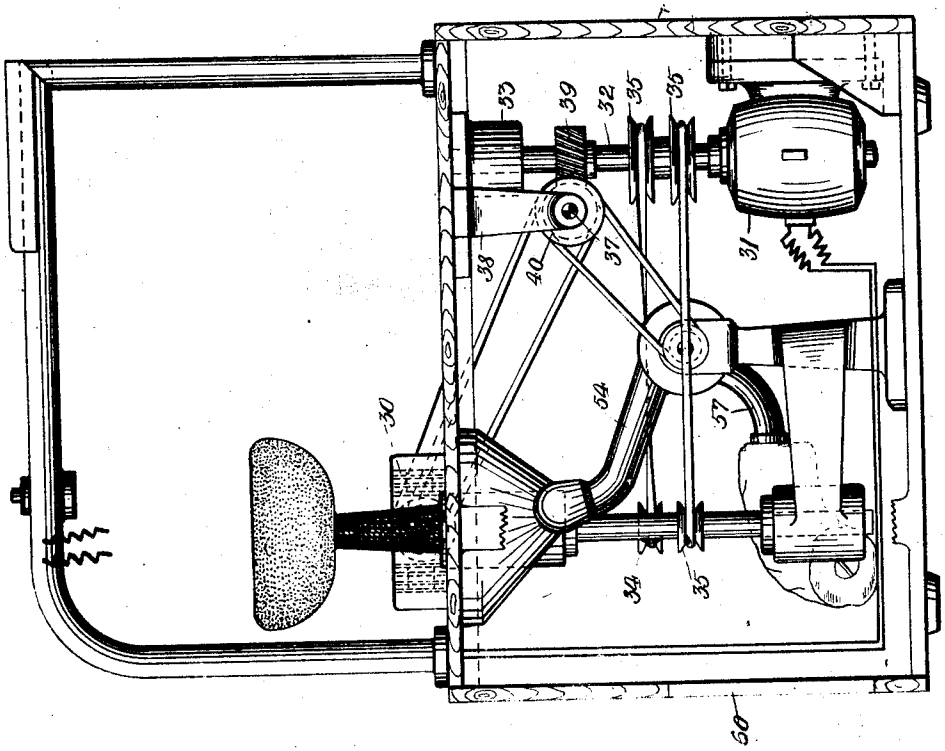


Fig 4

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Patented Aug. 17, 1926. 1,596,676

UNITED STATES PATENT OFFICE.

PHILIP MANGER, OF BROOKLYN, NEW YORK.

SHOE-POLISHING MACHINE.

Application filed November 21, 1921. Serial No. 516,716.

The present invention relates to improvements in shoe-polishing machines, and more particularly to that type wherein a plurality of brushes are actuated by a source of power, preferably an electric motor.

The main object of the invention is to produce a device of this type, which is portable so that it may be shifted around conveniently to places where the operations are to be performed.

Another object of the invention is to provide a shoe-polishing machine, wherein a vacuum device is combined with the brushes, whereby the dust, surplus polish and other foreign matter removed from the shoes are delivered into a receptacle, preferably a bag, located within the frame of the machine.

A further object of the invention is to produce a rotary brush which is so shaped, that all parts of a shoe or boot are capable of being brought into contact therewith, in its rotation.

A further object of the invention is to produce a polishing machine of the character mentioned which is simple in construction, efficient in operation and durable in use.

With these and other objects in view, which will more fully appear as the nature of the invention is better understood, the same consists in the combination, arrangement and construction of parts hereinafter described, pointed out in the appended claims and illustrated in the accompanying drawings, it being understood that many changes may be made in the size and proportion of the several parts and details of construction within the scope of the appended claims, without departing from the spirit or sacrificing any of the advantages of the invention.

One of the many possible embodiments of the invention is illustrated in the accompanying drawings, in which:

Fig. 1 is a front elevation of a shoe-polishing machine constructed in accordance with the present invention, part of the enclosing casing of the actuating means thereof being broken away in order to show the interior construction.

Fig. 2 is a top plan view of the same.

Fig. 3 is a rear elevation thereof, partly in section.

Fig. 4 is a side elevation of the machine with one of the casing ends removed; and

Fig. 5 is a diagram of the motor circuit.

The brush actuating mechanism is enclosed within a casing 10, having a horizontal top 11, forming the foot support. From this top rise two substantially bail-shaped standards 12, extending transversely of the casing and being connected by a longitudinal rail 13, by which the machine may be taken hold of when it is desired to move the same from place to place.

Above the foot support are disposed a cleaning brush 14 and a polishing brush 15, each including a substantially semi-spherical brush back 16, fixed to a vertical shaft 17. The brush backs 16 are provided on their semi-spherical faces with bristles 18, the flat faces of the backs being disposed horizontally and forming the tops of the brushes. Each of these brushes is located at a substantial distance from the exposed face of the foot-support 11, the shafts 17 extending through sleeves 19, which are secured to the brush backs and covered by felt 20 or other soft material, so as to prevent injury to the shoes when coming into contact with the rotary sleeves and to polish the edges of the shoe soles.

