931,000.

E. F. STRATTON.

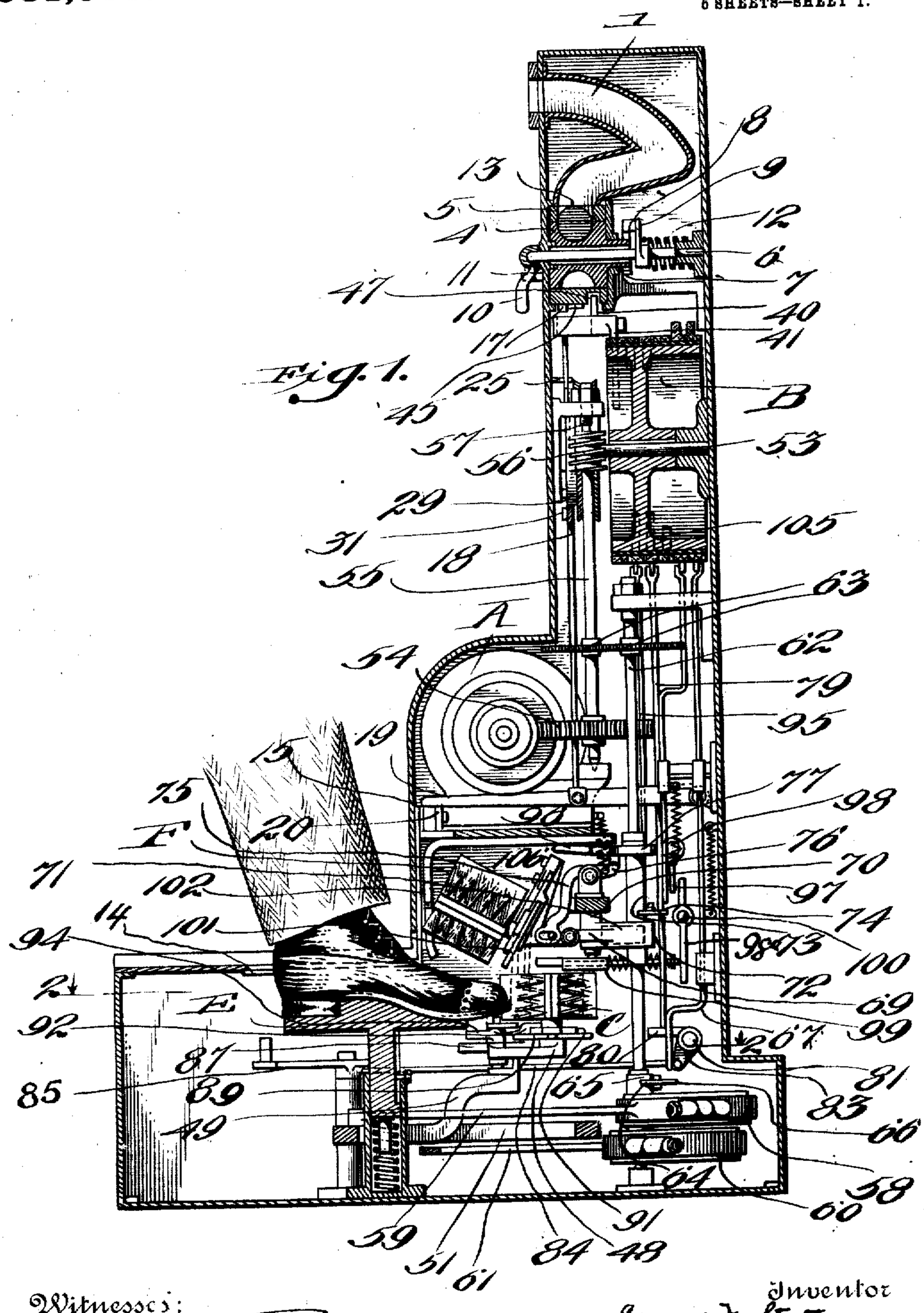
SHOE POLISHING DEVICE.

APPLICATION FILED DEC. 2, 1907.

Patented Aug. 10, 1909.

5 SHEETS—SHEET 1.

Fig. 1.



Witnesses:

Robert W. Ashley

D. E. Hardenbergh, Jr.

Inventor

Edmund F. Stratton.

By his Attorneys Gifford & Bull.

E. F. STRATTON.

SHOE POLISHING DEVICE.

