April 28, 1925.

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P. M. RAYSOR

SHOE POLISHING MACHINE

Filed Dec. 28, 1922

3 Sheets-Sheet 1

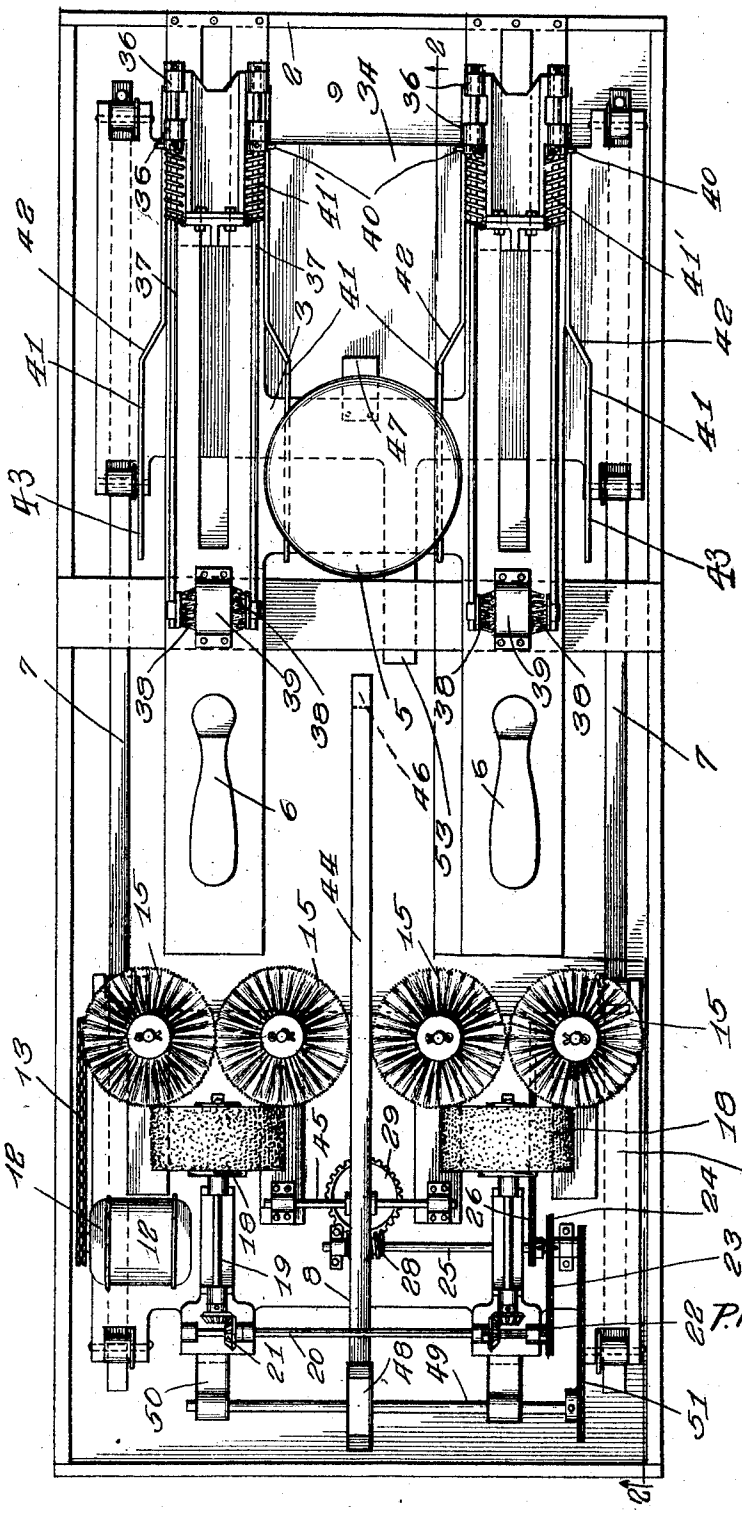


Fig. 1.

Inventor
P. M. Raysor

Attorney

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Filed Dec. 28, 1922 3 Sheets-Sheet 2

Fig. 2.

