

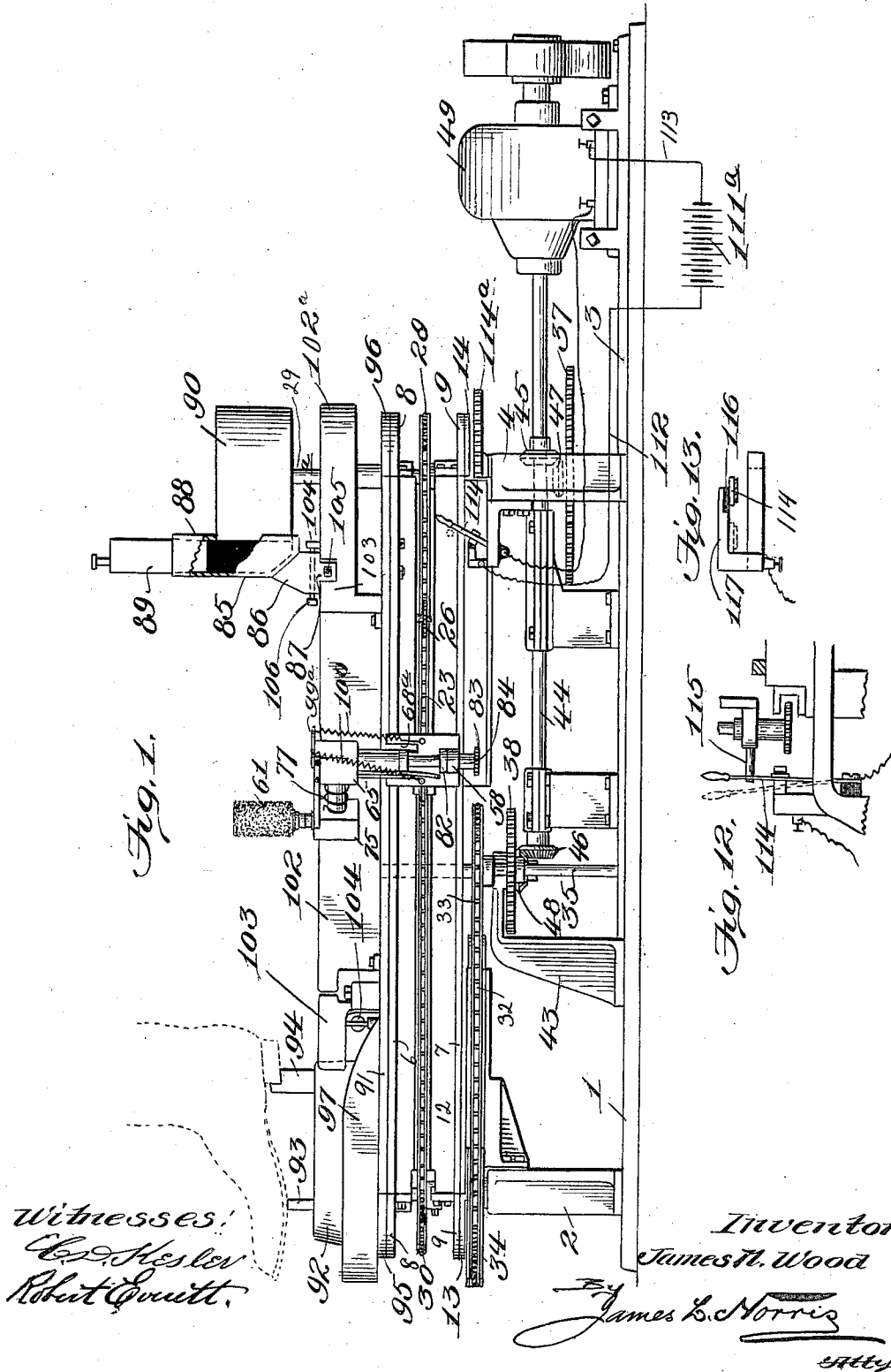
J. N. WOOD.
SHOE POLISHING MACHINE.

APPLICATION FILED MAR. 12, 1908. RENEWED AUG. 20, 1910.

987,936.

Patented Mar. 28, 1911.

5 SHEETS—SHEET 1.



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SHOE POLISHING MACHINE.

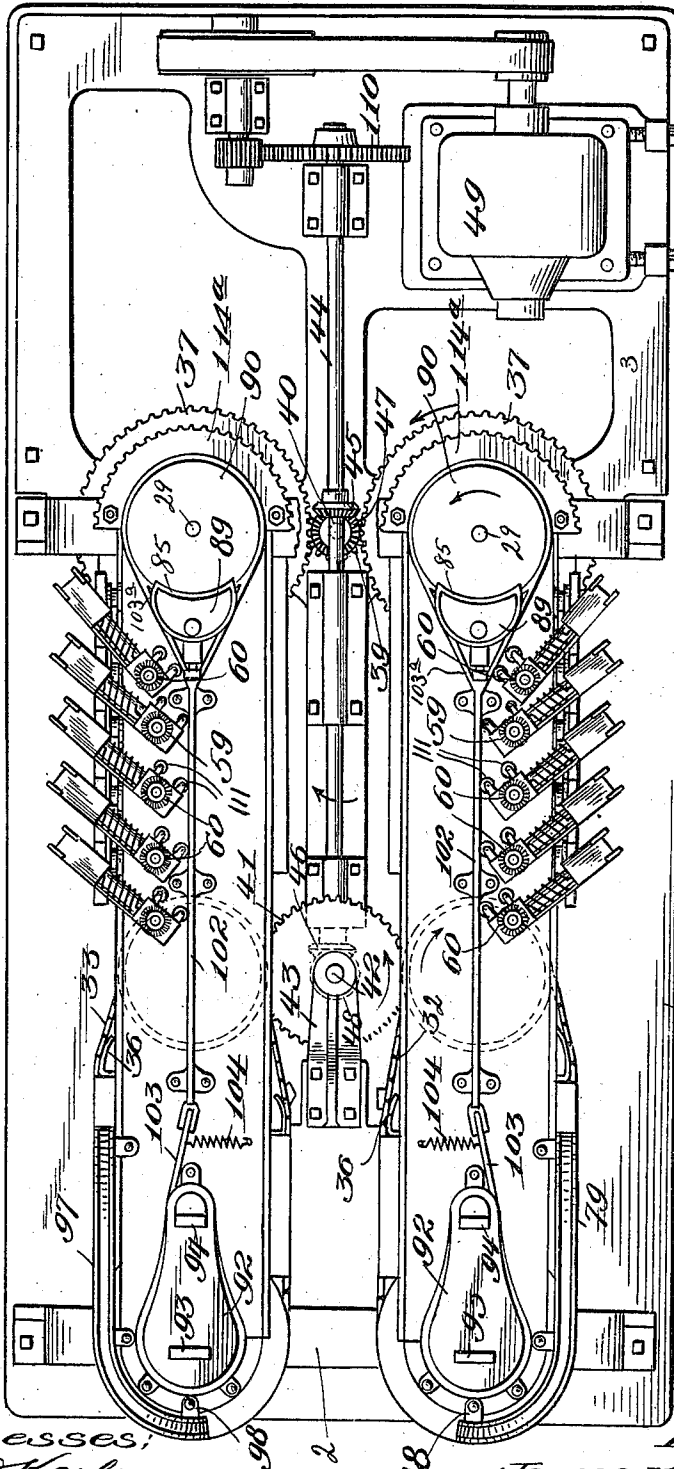
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5 SHEETS—SHEET 2.