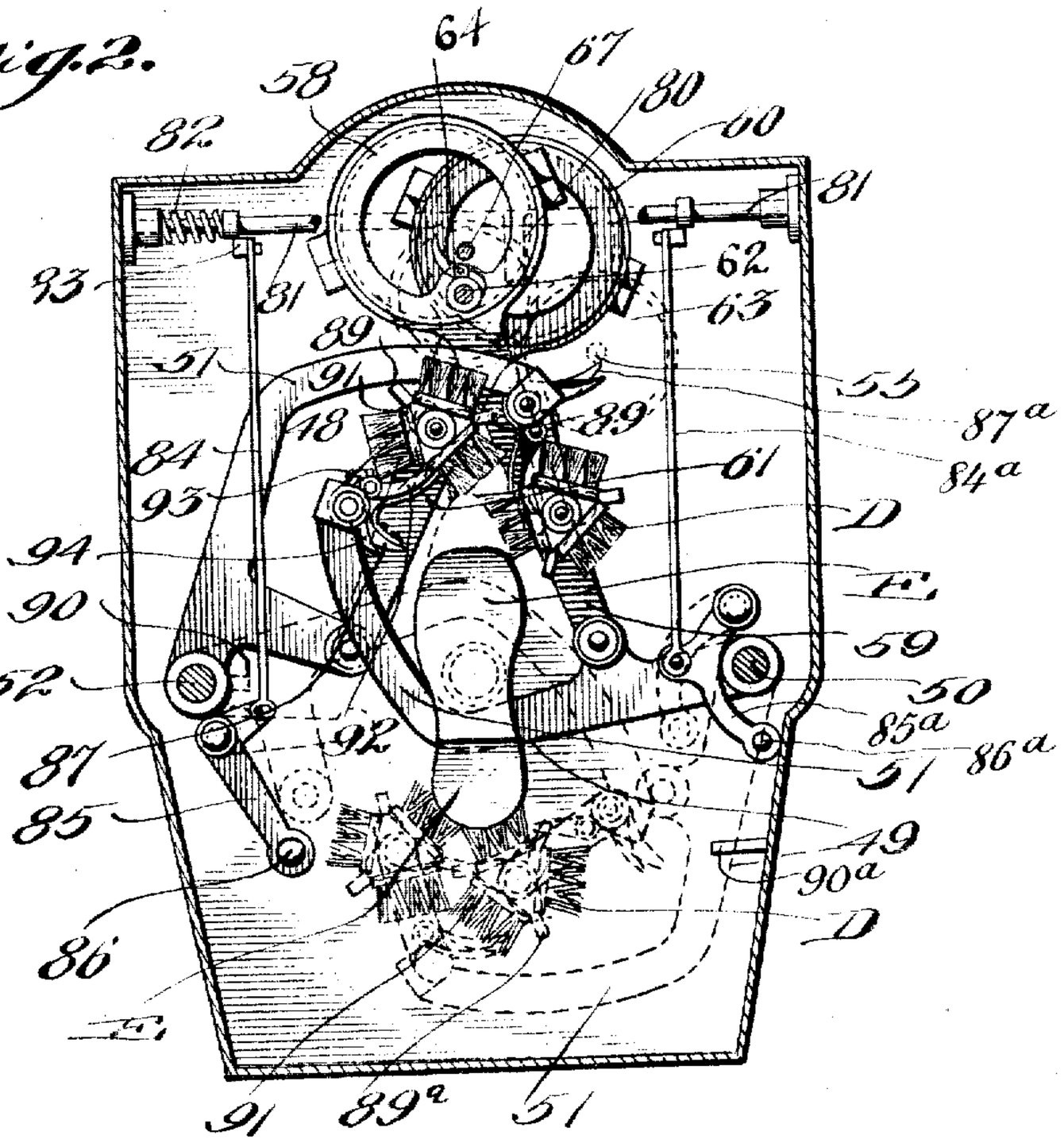
APPLICATION FILED DEC. 2, 1907.

931,000.

Patented Aug. 10, 1909.

5 SHEETS--SHEET 2.

Fig. 2.



Witnesses:

D. C. Hardenbergh, Jr.

Inventor

Edmond F. Stratton

By his Attorneys Gifford & Bull

931,000.