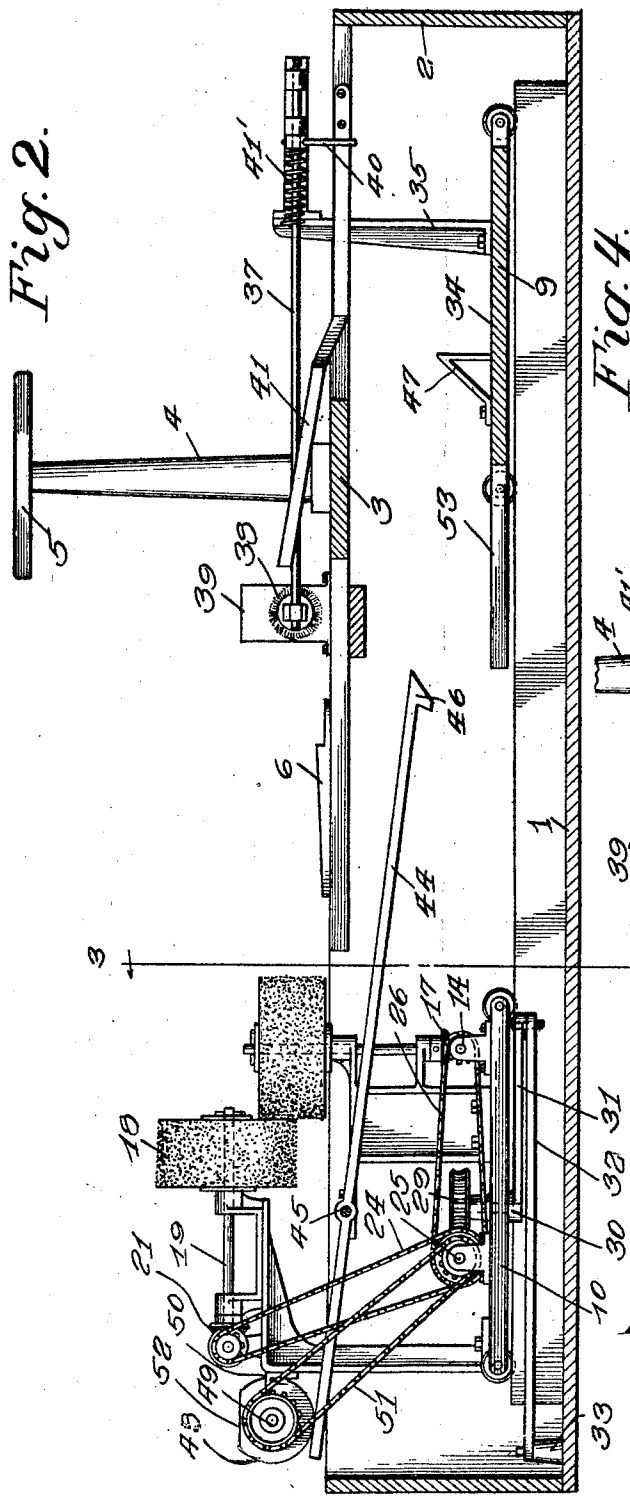
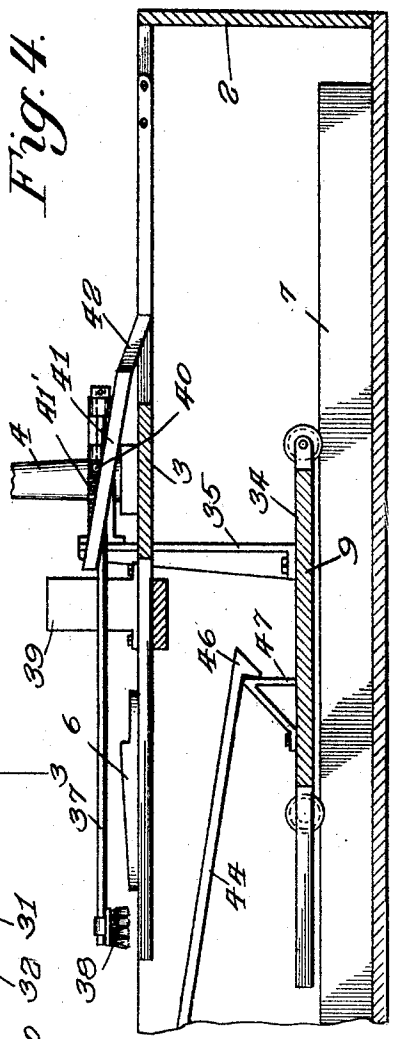


Fig. 4.



Inventor
P.M. Raysor

Attorney

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P. M. RAYSOR

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Filed Dec. 28, 1922 3 Sheets-Sheet 3

Fig. 3.