Fig. 2.



Witnesses:
C. S. Hester
Robert Corbett

Inventor
James N. Wood
James L. Norris

J. N. WOOD.

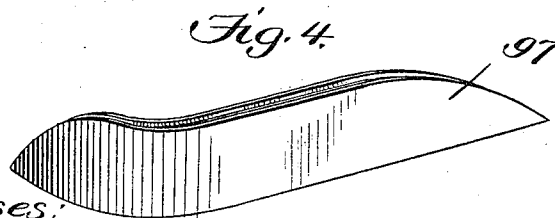
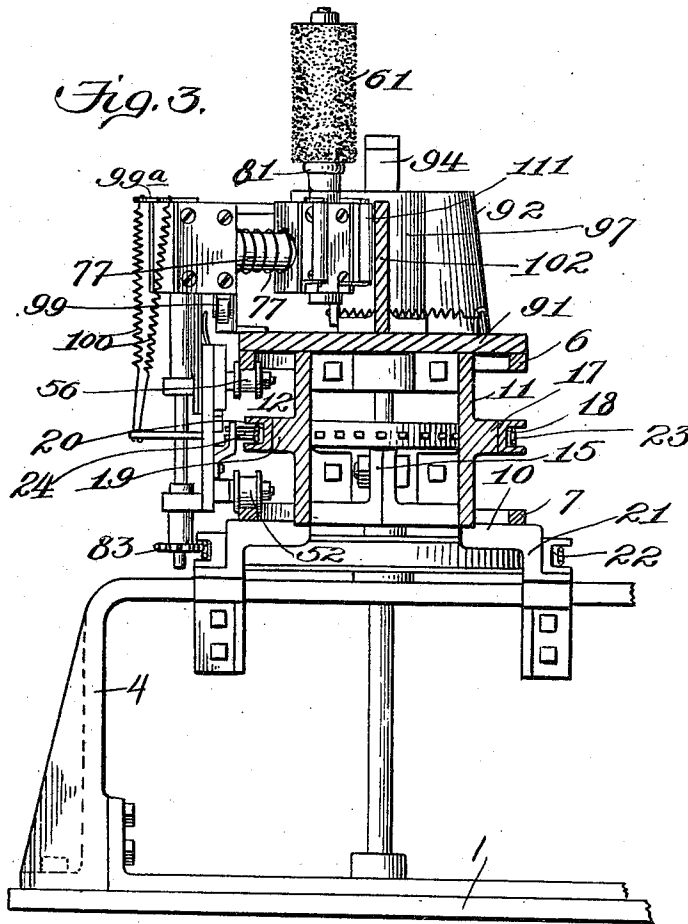
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5 SHEETS—SHEET 3.



Witnesses:
E. J. Hesler
Robert Coult

Inventor
James N. Wood
By *James L. Norris*
Att'y.

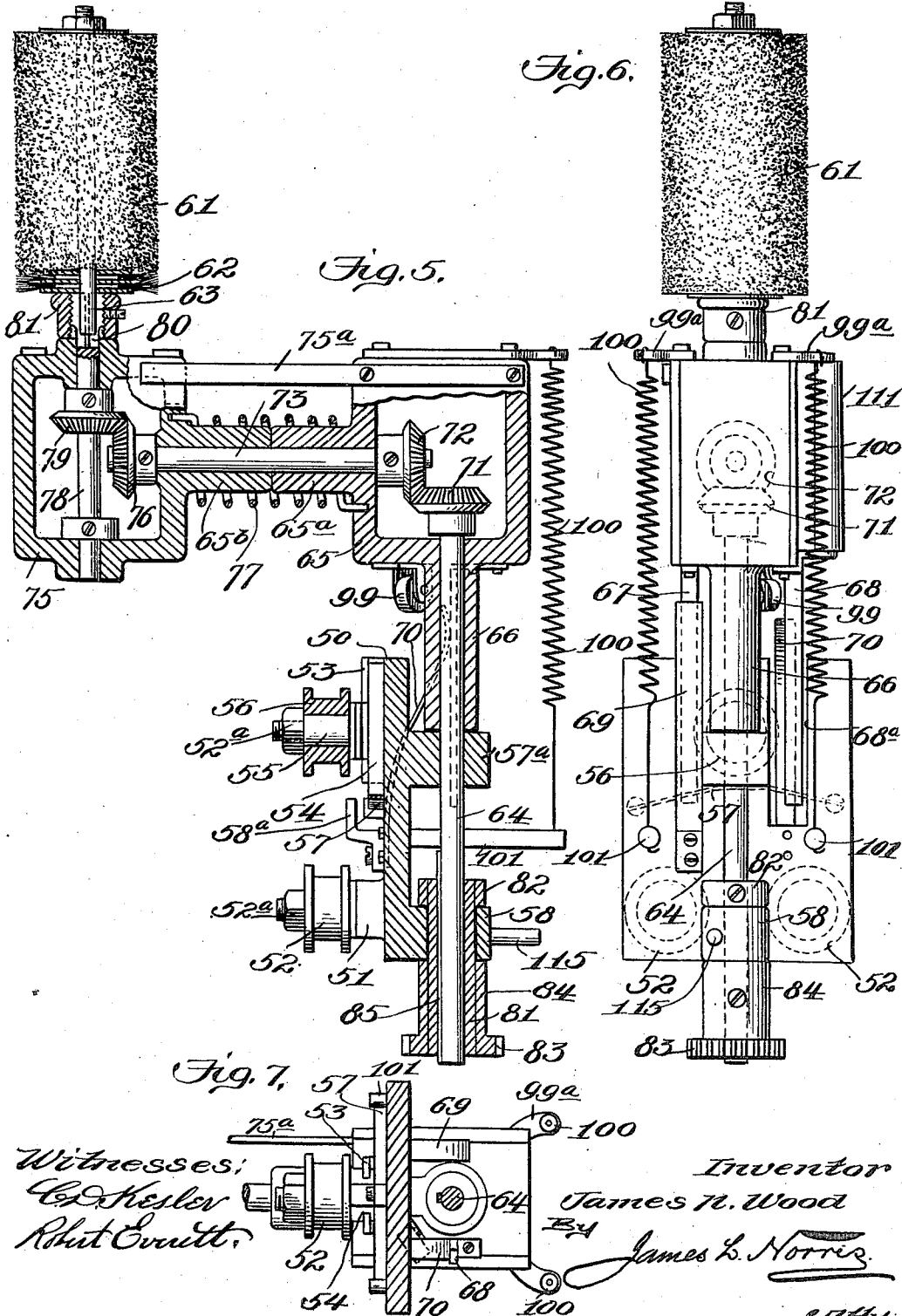
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5 SHEETS-SHEET 4.