E. F. STRATTON.

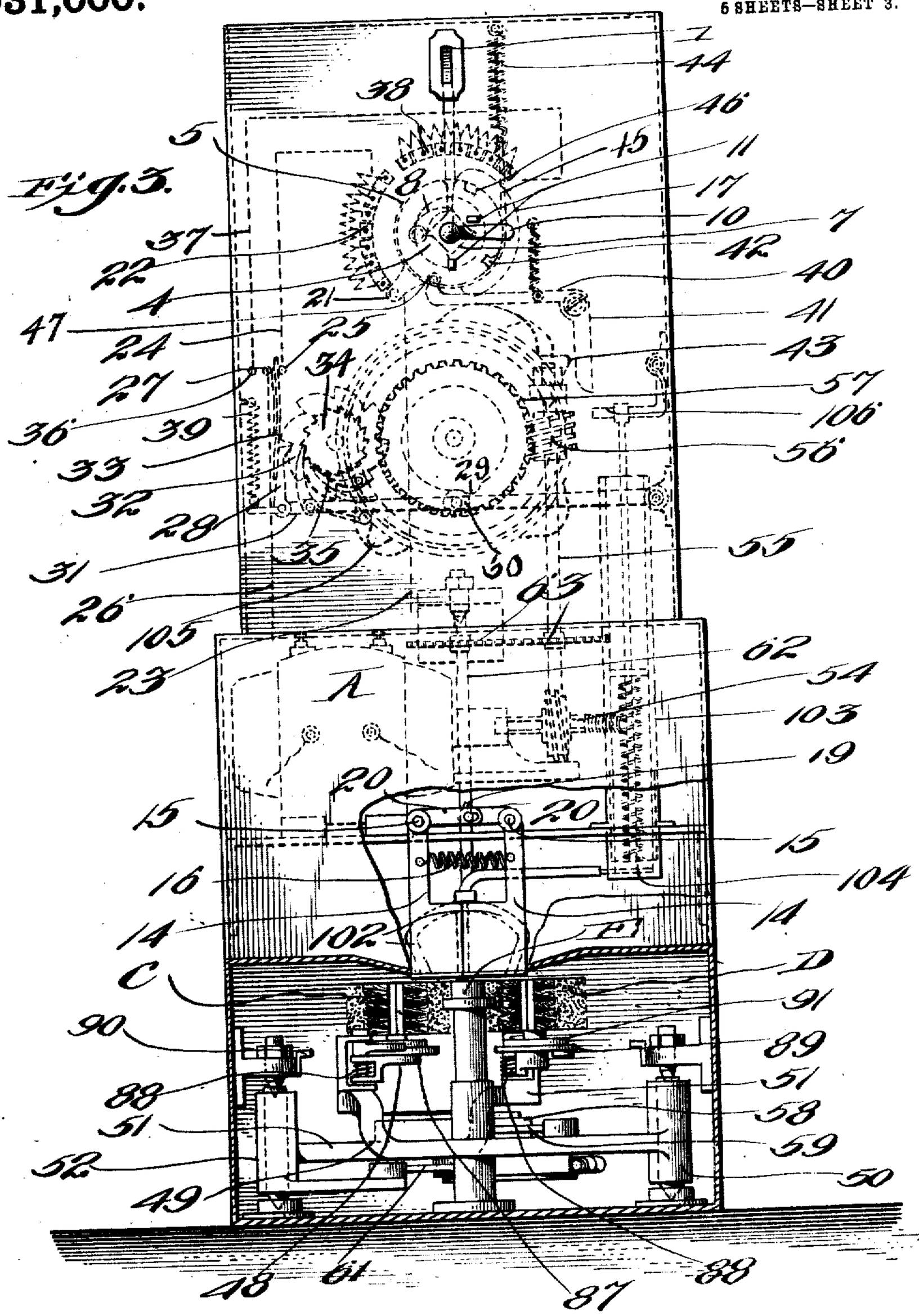
SHOE POLISHING DEVICE.

APPLICATION FILED DEC. 2, 1907.

Patented Aug. 10, 1909.

5 SHEETS—SHEET 3.

Fig. 3.



Witnesses:

J. E. Hardenbergh, Jr.

Inventor

Edmund F. Stratton.

By his Attorneys Jefford & Bull

E. F. STRATTON.

SHOE POLISHING DEVICE.

