Feb. 2, 1926. 1,571,773

H. H. FORCE

PORTABLE SHOE POLISHING MACHINE

Filed Jan. 9, 1924 2 Sheets-Sheet 1

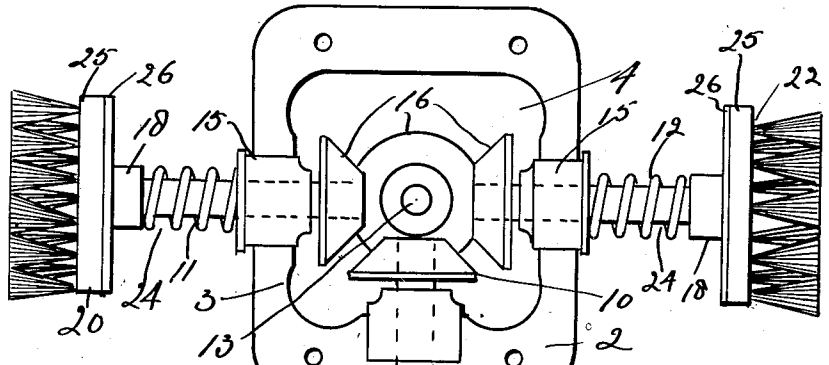


Fig. 1.

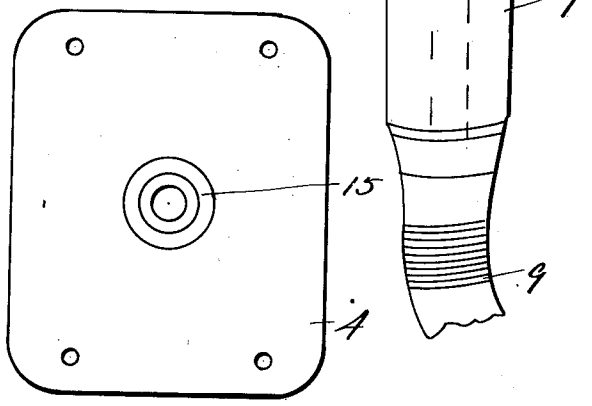


Fig. 2

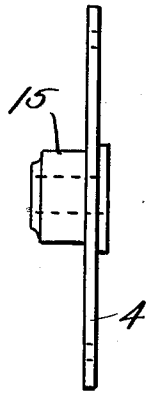


Fig. 3

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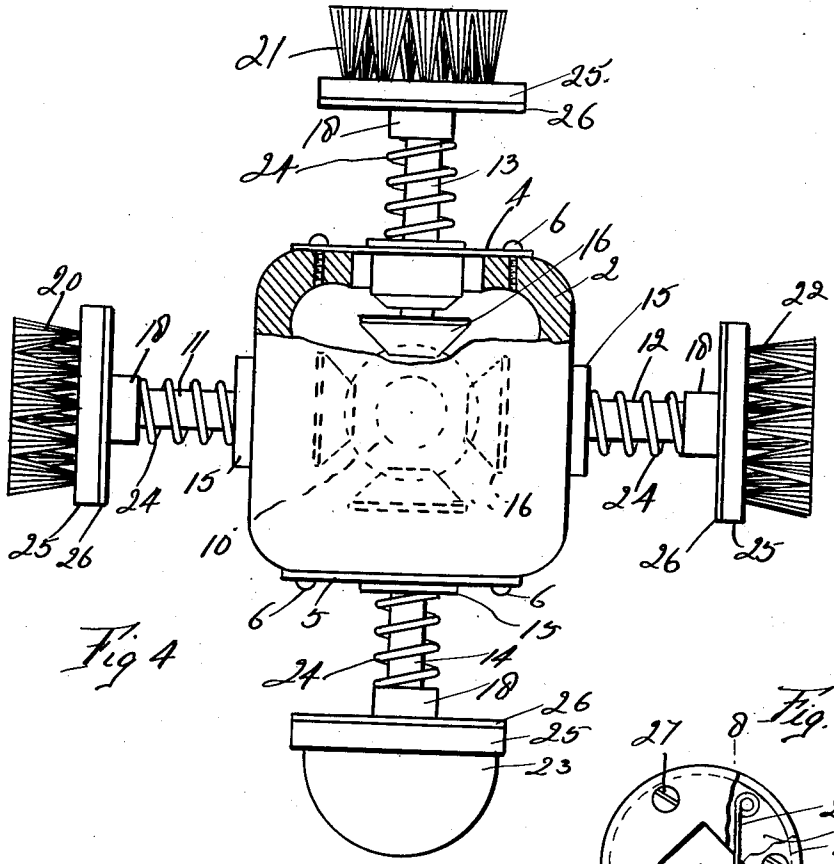