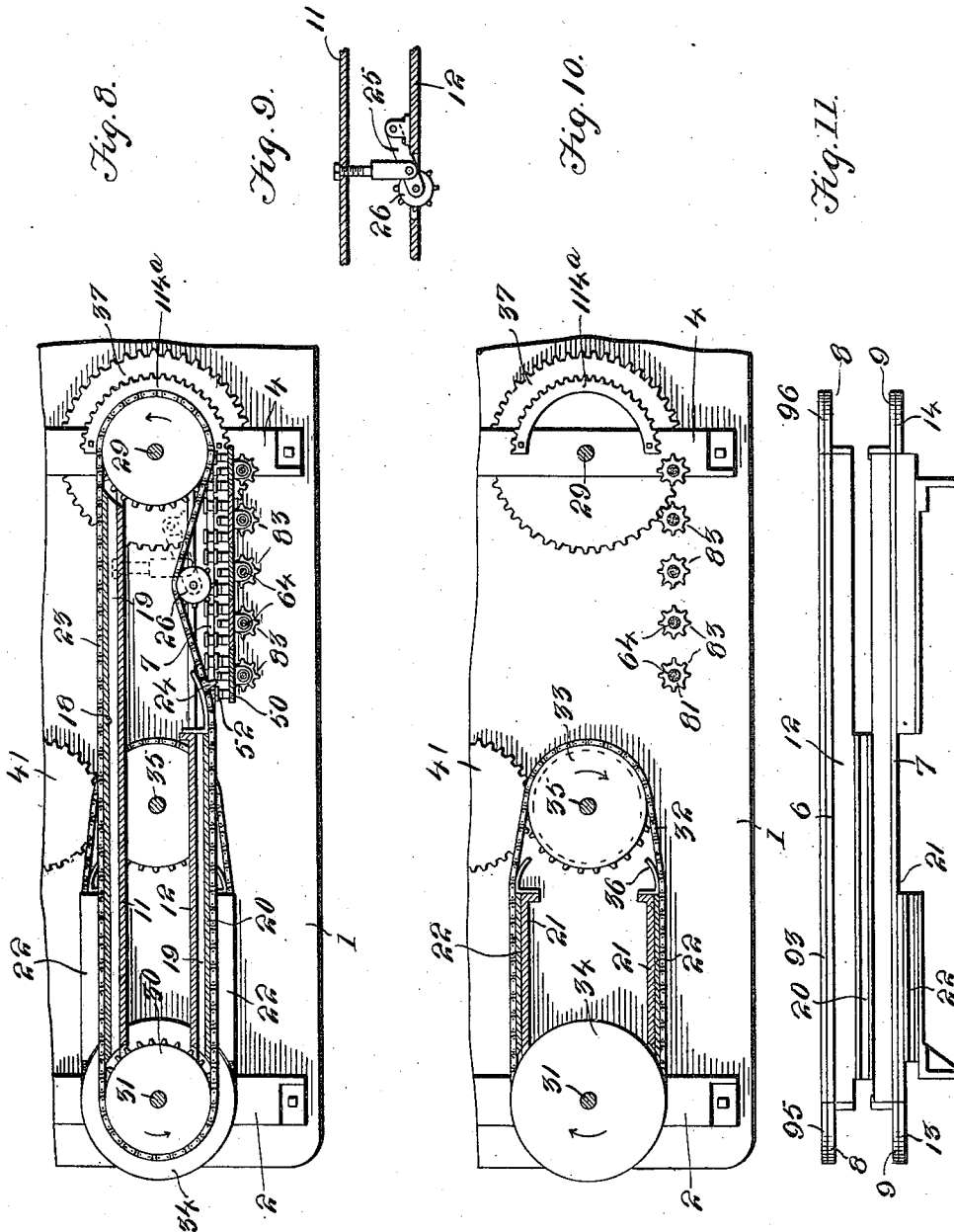
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5 SHEETS—SHEET 5.



WITNESSES:

W. F. Koye
R. E. Barry

INVENTOR
James Nelson Wood
BY
Whitaker & Treworth
Attorneys

UNITED STATES PATENT OFFICE.

JAMES N. WOOD, OF RICHMOND, VIRGINIA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO
INTERNATIONAL MACHINE CORPORATION, A CORPORATION OF VIRGINIA.

SHOE-POLISHING MACHINE.

987,936.

Specification of Letters Patent.

Patented Mar. 28, 1911.

Application filed March 12, 1908, Serial No. 420,681. Renewed August 20, 1910. Serial No. 578,243.

To all whom it may concern:

Be it known that I, JAMES N. WOOD, a citizen of the United States, residing at Richmond, in the county of Henrico and State of Virginia, have invented new and useful Improvements in Shoe-Polishing Machines, of which the following is a specification.