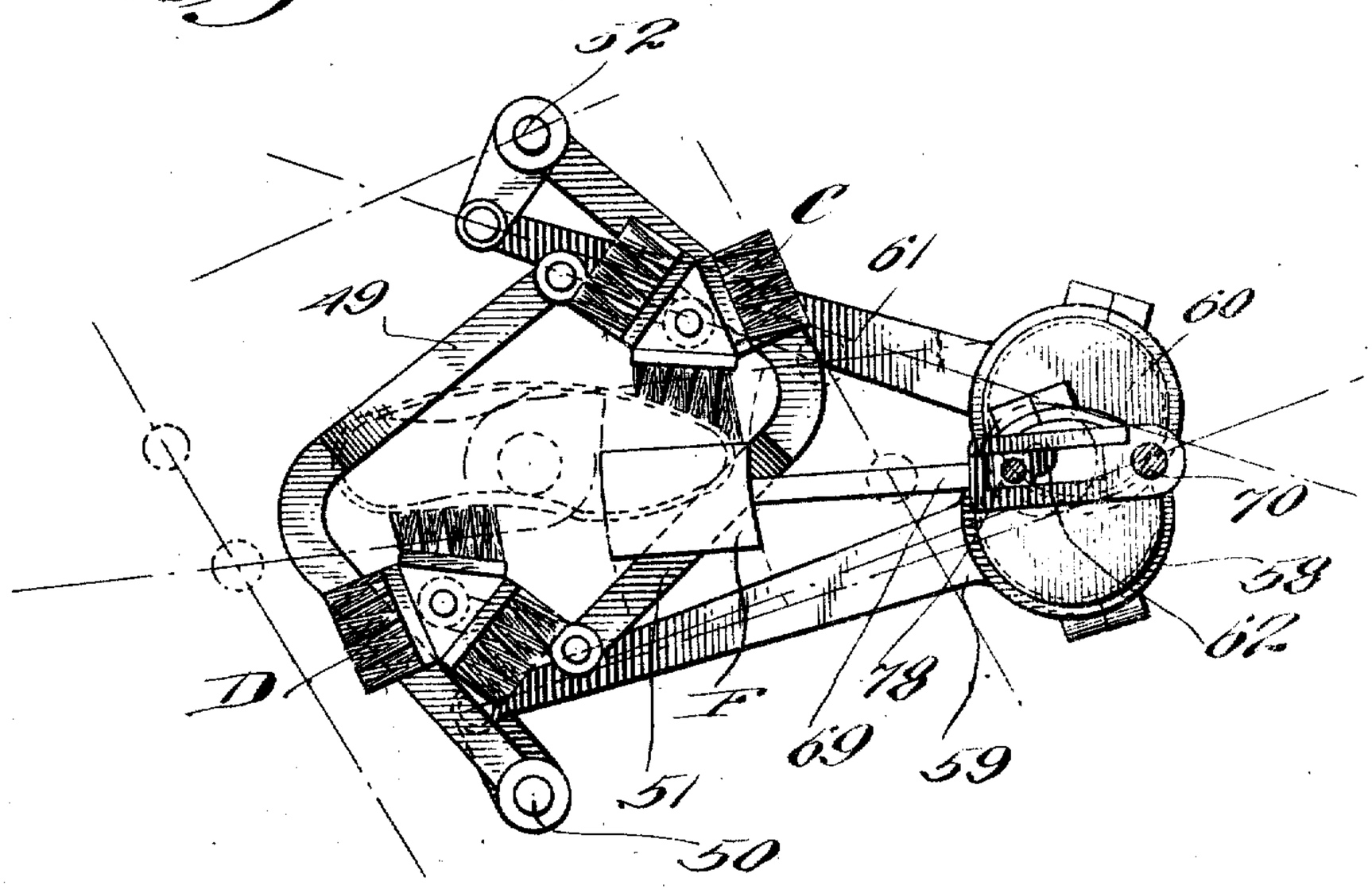
APPLICATION FILED DEC. 2, 1907.

931,000.

Patented Aug. 10, 1909.

5 SHEETS—SHEET 4.

Fig. 4.



Witnesses:

Robert W. Lichley.

D. E. Hardenbergh, Jr.

Inventor

Edmund F. Stratton

By his Attorneys Jefford & Bull

E. F. STRATTON.

SHOE POLISHING DEVICE.

APPLICATION FILED DEC. 2, 1907.

931,000. **Patented Aug. 10, 1909.**

5 SHEETS—SHEET 5.

Fig. 9.