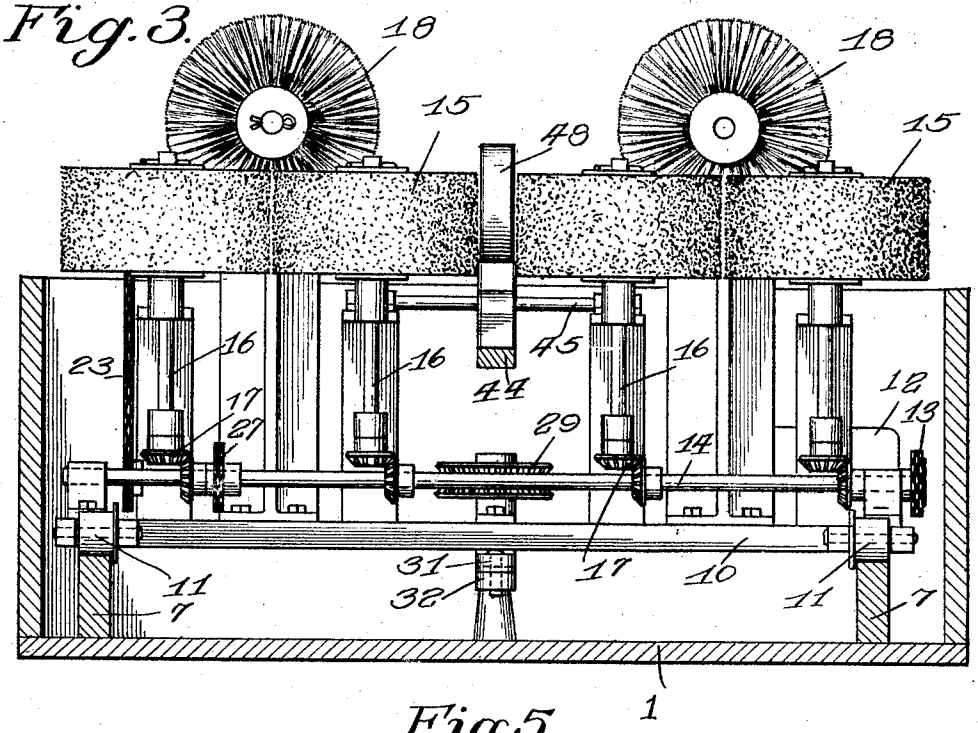
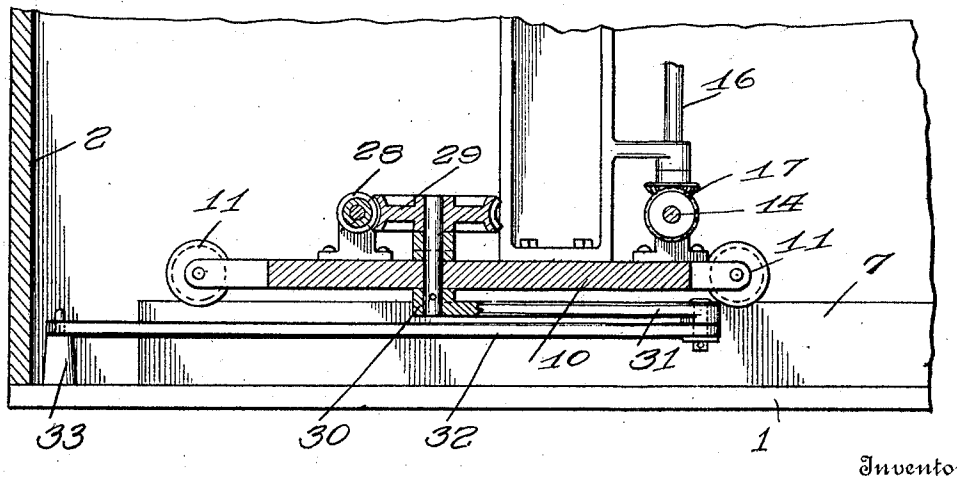


Fig. 5



Inventor

P. M. Raysor

By

Attorney

Patented Apr. 28, 1925. 1,535,738

UNITED STATES PATENT OFFICE.

PAUL M. RAYSOR, OF BRYAN, TEXAS.

SHOE-POLISHING MACHINE.

Application filed December 28, 1922. Serial No. 609,461.