My invention consists in the novel features hereinafter described, reference being had to the accompanying drawings which illustrate the best form in which I have contemplated embodying the invention and said invention is fully disclosed in the following description and claims.

In describing the invention in detail reference is had to the accompanying drawings wherein like reference characters denote corresponding parts throughout the several views and in which:—

Figure 1 is a side elevation of a shoe polishing machine in accordance with this invention. Fig. 2 is a top plan. Fig. 3 is a transverse section through one side of the machine. Fig. 4 is a perspective view of a detail illustrating the cam track for elevating the brushes. Fig. 5 is a vertical sectional view of one of the carriers and the operating mechanism for a brush. Fig. 6 is a side elevation illustrating the brush carriage, the brush operating mechanism and brush. Fig. 7 is a sectional plan through one of the brush carriages. Fig. 8 is a partial horizontal sectional view of the apparatus, showing the endless carrier, the section being taken just below the plane of the supporting means for the tensioning roller, the position of which is indicated in dotted lines. Fig. 9 is a detail showing the tensioning device for the carrier and its supporting means. Fig. 10 is a plan illustrating the means for driving the rotating mechanism for the brushes. Fig. 11 is a side elevation showing one side of the duplex track and guide for the carrier as well as the guide for one of the driving means for the operating mechanism for the brush. Fig. 12 is an end view illustrating the circuit making and breaking device. Fig. 13 is a detail of the contact.

A shoe polishing machine in accordance with this invention comprises a supporting

frame, a plurality of brush carriages, as shown five in number for each shoe support, but this number can be increased or diminished as desired, the brush carriages traveling independently and successively in the same circuit, each of the carriages being moved positively a portion of its circuit and said carriages coöperating with each other so as to complete the circuit; a carrier mechanism for independently and positively shifting each carriage a portion of its circuit; a duplex track for the carriages; operating means for the carrier mechanism; spring controlled cleaning polish applying and polishing brushes; combined brush supporting and driving mechanisms mounted upon the carriages; operating means for said combined supporting and driving mechanisms; means for elevating the brushes during their travel; an adjustable polish supply; a polish feeding mechanism; an adjustable tensioning mechanism for the carrier mechanism; and means for automatically returning the brushes to normal after being elevated.

A shoe polishing machine in accordance with this invention is adapted to simultaneously polish a pair of shoes at the same time. Under such conditions a duplex mechanism for applying polish upon and then polishing the shoes is used. Both of these mechanisms are driven from a common source and as each mechanism is similar in construction, but one will be described, the description applying to the other. These mechanisms are supported upon a platform common to both, while the source of power for operating the machine is mounted upon an auxiliary platform arranged at the rear of what is termed the main platform for supporting the said mechanisms. The main platform is indicated by the reference character 1 and has attached thereto forwardly a support 2, the support projecting upwardly from the platform 1 and having the duplex polish applying and polishing mechanisms secured thereto. The auxiliary platform which supports the driving means for operating the machine, as before stated, is arranged at the rear of the main platform and is indicated by the reference character 3. Upon the

auxiliary platform 3 is secured an upwardly extending support 4 to which the rear of said mechanisms is connected.

As before stated the machine embodies a duplex mechanism for simultaneously polishing a pair of shoes, each of said mechanisms comprising a plurality of brush carriages, a duplex track for the carriages, operating means for the carrier mechanism, spring controlled cleaning, polish applying and polishing brushes, combined brush supporting and driving mechanisms mounted upon the carriages, operating means for said combined supporting and driving mechanisms, means for elevating the brushes during their travel, a polish supply, a polish feeding mechanism, an adjustable tensioning mechanism for the carrier mechanism, means for automatically lowering the brushes after they have been elevated, a shoe rest or support, and a brush guide.

Duplex track for the brush carriages.—

The duplex track is formed by a pair of depending flanges 6, a pair of upwardly extending flanges 7, a pair of depending flanges 8 which form a continuation of the flanges 6 and a pair of upwardly extending flanges 9 which form a continuation of the flanges 7. The flanges 6 depend from the lower face of the cover plate 91. The flanges 7 project from the upper face of the lateral extensions 10 which project from the lower ends of the side plates 11 and 12. The flanges 7 are in vertical alinement with respect to the flanges 6. The flanges 8 depend from the lower face of the segment-shaped extensions 95, 96 which are fixed to the ends of the plates 11 and 12. The flanges 9 project from the upper face of the segment shaped extensions 13 and 14 which project from the ends of the side plates 11 and 12. The positions of the extensions 95, 96, 13 and 14 are such so that the flanges 8 and 9 will be a continuation of the flanges 6 and 7 respectively. The cover plate 91 is secured to the top of the side plates 11 and 12, these latter being suitably spaced apart and secured together as at 15. The width of the cover plate 91 with respect to the distance between the tops of the side plates 11 and 12 is such that such cover plate 91 will extend from the said plates 11 and 12. The side plate 11 has projecting laterally from its outer face approximately centrally thereof an extension 17 provided with a groove 18 which constitutes a chain guide, the chain forming a part of the carrier mechanism being hereinafter referred to. The extension 17 is of a length equal to the length of the plate 11. The plate 12 has projecting approximately centrally from its outer face in a lateral direction an extension 19 which is of less length than the length of the plate 12. Said extension is provided with a groove 20 constituting a chain guide. The

plate 12 is cut away and the function thereof together with the decreased length of the extension 19 will be hereinafter referred to. Each of the plates 11, 12 at its forward end has the lateral extension 10 of greater width than at its rear end. That portion of greater width is indicated by the reference character 21 and is provided with a channeled member 22 to constitute a chain guide for the reception of the chain forming a part of the driving means for the combined supporting and operating mechanism for the brushes which is hereinafter referred to.