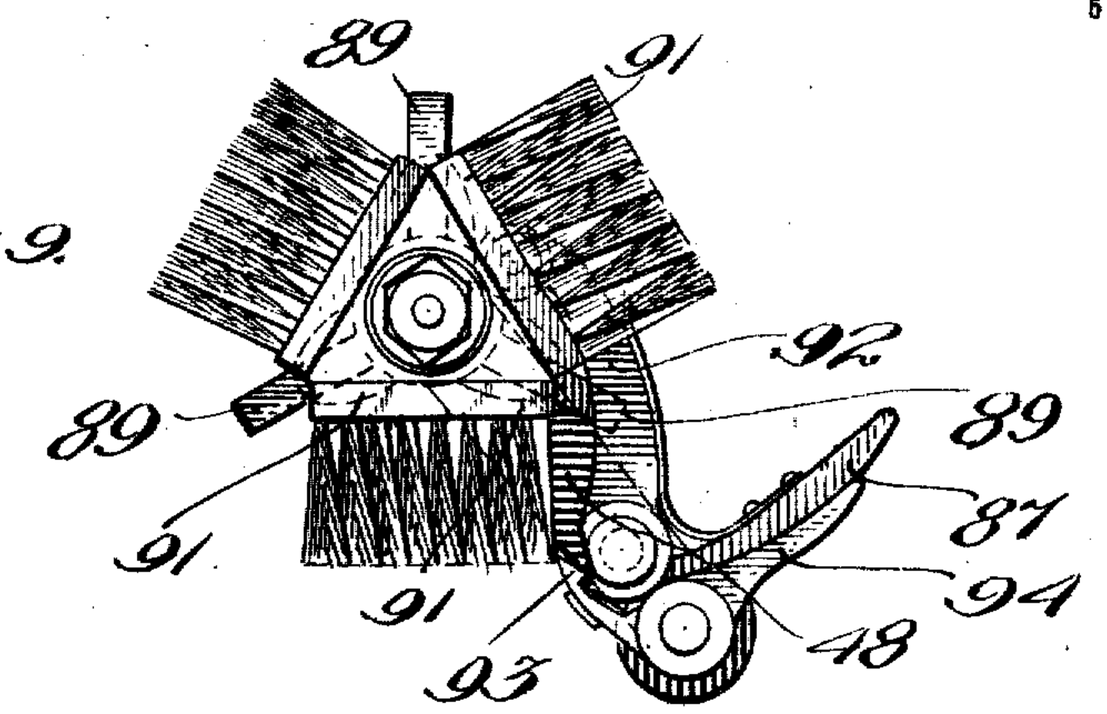


Fig. 10.

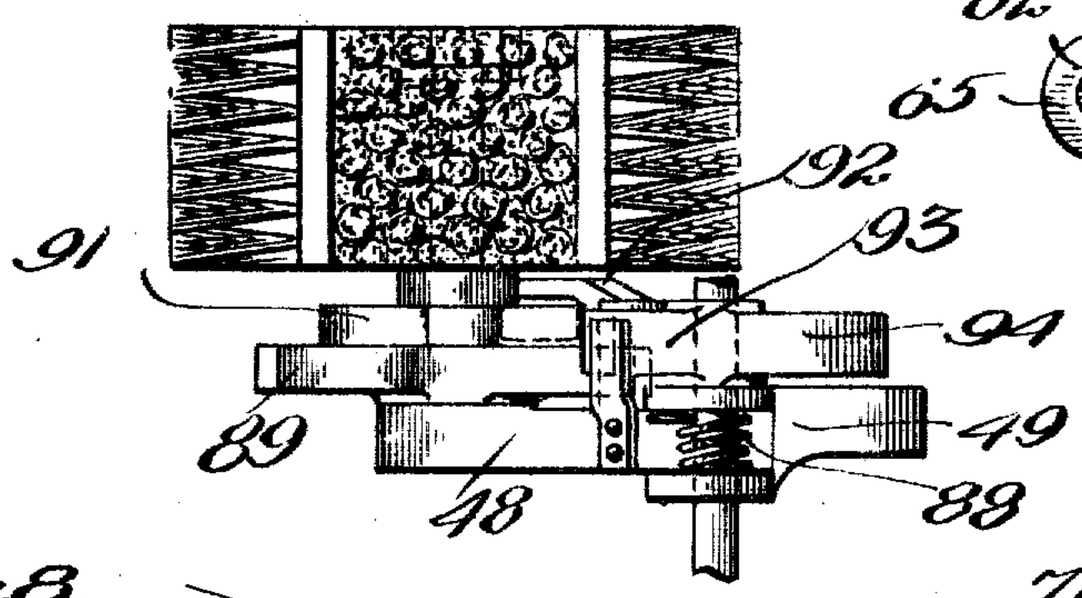


Fig. 7.

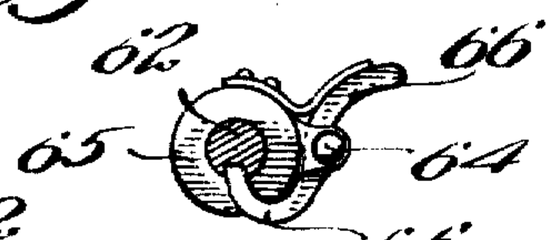


Fig. 8.