To all whom it may concern:

Be it known that I, PAUL M. RAYSOR, a citizen of the United States of America, residing at Bryan, in the county of Brazos and State of Texas, have invented certain new and useful Improvements in Shoe-Polishing Machines, of which the following is a specification.

This invention relates to an improvement in shoe polishing machines, in the use of which a person may have his shoes cleaned and polished through automatic mechanism set in operation at will.

The invention is directed to a shoe polishing machine, in which there is a polishing carriage having rapidly rotating brushes adapted in the movement of the carriage to effectively cooperate with the shoes of the person on the stand for cleaning and polishing purposes, the construction also including a second carriage which is automatically operable by and at predetermined times in relation to the movement of the polishing carriage, which second carriage is provided with brushes for applying paste or like material to the shoes.

The second carriage carrying the material applying brushes is operated after initial shining by the brushes of the polishing carriage so that in the shoe shining operation, the paste or material is applied twice and the shoes are initially polished following the first application and finally polished following the second application. The movement of the second carriage is automatically controlled by and in the movement of the polishing carriage, so that the shoes are first cleaned or brushed and the material applied, then shined, and the material again applied and the polishing operation then finally completed by successive movements of the polishing carriage.

The invention is illustrated in the accompanying drawings, in which:

Fig. 1 is a plan view of the improved shoe polishing machine.

Fig. 2 is a section on line 2—2 of Fig. 1.

Fig. 3 is a section on line 3—3 of Fig. 2.

Fig. 4 is a broken sectional view illustrating the connection between the polishing carriage and second carriage to cause operative movement of the latter.

Fig. 5 is a sectional view illustrating particularly the means for reciprocating the polishing carriage.

The construction as illustrated includes a stand 1, having an appropriate base of hollow box-like formation as 2, on which there is mounted a platform 3. The platform is provided with a standard 4 having a seat 5 at the upper end for the user, and is also provided in advance of the standard with spaced foot rests or blocks 6, designed to receive and support the shoes of the user during the polishing operation. Mounted in the base 2 adjacent each side thereof are tracks 7, and the polishing carriage 8 and the second carriage, hereinafter termed the dauber carriage 9, are adapted for travel on these tracks, these carriages being normally located at opposite ends of the base as indicated in Fig. 2 of the drawings. The polishing carriage includes a base frame 10, having rollers 11, whereby the carriage is supported for reciprocatory movement on the tracks 7. A motor 12 is mounted on the base 10 and adapted through a chain or other connection 13 to operate a shaft 14 arranged transversely of the base. Two pairs of polishing brushes, hereinafter termed horizontal brushes 15, are arranged for cooperation with each of the foot blocks 6, and these brushes are supported on shafts 16 mounted in suitable frames rising from the base 10, and driven from the shaft 14 through bevel gears 17. The mounting is such that the horizontal brushes are rapidly rotated when the motor is energized, and as will be plain from Fig. 3, these brushes are arranged in pairs with the brushes of each pair in close proximity one to the other, in order that the full side surface of the shoes being polished can be effectively reached by the brushes. A polishing brush for the top of the foot portion of the shoe, hereinafter termed the vertical brush, as 18, is mounted in rear of each pair of horizontal brushes, these vertical brushes being mounted upon shafts 19 supported in brackets rising from the base with said shafts operated from a suitably supported transverse shaft 20 through bevel gears 21. The shaft 20 is provided at one end with a sprocket wheel 22 connected by a chain 23 with a sprocket wheel 24 on a transverse shaft 25 mounted directly on the base 10, this shaft 25 being in turn operated by a sprocket chain 26 from a sprocket 27 on the shaft 14. The shaft 25 is further provided about centrally of the frame 10 with a worm gear 28 adapted to mesh with a worm gear 29 supported on a shaft 30 arranged vertically of and extend-

ing below the base 10. This shaft 30 is provided with a crank arm 31 connected to one end of a link 32, the opposite end of which is pivotally supported upon a block 33 rising from the bottom of the base 2.

Thus, as the shaft 14 is operated, the brushes both horizontal and vertical are rapidly rotated and at the same time the carriage as a whole is reciprocated on the tracks 7 due to the crank connection described. It is of course understood that in the reciprocation of the carriage 8, the horizontal brushes will travel by and in contact with the sides of the shoe, while the vertical brushes travel over the front portion of the shoe, the relative positions of these brushes with respect to the shoes when on the blocks 6 causing sufficient frictional contact between the brushes and shoes to insure a proper polishing operation.