Carrier mechanism.—This mechanism consists of an endless chain 23 traveling in the guides 18 and 20 and provided with a lug 24 for engaging with a brush carriage and shifting it around the duplex track arranged at the top and bottom of a chain 23 so as to straddle an element of a tensioning device to be hereinafter referred to. The brush carriage will be hereinafter referred to, but it will be stated that it is provided with a roller which engages the upper section of the duplex track, such section being constituted by the flanges 6, 8, and the carriages are further provided with a pair of rollers which engage the lower section of the duplex track, said lower section being constituted by the flanges 7 and 9. The endless chain 23 after it leaves the guide 20 is deflected under the cover plate 91 so that it will discontinue the shifting movement of the brush carriage which the chain has carried around to one end of the guide 20. The brush carriage under such circumstances remains stationary until a succeeding carriage abuts against the same and shifts it along the track-way. An adjustable tensioning device of known construction and which is indicated by the reference character 25 is employed for keeping the endless chain taut. The tensioning device is positioned below the cover plate 91 and embodies a sprocket 26 over which the chain passes when traveling under the cover plate. The chain 23 at the rear portion of the side plate 12 engages a sprocket wheel 28 mounted upon a vertically extending rotatable shaft 29 positioned at the rear of the plates 11 and 12. The shaft 29 rotating the sprocket 28 will impart movement to the chain 23 as will be evident. At the forward portion of the plates 11 and 12 a sprocket wheel 30 is arranged and which is connected to a vertically extending shaft 31. The shaft 29 extends through the cover plate 91 and is connected to the polish feed cylinder 90 to be hereinafter referred to. By such an arrangement it is evident that when the shaft 29 is rotated, motion will be transmitted to the sprocket 28 and also to the polish feed cylinder 90 and furthermore impart motion to the chain 23. By setting up the chain 23 in the manner as stated, it is evident that the

brush carriages to be hereinafter referred to are independently shifted in a positive manner by the carrier for a part of the circuit and that the completion of the circuit is had owing to the cooperation of the carriages with each other, that is to say when a brush carriage is dropped by the carrier it is engaged by a succeeding carriage and shifted along the track-way until the distance that it is moved is such as to position the carriage to be again engaged by the lug 24 upon the chain 23.

Operating means for the combined supporting and driving means for the brushes.—

Said operating means consists of an endless chain 32 which travels in the guide 22, over a sprocket wheel 33 and around a flanged pulley 34 which is loosely carried by the shaft 31. The sprocket wheel 33 is fixed to a vertically extending rotatable shaft 35. The operating means therefor will be hereinafter referred to. Tensioning devices 36 projecting from the extensions 21 are provided for the chain 32, said tensioning devices bearing against the chain. The chain 32 travels in an opposite direction with respect to the direction in which the chain 23 travels and the said chain 32 is adapted to engage the sprocket pinion 83 supported by a brush carriage to be hereinafter referred to and rotate said sprocket pinion, whereby motion will be imparted to the brush.

The shaft 29 carries a gear 37 and the shaft 35 carries a gear 38. Motion is imparted to the gear 37 through the medium of a gear 39 carried by a shaft 40, the latter being journaled in the machine frame. Motion is imparted to the gear 38 by a gear 41 carried by a shaft 42 journaled in the supporting arm 43.

The main operating shaft of the machine is indicated by the reference character 44 which carries a pair of beveled gears 45, 46, the former meshing with a beveled pinion 47 carried by the shaft 40 whereby said shaft is rotated and the beveled gear 46 meshes with a beveled pinion 48 on the shaft 42, whereby this latter shaft is rotated.

Mounted upon the auxiliary platform 3 is a motor 49 having its shaft operatively connected with the main operating shaft 44 for operating it, as at 110.

The source of electrical energy is indicated by the reference character 111^a and the circuit wires to the motor are designated by the reference characters 112, 113. Interposed in the circuit wires is a switch arm 114 which is operated manually to close the circuit and automatically to break the circuit. In this latter connection it will be stated that one of the brush carriages is provided with an arm 115 which is adapted to engage the switch arm and shift it to the insulated portion 116 of the contact 117 whereby the circuit will be broken and the

operation of the machine discontinued. The switch arm 114 is somewhat elastic so that when it is desired to start the machine, the arm can be pulled laterally so as to clear the arm 115 and engage the metallic portion of the contact 117. In lieu of making and breaking the circuit in the manner as stated it is obvious that any other suitable means may be employed.

Brush carriages.—As each of the brush carriages is of the same construction but one will be described. The brush carriages are adapted to travel upon the duplex track-way. Each of the brush carriages is indicated by the reference character 50 and consists of a vertically extending rectangular plate having projecting from its inner face at the bottom thereof a pair of studs 51 each carrying a flanged roller 52 adapted to travel upon the lower section of the track-way. Projecting from the inner face of the plate 50 is a pair of guides 53 adapted to receive a removable supporting plate 54 having a laterally extending stud 55 carrying a flanged roller 56, the latter being positioned in a line extending approximately centrally between the studs 51. The rollers 52 and 56 are retained in position by the nuts 52^a. The lower end of the supporting plate 54 rests upon a bow-shaped spring 57 which has its ends attached to the plate 50 and the tendency of said spring is to maintain said roller 56 in contact with the upper section of the duplex track-way and furthermore provide means whereby the plate 54 can be lowered to move the roller 56 out of engagement with the track-way so that the carriage can be removed when occasion so requires. Projecting laterally from the outer face of the plate 50 is a pair of combined stop and guide arms 57^a, 58, these arms being apertured, but arranged in vertical alinement with respect to each other. Projecting from the rear face of the plate 50 is a lug 58^a adapted to extend in the path of the lug 24 of the carrier 23 whereby the plate 50 will be shifted by the carrier when the lugs are in engagement and the carrier 23 is traveling.

Cleaning, polish applying and polishing brushes.—As before stated, the number of brushes shown in connection with the machine is five for each shoe support, but this number can be increased or diminished as desired. Preferably but one cleaning and one polish applying brush will be used, but it is obvious that the number of cleaning and polish applying brushes can be increased. The polish applying brush is indicated by the reference character 59 while the cleaning and polishing brushes are indicated by the reference character 60. The construction of the cleaning, paste applying and polishing brushes is the same so that the description of one will apply to the other. The body portion of each of the brushes is indicated

by the reference character 61, the tufts by the reference character 62. The body portion 61 is carried by a shaft 63, the lower end of the shaft projecting from the body portion 61.