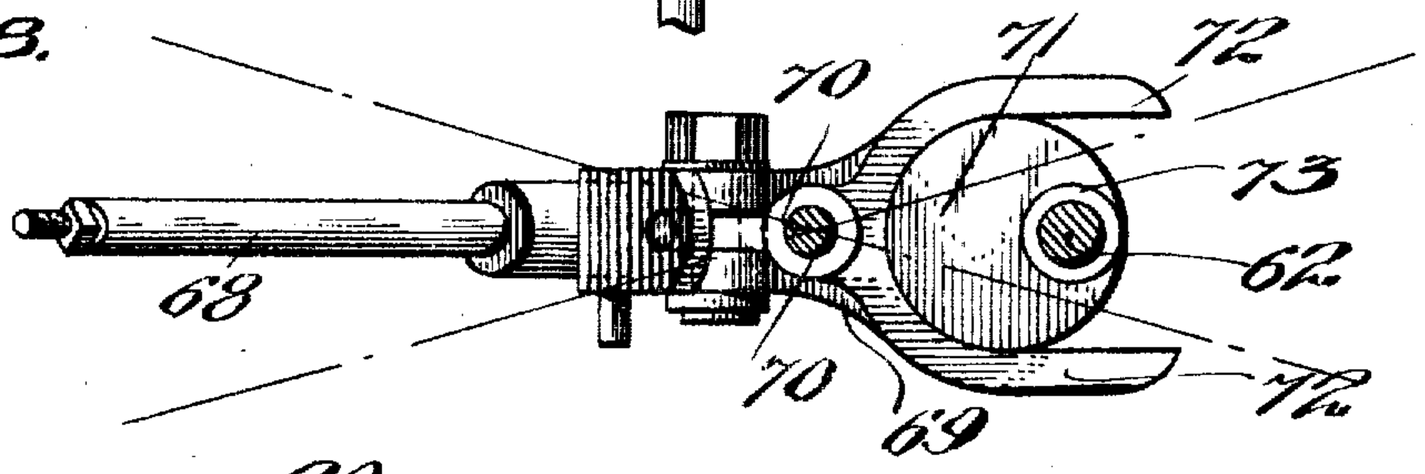


Fig. 5.

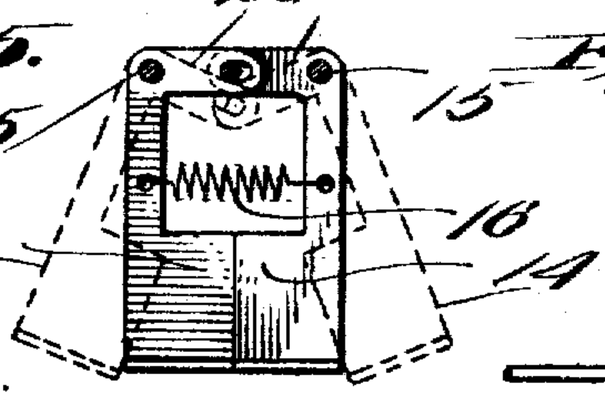
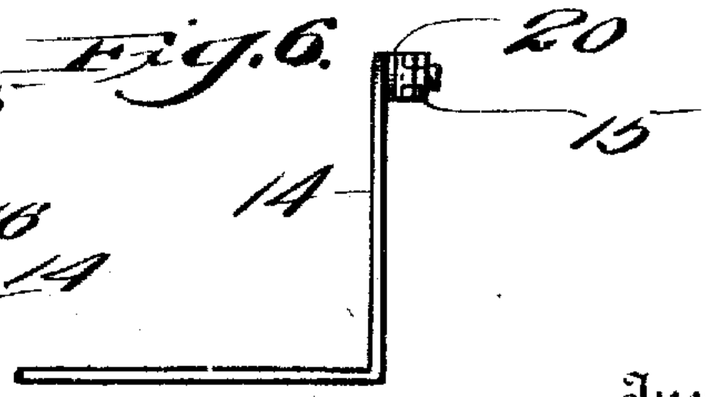


Fig. 6.



Witnesses:

Robert A. Ashley

J. E. Hardenbergh, Jr.

Inventor

Edmund F. Stratton

By his Attorney Jiffard & Bull

UNITED STATES PATENT OFFICE.

EDMOND F. STRATTON, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO HENRY B. OAKMAN, OF NEW YORK, N. Y.

SHOE-POLISHING DEVICE.

No. 931,000. Specification of Letters Patent. Patented Aug. 10, 1909.

Application filed December 2, 1907. Serial No. 404,740.