The shafts 17 are journaled in bearings 21 and 22, the former projecting downwards from the foot-support 11, and the bearings 22 being carried by brackets 23 upon a standard 24. This standard rises from the bottom 25 of the casing 10.

A cylindrical brush 26 is disposed above the foot-support 11, its horizontally extending shaft 27 being journaled in a bearing 28. The brush 26 is surrounded by a platform 29, in which are provided slots 30 for a purpose hereinafter to be described. The exposed face of this platform is roughened, so as to remove dirt or other matter adhering to the shoe soles when the same are rubbed against the said platform.

The brushes are actuated by an electric motor 31, suitably bolted to one of the sides of the casing 10, and being coupled to a vertically extending main driving shaft 32, which is journaled in a bearing 33, depending from the inner face of the foot-support 11. The connection between the driving shaft and the brush shafts 17 may be made in any suitable manner, for instance to each of said brush shafts may be keyed, or otherwise attached, a pulley 34, in alignment with a pulley 35 on the driving shaft, over these pulleys run belts 36. The cylindrical brush 26 is driven from a counter-shaft 37, jour-

naled in hangers 38. This counter-shaft is driven from the main shaft, intermeshing oblique-toothed gears 39 and 40 being fixedly attached to the main driving shaft and the counter-shaft, respectively. The driving connection between the counter-shaft and the brush shaft 27 is made by a belt 41, running over pulleys 42 and 43 on said counter-shaft and brush shaft, respectively.

In the electric circuit 44 of the motor 31 is placed a battery 44′ and a switch 45. This switch may be of any suitable construction, for instance a push-button switch, having a fixed contact point 46 within one of the tubular standards 12, and a spring-pressed movable contact point 47, extending through the said standard.

The dust, surplus polish and other foreign matter removed from the shoes or brushes are delivered into a receptacle by a vacuum device, including an air-pump 48 of any suitable construction, carried by the standard 24. This pump is driven from the counter-shaft 37, for instance, by a belt 50, running over pulleys 51 and 52 on the said counter-shaft and pump shaft 53, respectively. The suction pipe 54 of the pump leads to an elongated conduit 55. This nozzle bears against the underface of the foot-support 11 and is in alignment with openings 56 in said support and also with the openings 30 above referred to. The openings 56 are provided around the brushes 14 and 15. The delivery pipe 57 of the pump leads to a receptacle 58, for instance, a bag, having an opening closed by a plug 59. In alignment with this bag, there is formed in one of the sides of the casing 10 a hand-hole 60, through which access may be had to the said bag when the dust, etc., is to be removed therefrom, from time to time.

The operation of this device is as follows: By closing the motor circuit, rotation is imparted to the three brushes and the suction pump actuated. The shoe to be cleaned and polished is first placed upon the platform 29 and drawn back and forth, whereby dirt adhering to the shoe sole is removed therefrom, said dirt being sucked by the vacuum system through the openings 30 and the pump 48 into the receptacle 58. After this operation has been performed, the shoe is brought into contact with the cleaning brush 14, it being turned and tilted repeatedly so as to clean the entire surface thereof, the dust removed finding its way through the openings 56 into the receptacle 58. Shoe polish is then applied to the shoe in the ordinary manner, after which for the purpose of shining, it is again subjected to the action of the brush 14 and then for the purpose of polishing the shoe is subjected to the brush 15, the dust or other material drawn from the shoe or brush being drawn through the openings 56 into the bag 58.

The semi-spherical brushes are particularly adapted for shoe cleaning purposes, as every portion of the shoe is subjected to the action of the brush by simply moving the shoe in contact with the brush up and down, back and forth and, if necessary, inclining the same in relation to the brush.

It is obvious that, while herein specific gearings have been described between the motor shaft, brush shafts and pump shaft, others may just as well be used without departing from the invention, which lies mainly in the provision of a plurality of motor-driven brushes, in combination with a vacuum system, for the purpose set forth.

The device is exceedingly simple and safe in operation, all elements, with the exception of the brushes, being disposed within an enclosing casing.

Having thus described my invention, what I claim is:—

1. In a shoe cleaning and polishing machine, in combination, a supporting structure having an opening in the top of the same, a cleaning brush rotatably supported by said supporting structure over said opening and surrounded by a grid structure and partly extending above the grid structure, a polishing brush rotatably supported by said structure at a point remote from said cleaning brush, means for rotating said brushes, and vacuum means including a suction pipe within said housing which operates in conjunction with said brushes, said suction pipe being in communication with said openings so that particles freed by said brushes when operating against a shoe will be carried away through said openings.

2. In a shoe cleaning and polishing machine, in combination, a supporting structure having an opening in the top of the same, a cleaning brush rotatably supported by said supporting structure over said opening and surrounded by a grid structure and partly extending above the grid structure, polishing brushes rotatably supported by said supporting structure in spaced relationship above said cleaning brush, said structure having an opening therein beneath each of said polishing brushes, means for rotating all of the brushes, and vacuum means including a suction conduit within said housing which operates in conjunction with said brushes, said suction conduit being in communication with said openings so that particles freed by said brushes when operating against a shoe will be carried away through said openings to be confined.

In testimony whereof I have signed my name to this specification.

PHILIP MANGER.