Combined brush supporting and driving mechanisms.—A combined brush supporting and driving mechanism is mounted upon each carriage and the construction of one will apply to the other as all of such mechanisms are similar in construction. Each of said mechanisms consists of a vertical shaft 64 which extends through the arm 57^a as well as projecting in a casing 65 which is termed a supporting member. The member 65 is provided with a laterally extending collar 65^a and a depending collar 66, the latter surrounding the shaft 64 and resting upon the arm 57^a. Depending from the bottom of the member 65 is a pair of elongated bars 67, 68, one arranged at each side of the arm 57^a. Fixed at its lower end to the plate 50 and engaging the outer face of the bar 67 is a flat spring 69, the function of which is to shift the member 65 axially upon the shaft 64. Fixed at its lower end to the plate 50 and engaging the inner face of the bar 68 is a flat spring 70, the tendency of which is to assist in shifting the member 65 on the shaft 64. The movement of the bar 68 is permitted through the forming of a slot 68^a in the plate 50. The shaft 64, as before stated, extends into the member 65 and carries a beveled gear 71 which meshes with a beveled gear 72 arranged within the member 65. The beveled gear 72 is carried on one end of a shaft 73 projecting at right angles to the shaft 64 and extends through the collar 65^a. The collar 65^a abuts against a collar 65^b projecting laterally from a casing 75 which is termed an outer member and into the latter projects the counter-shaft 73, the shaft 73 also extending through the collar 65^b. That end of the counter-shaft 73 which extends in the member 75 carries a beveled gear 76. The member 75 is loosely mounted upon the counter-shaft 73. Surrounding the collars 65^a, 65^b and fixed at one end to the member 65 and at its other end to the member 75 is a coiled spring 77, the tendency of which is to shift the member 75 axially upon the counter-shaft 73. Journalled in and projecting above the outer member 75 is a shaft 78 carrying a beveled gear 79 which meshes with the gear 76. The shaft 78 is provided exteriorly of the member 75 with a threaded split end 80 to which is secured by means of the coupling band 81 the shaft 63.

From the foregoing arrangement of parts it is evident that when the shaft 64 is rotated motion will be transmitted to the counter-shaft 73 which in turn will transmit motion to the brush shaft owing to the connection between the brush shaft 63 and the counter

shaft 73. To prevent the member 75 swinging entirely around the shaft 73, a stop arm 75^a is provided which is positioned in the path of the member 75 and arrests the outward movement thereof. The stop arm 75^a is carried by the member 65.

Operating means for combined brush supporting and driving mechanism.—As each operating means is the same for each mechanism, but one will be described. The said means consists of a driven sleeve 81 which extends through the arm 58 and carries on its upper end a stop collar 82 engaging the upper face of the arm 58. The sleeve 81 has fixed to its lower end a sprocket pinion 83 engaged and operated by a driving means for the said sleeve. The hub 84 of the pinion 83 engages the lower face of the arm 58. Said driving means has been hereinbefore referred to. The sleeve 81 is keyed as at 85 to the shaft 64, the latter extending slightly below the sprocket pinion 83 and said shaft 64 is capable of a vertical as well as rotative movement and the manner of elevating the shaft will be hereinafter referred to.

Polish supply.—The polish supply is arranged at the rear of the machine and consists of a vertically extending receptacle 85 provided at its lower end with a forwardly extending bracket 86 having a pair of depending wings 87. The receptacle 85 is formed with a curved rear face and has the upper portion closed as at 88 whereby the lower portion of the rear face will constitute an outlet for the polish within the receptacle 85. Extending within the receptacle 85 is a weight 89, the function of which is to force the polish in the path of a rotatable feed cylinder 90 of metal or other suitable material and which is arranged at the rear of the machine. The function of the cylinder 90 is to transfer the polish from the receptacle 85 to the paste applying brush. The operating means for the feed cylinder 90 has been hereinbefore referred to.

The reference character 91 denotes a combined supporting and cover plate which is rectangular in contour and has mounted on the forward end thereof a shoe supporting block or rest 92 provided with a shoe sole support 93 and a heel support 94. The block or rest 92 has the sides tapering or beveled, as at 92^a and is fixedly secured to said plate 91. Abutting against the ends of the plate 91 are the segment-shaped extensions 95, 96, the feed cylinder 90 being positioned above the extension 96 while the shoe rest 92 projects upon said extension 95. Mounted upon a portion of the extension 95 and of a length as to extend beyond the plate 91 so as to project from the inner end of the shoe rest 92 is a cam track 97. The track 97 is formed with inwardly extending lugs 98 through which extend hold fast devices

for securing said cam track 97 to the plate 91. The cam track 97 in connection with the roller 99 (Fig. 5) upon the member 65 of the combined brush supporting and driving mechanism constitutes means for elevating the shaft 64 so that the angular position of the brush with respect to the brush carriage can be varied. In this connection it will be stated that as the carriage travels around the shoe rest the roller 99 riding up the cam track 97 will, as will be evident, elevate the shaft 64 which in turn will carry the members 65 and 75 therewith so that the brush through the action of the spring 77 will extend across the vamp of the shoe, whereby the necessary cleaning, paste applying or polishing function by the brush will be thoroughly had. As the brushes descend into an inclined position to contact with the vamp of the shoe the guide rollers 111 thereof, will engage the tapered or beveled portion 92^a of the block 92, which carries the shoe support 93-94, said beveled portion serving to guide and support the weight of the brushes, while permitting them to rest upon the shoe sufficiently to cause the shoe to indent itself into the bristles of the brushes. To return the shaft 64 to normal, the member 65 has connected thereto a pair of arms 99^a to which are secured the upper ends of a pair of springs 100 (Fig. 5) the lower ends of said springs 100 being connected to pins 101 projecting outwardly from the plate 50 of the brush carriage. From such arrangement it is evident that when the members 65, 75 and shaft 64 are elevated through means of the roller 99 riding upon the cam track 97, the springs 100 will be expanded, but as soon as the roller 99 leaves the cam track 97 the springs 100 will contract, thereby returning the brush supporting and driving mechanism to normal position.

Secured to the plate 91 approximately centrally thereof is a longitudinally extending brush guide 102 and which is adapted to guide the brushes as they travel from the polish supply to the shoe support. The rear end of said guide extends between the wings 87 of the bracket 86, the latter being attached to the polish receptacle. The front end of the brush guide 102 is provided with a hinged gate 103 having connected thereto a spring 104. The brush guide 102 limits the inward movement of the brushes during their travel toward and from the shoe rest and the gate 103 allows for a brush after moving clear of the guide to operate upon the counter and heel of the shoe, the brush engaging with the gate 103 and shifting it from its normal position, such position being in engagement with the rear of the rest. After the brush is clear of the counter and heel of the shoe, the gate is returned to normal position through the action of the

spring 104. The rear end of the brush guide 102 is provided with a pair of outwardly inclined extensions 103^a which constitute means for arresting the inward movement of the brushes prior to passing and after they have passed around the feed cylinder 90.