To all whom it may concern:

Be it known that I, EDMOND F. STRATTON, a citizen of the United States, and a resident of New York city, borough of Manhattan, in the county of New York and State of New York, have invented certain new and useful Improvements in Shoe-Polishing Devices, of which the following is a specification.

It is well known that many efforts have been made to substitute automatically operated mechanical means for the prevalent method of cleaning and polishing shoes by hand and it is my purpose to provide a mechanical device whereby such operation may be effected and wherein the various cleaning and polishing brushes will be moved as though operated by hand with the advantages of increased speed, uniform pressure of brushes upon the shoe at all times and cleanliness.

My invention consists in the construction, combination and arrangement of parts set forth in and falling within the scope of the appended claims.

In the accompanying drawings like characters of reference refer to like parts in all the figures.

Figure 1 represents a sectional view in side elevation of my improved device; Fig. 2 represents a plan view in section taken through the line 2—2 of Fig. 1, in the direction of the arrow; Fig. 3 represents a view in front elevation, the lower part of the view being in section and the mechanism of the device in the remaining portion being shown in dotted outline; Fig. 4 represents an enlarged plan view of a modified form of brush carriers; Fig. 5 represents an enlarged detail front view of the shutters closing the entrance to the machine; Fig. 6 represents an enlarged detail side view of a shutter; Fig. 7 represents a detail top view of a clutch through which the side brush eccentrics are driven; Fig. 8 represents a detail top view of the mounting of the upper brush; Fig. 9 represents a detail top view of a side brush and the means governing its rotation; Fig. 10 represents a detail side view of the brush shown in Fig. 9.

Turning now to a description of the figures in detail, attention will first be directed to the coin device and its attendant trains of mechanism, including the motor for the operation of the device, in connection with Figs. 1 and 3.

A coin chute 1, leads to a coin pocket formed by the registering of a recess in the drum 4 and a slot in the sleeve 5, which surrounds drum 4 (see Figs. 1 and 3) under the chute 1, this being the normal position of parts when the device is ready for operation. The drum 4 is extended on one side to form a ratchet wheel 7. A pawl 8 pivotally mounted on arm 9 carried by the spindle 6, engages with the ratchet wheel 7 upon the clock-wise rotation of a handle 10 secured to the other end of the spindle 6, outside of the casing of the machine. The rotation of the handle 10 is limited to a quarter revolution by stops 11, and the return movement of the handle when released after such quarter revolution is secured by means of a helical spring 12 around the inner end of the spindle 6, the pawl 8 then riding over the teeth of the ratchet wheel 7. No coin 13 having been inserted a turn of the handle 10 will merely revolve the drum 4 inside the sleeve 5 and bring another recess in the drum 4 into register with the slot in the sleeve 5; but upon the insertion of the coin 13 the sleeve 5 will revolve with the drum 4 and effect two results, namely, the opening of an aperture for the insertion of a shoe to be operated upon and the starting of an electric motor A. The aperture for the insertion of a shoe is located near the base of the machine and is normally closed by shutters 14 (see Figs. 3, 5 and 6) pivoted at 15 at the tops of prolongations of the outer edges and held together by the spring 16. The shutters 14 are opened by the pressure of a cam 17, mounted on and brought in position by the rotation of the sleeve 5, on a vertical rod 18 resulting in the downward movement of a pivoted lever 19, a depression of the arms 20 of shutters 14 by the outer end of lever 19, and a swinging open of shutters 14 upon pivots 15. The shutters 14 will remain open as long as the cam 17 presses on the rod 18 it being disengaged by the counter clock wise rotation of the sleeve 5 at the end o the operation of the machine, as will here after be described. The construction of th shutters 14, spring 16, pivots 15 and arms 9 is shown in detail on an enlarged scale i Fig. 5. The motor A will be started by the closing of a circuit by the rotation of an