The carriage 9 is mounted on the track and normally positioned at the end of the stand opposite the carriage 8. This dauber carriage 9 comprises a base 34, from which rises standards 35 carrying at their upper ends two pairs of bearings 36. The bearings 36 are arranged in pairs adjacent each side of the frame and are preferably disposed to each provide spaced bearing sections, in which is rotatably supported a rod 37. Thus there is arranged adjacent each side of the stand and preferably directly in rear of each foot block 6, a pair of spaced rods which are rotatively mounted in end bearings. These rods 37 are each provided at their forward ends with daubing brushes 38, and intermediate each pair of brushes is arranged a holder 39 adapted to receive the boxes of polishing material, or, if preferred, formed to directly receive the polishing material without the use of boxes. These brushes 38 in the normal position of the daubing carriage 9 rest in such relation to the holder 39 that the brushes 38 are in contact with the material in said holder, or in other words the daubing brushes are normally supplied with the polishing material. Each brush rod 37 is provided with a depending finger 40 fixed thereto, and arranged as a part of the platform 3, adjacent each dauber brush rod, is a guide bar 41, which as the dauber carriage moves forward, engages and operates the dauber brush rods by means of the finger 40. These guide rods have upwardly inclined portions 42 and forwardly extending inclined portions 43 substantially parallel with the dauber brush rods. The guide rods 41 are thus formed so that as the dauber carriage moves forward, the fingers 40 will be compelled to follow the outline of the guide bars and so rock the dauber brush rods in their bearings as to cause the dauber brushes to be turned downwardly or at right angles to their normal position. These brushes are of such size and the guide rods 41 are so positioned, that as the dauber carriage moves forward, the dauber brushes in their normal positions will pass over the lower portion of the shoe from the end to the rear end of the front portion. At this point, the dauber brush rods are rocked by engagement of the fingers 40 with the guides 41 against the tension of springs 41', so that the dauber brushes are turned on their axes to arrange said brushes at right angles to their normal position, and thereby cause said brushes to pass over and cover the foot portion of the shoe. Thus the dauber brushes apply the paste or other material to all parts of the shoe to be polished, the operation of such brushes being entirely automatic as will be evident.

The dauber carriage is actuated for the daubing operation at predetermined intervals in the movement of and by the polishing carriage. For this purpose the polishing carriage is provided with an operating arm 44 pivotally supported at 45 on an upright rising from the base 10, the forward end of which arm is provided with a hook 46 adapted to engage a suitably formed projection 47 secured to the base 34 of the dauber carriage. That end of the lever arm 44 opposite the hook 46 underlies a cam 48 mounted on a shaft 49 supported on the polishing carriage frame by bracket 50. The shaft 49 is operated by a sprocket chain 51 from the shaft 25, as will be plain in Fig. 1. The cam 48 has an interrupted or plain portion 52, and as this cam directly overlies the lever arm 44, it will be apparent that when the plain portion of the cam is directly above the lever arm, the free or hook end 46 of such lever arm will be depressed to a position to engage the projection 47 on the dauber carriage. With the cam in other positions, the hook 46 is held in a plane above the projection 47. The base 34 of the dauber carriage is provided with a central projection 53 in the form of a bar or the like, which when the dauber carriage is advanced, is adapted to be engaged by the cross bar of the frame 10 of the polishing carriage, so that said polishing carriage may force the dauber carriage to move backward to a normal position.

In operation, the user being seated on the seat 5 with his shoes resting upon the blocks 6, will start the motor with the effect to cause the same to rapidly reciprocate the polishing carriage. During the first reciprocation of this carriage, the horizontal and vertical brushes 15 and 18 pass over the shoes and remove the dust and dirt therefrom, the round or non-interrupted portion of the cam bearing upon the adjacent end of the lever arm during this movement. The polishing carriage again moves forward causing the brushes to pass over the shoes and in this forward movement the cam 48 has been moved to a position to arrange the