Fig 4

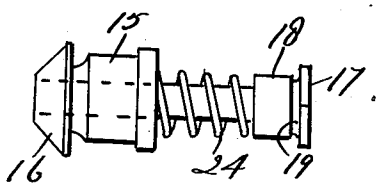


Fig 5

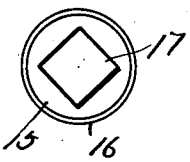


Fig 6

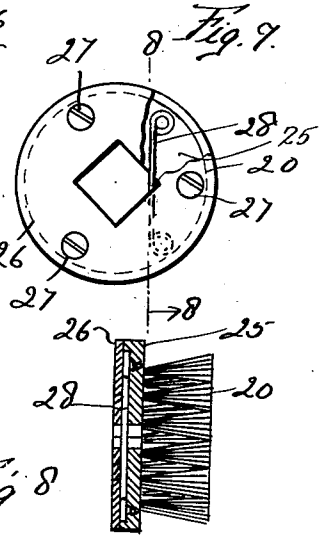


Fig. 7

Fig 8

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Patented Feb. 2, 1926. 1,571,773

UNITED STATES PATENT OFFICE.

HAROLD H. FORCE, OF PHILADELPHIA, PENNSYLVANIA.

PORTABLE SHOE-POLISHING MACHINE.

Application filed January 9, 1924. Serial No. 685,094.

To all whom it may concern:

Be it known that I, HAROLD H. FORCE, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented new and useful Improvements in a Portable Shoe-Polishing Machine, of which the following is a specification.

My invention relates to new and useful improvements in a portable shoe polishing machine, and has for its primary object to provide an exceedingly simple and effective device of this character that may be driven by an electric motor and manipulated by hand to clean the shoes, apply a polish or blacking, to shine the shoes and polish the same.

Another object of this invention is to provide in a shoe polishing machine, a plurality of devices, each operable independently of the others when pressed against the object to be worked upon, said devices usually comprising a cleaning brush, a dauber or brush, a shining brush and a polisher or buffer.

A further object of my invention is to construct a portable shoe polishing machine comprising a frame provided with a handle, a power shaft journalled therein and having a friction gear thereon, a plurality of spring pressed slidable and revoluble spindles each having a friction gear thereon for coaction with the first named friction gear and a detergent device on each of the spindles adapted to be revolved upon engagement of different last named friction gears with the one on the power shaft.

With these ends in view, this invention consists in the details of construction and combination of elements hereinafter set forth and then specifically designated by the claims.

In order that those skilled in the art to which this invention appertains, may understand how to make and use the same, I will describe its construction in detail, referring by numerals to the accompanying drawings forming a part of this application, in which:—

Fig. 1 is a side elevation of a portable shoe polishing machine embodying my invention, the near side plate being removed.

Fig. 2 is a face view of one of the plates.

Fig. 3 is an edge view thereof.

Fig. 4 is a sectional outer end view of the machine.

Fig. 5 is a side elevation of one of the spindles and its component parts.

Fig. 6 is an end view thereof.

Fig. 7 is a back view of one of the detergent devices with a portion of the plate broken away.

Fig. 8 is a section at the line 8—8 of Fig. 7.

In carrying out my invention as here embodied, 2 represents a suitable frame including a housing 3 open at two opposite sides but normally closed by plates 4 and 5 disposed across the open sides and held in place by suitable fastening devices such as screws 6. This frame carries a suitable handle 7 whereby the machine may be readily manipulated and passed over the article to be cleaned and polished.

In the frame and handle is journalled a suitable power shaft 8 the outer end of which is connected to the flexible shaft 9 which in turn is connected with a suitable source of power and motion such as a small electric motor while on the inner end of the power shaft is fixed a friction gear 10 preferably of the beveled type.