The polish receptacle is adjustable toward and away from the feed cylinder 90 so as to regulate the quantity of polish taken up by the brush cylinder and in this connection it will be stated that a lug 104^a is carried by the plate 91 and is arranged at the rear of the bracket 86. Extending through the guide member 102 and the wings 87 is a fixing bolt 105 for retaining the receptacle in the position to which it has been adjusted. The adjustment of the polish receptacle is had through the medium of an adjusting screw 106 which extends through the bracket 87 and abuts against the lug 104. When the bolt 105 is loosened and the screw 106 is turned, it is evident that the receptacle can be swung toward or away from the feed cylinder and under such conditions the amount of polish taken up from the feed cylinder, such polish being forced from the receptacle through the medium of the weight, can be varied.

Each of the combined brush supporting and driving mechanisms is provided with a pair of guide rollers 111. These rollers are rotatably connected to the member 75 and are adapted to travel around the guide 102^a arranged at the rear end of the cover plate 91 and are furthermore adapted to engage the brush guide 102 as well as the swinging gates 103. The guide rollers 111 are arranged in a vertical manner and also engage and travel around the shoe support when the brushes are operating upon the shoe. To prevent the cleaning and polishing brushes from contacting with the polish feed cylinder during the travel of the brushes around the rear end of the machine, the guide rollers 111 which are carried by the combined supporting and driving mechanisms for the cleaning and polishing brushes are of greater diameter than the guide rollers carried by the brush supporting and driving mechanisms for the polish applying brush. Owing to this manner of setting up the guide rollers, it is evident if the guide rollers of greater diameter travel around the guide 112 that the cleaning and polishing brushes will be held out of the path of the polish feed cylinder, consequently not receiving any polish.

In actual practice the rollers 111 of the polish applying brush supporting devices are made about one-eighth of an inch smaller in diameter than those of the other brush supporting devices, such difference being sufficient in practice to hold the cleaning and polishing brushes out of contact

with the polish feed cylinder 90 while permitting the polish applying brush to touch the cylinder 90 and take polish therefrom. All of the brushes bear against the shoes
 5 being polished (when in contact therewith) sufficiently to permit the shoe to indent itself into the bristles of the brushes to a considerable extent, and the difference in the sizes of the rollers 111, being so slight, is thus
 10 compensated for by the elasticity of the brushes when the brushes are in contact with the shoes to be polished, as will be readily understood. The difference in the size of the rollers 111 of the polish applying brush and rollers 111 of the other
 15 brushes is shown in Fig. 2.

To provide for the rotating of the polish brush when in engagement with the polish feed cylinder 90 at the rear end of the machine, a segment-shaped rack 114^a is supported at the rear end of the machine in
 20 position to be engaged by the sprocket pinion 83. By such an arrangement it is evident that as the brush carriage to which is connected the polish applying brush travels
 25 around the rear end of the machine, the brush will be caused to rotate, owing to the engagement of the sprocket pinion 83 with the rack 114^a. It will be seen also that
 30 the rack 114^a causes the rotation of the cleaning and polishing brushes as they travel around the rear end of the machine.

The operation of the entire machine is as follows: A person desiring to have his shoes
 35 polished takes position so that he can rest his feet upon the sole and heel rests 93, 94 and the switch is then actuated to complete the motor circuit and start the motor and the parts operatively connected therewith.
 40 The lug 24 on the carrier 23 will be in position after each complete operation of the machine to engage the bracket or lug 58^a on one of the brush carriages, and preferably the one provided with a cleaning brush.
 45 The carriage will then begin to move rearwardly with the carrier, and around the rear of the machine the brush being guided by the guides 112, with which one of the rollers 111 will have a trailing contact. As the
 50 brush passes around the polish cylinder 90 the pinion 83 engages the rack 114^a and rotates the brush, but the brush is held out of contact with the cylinder, by the roller 111, as previously described. The carrier then
 55 moves forward the guide roller 111 moving along in contact with the longitudinal guide 102. As the carriage nears the front of the machine the pinion 83 engages the power chain 32, thus causing the brush to rotate
 60 as long as the pinion and chain are engaged. The roller 111 then passes off of the guide 102 on to the swinging gate 103 which yields to permit the brush to tilt inwardly, and as the carriage continues to move forwardly
 65 the roller 111 will engage the rear curved

face of the block or rest 92, and move outwardly thus swinging the brush entirely around the back of the heel from the outside inwardly. The roller 111 then follows the
 70 side of the block 92 toward the front, operating on the inner side of the shoe, when the brush supporting mechanism of the carriage which is in advance of the brush is raised by the cam track, permitting the brush to fall
 75 over into an inclined position, the roller 111 engaging the beveled portion 92^a of the block 92 and sweeping the brush over the vamp or toe portion of the shoe, until it has moved around to the outer side of the shoe, when
 80 the brush supporting mechanism descends to its normal position, bringing the roller 111 into engagement with the side of the block 92 and permitting the brush to operate on the outside of the shoe and rearwardly
 85 toward the portion of the heel which it has already acted upon. The roller 111 then passes to the gate 103 then to the central guide 102, and so rearwardly. As the carriage passes rearwardly so as to disengage
 90 gear 83 from power chain 32, the rotation of the brush ceases, and the carriage moves on until it engages the foremost of the stationary carriages on the track, into which it gently bumps and pushes all the other carriages along with it until the rearmost carriage takes the position from which the act-
 95 ing carriage started. The lug 24 then slips out of engagement with the bracket 58^a, owing to the inward deflection of the carrier chain and the lug moves inwardly passing the idle sprocket, and then outwardly when it engages the bracket of the rearmost carriage, which will be supposed to be the one
 100 carrying the polish applying brush. The cycle of operations as to this carriage will be the same as that just described except that the rollers 111 are just enough smaller in diameter to permit the brush to wipe the
 105 face of the polish cylinder 90 and take polish therefrom which is spread on the shoe. The operation of the two polishing brushes will then follow successively, thus completing the polishing of the shoe, when the machine
 110 is stopped by breaking the motor circuit. This is effected by the lug 115 on the carriage which is first actuated by the conveyor, and which, as said carriage is returned to its original position, engages the switch arm
 115 114 and moves it out of engagement with the metallic portion of the contact 117 and against the insulated portion 116.
 120

It will be understood that the foregoing describes the operation of one half of the machine, that is the mechanism for cleaning and polishing one shoe and that the operation
 125 of the other half of the machine in cleaning and polishing the other shoe is exactly similar and occurs at the same time.