plain portion 52 above the lever arm. As the polishing carriage then starts rearwardly or away from the blocks 6, the hook 46 will engage the projection 47 of the dauber carriage and the latter will be advanced. During this advance, the paste or material is applied to the shoes by the dauber brushes 38 in the manner above described, and as the polishing carriage again moves forward, the dauber carriage is returned to normal position by means of the projection 53. The polishing brushes then pass over the portions of the shoes to which the paste has been applied and returns to normal position. However, the cam 48 has not been materially changed in position during this movement and the polishing carriage is still connected to the dauber carriage. Thus the dauber carriage is again brought forward and paste or other material again applied to the shoes. The previously applied material has been subjected to one polishing action, and it is desirable for a proper polish that the polishing mate rial be applied to the shoes a second time. Following this second application of polishing material, the dauber carriage is moved to a normal position in the forward movement of the polishing carriage, and at this time the cam 48 has moved to a position to force the hook end 46 of the lever arm 44 upwardly so that in the next rearward movement of the polishing carriage, the connection between the polishing carriage and dauber carriage is interrupted, and the dauber carriage remains in the normal position. The polishing carriage however, continues its reciprocations for several times in order to effect a high polish of the shoes, whereupon the motor comes to rest and the operation is complete.

While it is contemplated that the motor 12 may be energized in any desired manner, it is preferred that for the ordinary uses of the machine, such motor will be energized and controlled through mechanism governed by the usual coin controlled devices. This combination is well known in the art, and as the coin controlled device forms no part of the present invention, it is not described or shown herein.

Claims:

1. A shoe shining machine, comprising a stand, a polishing carriage movable therein, a dauber carriage mounted for movement therein, means for connecting the polishing carriage and dauber carriage, means operated during movement of the polishing carriage for controlling said connection, polishing brushes mounted on the polishing carriage, dauber brushes mounted on the dauber carriage, rods on which said brushes are mounted, fingers depending from the rods, and guides inclined with respect to the vertical and horizontal with which the fingers cooperate to turn the rods in the movement of the dauber carriage, whereby the dauber brushes are caused to travel lengthwise the side of the shoe from the rear and then turned to wipe over the toe portion of the shoe.

2. A shoe polishing machine, comprising a stand having foot blocks, a polishing carriage movable with relation to the foot blocks, polishing brushes carried by said carriage, a lever arm movable with the carriage and having a hook terminal, a dauber carriage movable in the stand with relation to the blocks, dauber brushes movable with said dauber carriage, a projection on the dauber carriage adapted to be engaged by said hook terminal, and a cam operative with the polishing carriage to control the movement of said lever arm.

3. In a shoe polishing machine, a foot rest, a dauber carriage adapted for movement to and from a position relative to said foot rest, dauber brushes arranged in said carriage and normally in engagement with polishing material, rods rotatably mounted on the carriage and connected to said brushes, fingers depending from said rods, and fixed guides adapted to be engaged by said fingers to turn the rods and cause the brushes to change their horizontal and vertical material applying positions, whereby the daubers move longitudinally in vertical contact with the heel and side portions of a shoe on such rest and are then turned for horizontal contact with the toe portion of such shoe.

4. A shoe polishing machine, including a polishing brush carriage, polishing brushes thereon, means for reciprocating said carriage, a dauber carriage, means whereby the dauber carriage may be operated in the movement of the polishing brush carriage, brush rods arranged in parallel pairs on the dauber carriage and mounted for turning, dauber brushes carried by the free ends of said rods, a finger secured to and depending from each rod, and a guide bar inclined outwardly and upwardly with respect to the movement of the dauber carriage to engage said finger of each rod in the movement of the carriage to cause the dauber brushes to move forward from vertical shoe side and heel engaging positions to horizontal shoe toe engaging positions, to thereby apply polish to the desired portions of the shoe during travel of the dauber carriage.

5. A shoe polishing machine, including a polishing brush carriage, polishing brushes thereon, means for reciprocating said carriage, a dauber carriage, means whereby the dauber carriage may be operated in the movement of the polishing brush carriage, brush rods arranged in parallel pairs on the dauber carriage and mounted for turning, dauber brushes carried by the free ends of said rods, a finger secured to and depending

from each rod, a guide bar inclined outwardly and upwardly with respect to the movement of the dauber carriage to engage said finger of each rod in the movement of the carriage to cause the dauber brushes to move forward from vertical shoe side and heel engaging positions to horizontal shoe toe engaging positions, to thereby apply polish to the desired portions of the shoe during travel of the dauber carriage and springs for normally returning the rods and thereby the dauber brushes to normal position on the return of the dauber carriage to inoperative position.

In testimony whereof I affix my signature.

PAUL M. RAYSOR. [L. S.]