In two opposite walls of the frame are slidably and revolubly mounted the oppositely projecting spindles 11 and 12 while in the plates 4 and 5 are also slidably and revolubly mounted the opposite projecting spindles 13 and 14. It is to be understood that where I refer to the spindles being mounted in the walls of the frame and plates I do not mean to limit myself to mounting them directly in these parts as the journal boxes 15 may be formed integral with or separate from these other elements.

On the inner end of each spindle is fixed a friction gear 16 for coaction with the friction gear 10 on the power shaft while on the outer end of each spindle is a polygonal head 17 carried by the neck 18 preferably of circular cross section and having a groove 19 therein. On the outer end of the spindle 11 is a cleaning brush 20 and on the outer end of the spindle 13 is a dauber or another brush 21 while on the spindle 12 is a shining brusher 22, whereas on the spindle 14 is mounted a polisher or buffer 23 and all of these detergent devices are held outward or in positions illustrated herein by means of suitable springs 24 coiled about the different spindles and interposed between the necks 18 thereof and suitable portions of the machine.

The different detergent devices include a back 25 with a plate 26 disposed there across and held in place by fastening devices such as screws 27. The back and plate both have registering polygonal holes, as plainly shown in Fig. 7, for the reception of the polygonal head 17 of a spindle and between the plate and back is mounted a suitable spring 28 for registration with the groove 19 in a spindle to hold the detergent device on the spindle temporarily.

In practice the spring 28 may be sprung a sufficient distance to withdraw it from the groove 19 and thus permit the device to which it is connected to be removed from its spindle for replacement when repairs are necessary or when different colored shoes are to be cleaned and polished.

The operation of the device is as follows, the operator grips the polishing machine by means of the handle 7 and moves the same about with the cleaning brush 20 in contact with a shoe or other object and during this operation sufficient pressure is brought to bear upon the machine to cause the spindle 11 to slide longitudinally and compress its associated spring. This action will move the friction gear 16 on the spindle 11 into engagement with the friction gear 10 on the power shaft 8 so that motion from said power shaft, which is being revolved by an electric motor or its equivalent, will be transmitted to the cleaning brush so that any dirt or foreign matter on the shoe will be removed.

Next the machine is rotated to bring the dauber 21 into a suitable position for engaging the shoe so that when pressure is again brought to bear upon the machine to slide the spindle 13 inward against the action of its associated spring any blackening or polish upon said dauber will be applied to the shoe.

After this has been done the machine is again rotated until the brush 22 is moved into a position for contact with the shoe and this brush is caused to revolve in the same manner as related with reference to the other devices. This operation will cause the polish to be dried and the shoes shined prior to polishing.

Upon completion of the last mentioned operation the machine is again rotated until the same is positioned to bring the polisher or buffer 23 into contact with the shoe which is also actuated in the same manner as the other aforementioned devices.

After each operation the pressure on the detergent device being used is relieved by moving the machine away from the shoe and which will permit the different springs to act and disengage the spindle gears from the power shaft gear and therefore during operation only one detergent device is revolving at a time.

From the foregoing description it will be obvious that I have produced an exceedingly simple and effective portable shoe polishing machine which may be so constructed as to be light in weight although strong and durable and relatively inexpensive in the cost of manufacture.

Of course I do not wish to be limited to the exact details of construction as herein shown as these may be varied within the limits of the appended claims without departing from the spirit of my invention.

Having thus fully described my invention, what I claim as new and useful is:—

1. A portable shoe polishing machine comprising a frame open at two opposite sides, a handle for said frame, plates normally closing the open sides of the frame, a power shaft journalled in the frame and handle, a friction gear on the inner end of said power shaft and housed within the frame, a pair of spindles slidably and revolubly mounted in two opposite sides of the frame in endwise alignment, another pair of spindles slidably and revolubly mounted in the plates, in endwise alignment, friction gears fixed to the inner ends of said spindles for engagement with the power shaft gear when the spindles are forced inward, springs for normally forcing said spindles outward, a detergent device for each of said spindles, and means for removably mounting said detergent devices on the outer ends of said spindles.

2. In a shoe polishing machine, the combination of a spindle, a polygonal head on the outer end thereof, a neck provided with a groove adjacent the head, a detergent device including a back having a polygonal recess to fit said head, a plate mounted on said back and having a polygonal opening registering with the recess in the back, and a spring element between the back and plate for engagement with the slot when the detergent device is placed upon the spindle head.

In testimony whereof, I have hereunto affixed my signature.

HAROLD H. FORCE.