The mechanism of my improved machine except so far as it relates to the means for
 130

applying blacking or polish, forms the subject matter of another application filed by me June 12, 1908, and given Serial No. 438,227 and such features are therefore not claimed herein.

What I claim is:—

1. A shoe polishing machine comprising a shoe support, a supporting track surrounding said shoe support, a plurality of traveling brush carriages engaging said track, means for imparting movement to the carriages, polish applying and polishing brushes, supporting and operating means therefor mounted upon the carriages, a receptacle containing polish constituting the polishing supply, a polish feed cylinder arranged in operative relation with respect to the supply and adapted to be engaged by the polish applying brush whereby the polish is supplied to said brush, and means whereby the polishing brushes are held clear of the path of the feed cylinder.

2. A shoe polishing machine comprising a shoe support, a supporting track surrounding said shoe support, a plurality of traveling brush carriages engaging said track, means for imparting movement to the carriages, polish applying and polishing brushes, supporting and operating means therefor mounted upon the carriages, a receptacle containing polish constituting the polishing supply, a polish feed cylinder arranged in operative relation with respect to the supply and adapted to be engaged by the polish applying brush whereby the polish is supplied to said brush, means whereby the polishing brushes are held clear of the path of the feed cylinder, and means for rotating the polish applying brush when in engagement with said cylinder.

3. A shoe polishing machine comprising a shoe support, a supporting track surrounding said shoe support, a plurality of traveling brush carriages engaging said track, means for imparting movement to the carriages, polish applying and polishing brushes, supporting and operating means therefor mounted upon the carriages, a receptacle containing polish constituting the polishing supply, a polish feed cylinder arranged in operative relation with respect to the supply and adapted to be engaged by the polish applying brush whereby the polish is supplied to said brush, means whereby the polishing brushes are held clear of the path of the feed cylinder, and means for forcing the polish in the path of the cylinder.

4. A shoe polishing machine comprising a shoe support, a supporting track surrounding said shoe support, a plurality of traveling brush carriages engaging said track, means for imparting movement to the carriages, polish applying and polishing brushes, supporting and operating means therefor

mounted upon the carriages, a receptacle containing polish constituting the polishing supply, a polish feed cylinder arranged in operative relation with respect to the supply and adapted to be engaged by the polish applying brush whereby the polish is supplied to said brush, means whereby the polishing brushes are held clear of the path of the feed cylinder, means for rotating the polish applying brush when in engagement with said cylinder, and means for forcing the polish in the path of the cylinder.

5. A shoe polishing machine comprising a shoe support, a supporting track surrounding said shoe support, a plurality of traveling brush carriages engaging said track, means for imparting movement to the carriages, polish applying and polishing brushes, supporting and operating means therefor mounted upon the carriages, a receptacle containing polish constituting the polishing supply, a polish feed cylinder arranged in operative relation with respect to the supply and adapted to be engaged by the polish applying brush whereby the polish is supplied to said brush, means whereby the polishing brushes are held clear of the path of the feed cylinder, means for forcing the polish in the path of the cylinder, and means for adjusting said receptacle whereby the amount of polish taken up by the cylinder can be varied.

6. A shoe polishing machine comprising a shoe support, a supporting track surrounding said shoe support, a plurality of traveling brush carriages engaging said track, means for imparting movement to the carriages, polish applying and polishing brushes, supporting and operating means therefor mounted upon the carriages, a receptacle containing polish constituting the polishing supply, a polish feed cylinder arranged in operative relation with respect to the supply and adapted to be engaged by the polish applying brush whereby the polish is supplied to said brush, means whereby the polishing brushes are held clear of the path of the feed cylinder, means for rotating the polish applying brush when in engagement with said cylinder, means for forcing the polish in the path of the cylinder, and means for adjusting said receptacle whereby the amount of polish taken up by the cylinder can be varied.

7. A shoe polishing machine comprising a main frame, a shoe support, a traveling brush carrier, means for moving said brush carrier around the shoe support, said brush carrying device being provided with a brush supporting device, a rotatable brush carried by said brush supporting device, a stationary polish receptacle supported by said main frame, a polish feed cylinder arranged in operative relation to said receptacle to receive polish therefrom and having portions

in the path of said brush, means for rotating said cylinder, means for rotating said brush while it is in contact with said cylinder and means for rotating said brush while it is adjacent to said shoe support, substantially as described.

8. A shoe polishing machine comprising a main frame, a shoe support, a plurality of traveling brush carriers, and means for moving the same around the shoe support, each of said carriers being provided with a brush supporting device, a polish applying brush carried by one of said brush supports, polishing brushes carried by the other of said brush supports, a polish feed cylinder supported on said main frame, and having portions of its surface located adjacent to the path of said brush carriers, and in the path of the said polish applying brush, means for supplying polish to said cylinder, means for rotating said cylinder, means for rotating said brushes and means for preventing the polishing brushes from coming in contact with said cylinder.

9. A shoe polishing machine comprising among its members a main frame, a shoe support, a traveling brush carrying device, means for moving the same around the shoe support, said brush carrying device being provided with a vertically movable part and a tilting part having a pivotal connection with said vertically movable part, a rotatable brush carried by said tilting part,

means for elevating the said vertically movable part during a portion of its travel, means for rotating the brush, a polish feed cylinder supported by the main frame, and having a portion of its surface in the path of said brush, means for rotating said feed cylinder and means for supplying polish to said cylinder.

10. A shoe polishing machine comprising among its members a main frame, a shoe support, a supporting track surrounding the same, a movable carriage frame mounted on said track, means for propelling said carriage frame on said track, a brush supporting device mounted on said carriage frame provided with a part for actuating the brush, a revoluble brush carried by said brush supporting device, a revoluble polish feed cylinder supported by the main frame adjacent to said track and having a portion of its surface in the path of said brush, actuating means adjacent to the shoe support for engaging the said actuating part of the brush supporting device, and separate actuating means adjacent to said cylinder for engaging said brush actuating part.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JAMES N. WOOD.

Witnesses:

N. LOUIS BOGAN,
RICHARD R. FLORANCE.