arm 21 upon the movement of the sleeve 5 to which it is secured. A contact on the arm 21 in sweeping along a rheostat 22 will gradually subject the motor to the full potential of the electric current through a circuit which comprises a lead 23 from the motor to the arm 21, a lead 24 from the rheostat 22 to a contact 25 and a lead 26 from a contact 27 to the motor A. The gap between the contacts 25 and 27 is shown bridged by a pair of springs carried on a pawl 28 so that when the arm 21 is moved clockwise from the position shown, the motor will be started and the various shoe cleaning and polishing operations to be presently more particularly described will commence. When those operations have been completely performed and a cam-drum B, to be hereafter described, is about to complete a revolution, a cam 29 mounted at the front of the casing on the shaft of said drum, through a roller 30, mounted on lever 31 depresses the lever 31 which carries a spring-pressed pawl 32 in addition to the before-mentioned pawl 28. (See Fig. 3.) The thrust of the lever 31 away from the cam-drum B will cause the withdrawal of the spring-contacts on the pawl 28 from between the fixed contacts 25 and 27. At the same time the pawls 28 and 32 will ride on the surface of a tooth formed on a wheel 33 and entirely over a tooth formed on a ratchet-wheel 34 respectively, these two wheels being secured together and prevented from moving counter clockwise by a detaining click 35. The downward movement of the pawl 28 will cause it to be thrust away from the center of the wheel 33 by engaging with a portion of a tooth of greater radius. In this altered position the spring-contacts on the pawl 28 will be directed toward the interval between contact 27 and another fixed contact 36 which is electrically connected by a lead 37 with a second rheostat 38. On the return movement of the lever 31 and its pawls 28 and 32 under the action of a spring 39, after the cam 29 has passed the roller 30, the pawl 32 will actuate the two wheels 33 and 34 which will rotate together and the spring contacts on the pawl 28 will be inserted between the fixed contacts 27 and 36. By the above described withdrawal of the spring contacts from between contacts 25 and 27 the electric circuit will be broken, and the motor will come to rest.

During the cleaning and polishing operations which follow the setting in action of motor A the sleeve 5 will be retained in the position to which it has been brought by the quarter revolution of the handle 10, against the pull of a spring 44 transmitted through a strap 45, and the arm 21 will consequently remain in contact with the rheostat 22, by two sets of means. First, by the coin 13 which precludes the counter clockwise revolution of sleeve 5 without like movement of the drum 4, which latter is prevented by the pawl 8, ratchet-wheel 7, and upper stop 11, to a position against which latter the handle 10 is returned upon being released, by the spring 12. The second means of detaining sleeve 5 in the set position, and the only means during the above mentioned return of the handle 10 to the upper stop 11, comprises a bell-crank lever 40, 41, the end of the arm 40 of which rests in a notch 42 formed in the sleeve 5.

On the cam-drum B is provided a cam 43 which is adapted, once per revolution of drum B to engage with arm 41 and force the end of the arm 40 out of engagement with the notch 42 formed in the sleeve 5. When on the completion of the cleaning and polishing operations this disengagement occurs, the coin 14 and the ratchet-and-pawl elements 7 and 8 and the upper stop 11 will temporarily serve as the only means for preventing the return of the sleeve 5.

The cleaning and polishing operations having been once completed, the motor can be re-started to operate a second time by turning the handle 10 a second time through a quarter of a revolution. By the same coin 13 the arm 21 will be conveyed into contact with the second rheostat 38 and an alternative electric circuit through the motor A will be completed along the lead 23, arm 21, rheostat 38, lead 37, fixed contact 36, through the spring contacts on the pawl 28, to the fixed contact 27 and thence through lead 26 to the motor A.

At the end of the second quarter revolution of the handle 10 the extremity of the arm 40 will engage with another notch 46 and the sleeve 5 will be retained in the newly set position during the backward motion of the handle 10 and also subsequently, during the second cleaning and polishing operations, for the pocket containing the coin 13 having become inverted the coin will drop therefrom, having performed its function.

On the completion of the second operations the cam drum B will have completed a second revolution at the end of which the spring contacts on the pawl 28 will have been withdrawn from between the fixed contacts 27 and 36 and re-inserted between contacts 27 and 25 in preparation for the completion of the alternative circuit for the first of the succeeding cycle of two cleaning and polishing operations. Also on the completion of the second revolution of the cam-drum B the bell-crank lever 40, 41 will be again displaced by cam 43, and now there being no coin in the pocket the disengagement of the extremity of arm 40 from the notch 46 will permit the spring 44 to return the sleeve 5 and arm 21 to their initial positions to enable another double cycle of cleaning and polishing operations to be performed. The return

of sleeve 5 will cause the shutters 14 to close, through cam 17 ceasing to press on rod 18.

After the sleeve 5 has again reached its initial position the extremity of arm 40 will insert itself in a notch 47 whereby it will be retained against accidental displacement, as for instance, by a turn of the handle 10 when the pocket contains no coin. One side of each of the notches 47 and 42 is rounded to permit the extremity of arm 40 to be thrust outward when the handle 10 is rotated with a coin in the pocket. (See Fig. 3.)

As hereafter stated, it may under some circumstances be desirable that a second coin be inserted to initiate the second cycle of operations. In such a case the coin-freed device and the electric circuit closing contrivance will be of a more simple character.

Before turning to a description of the operation of the brushes in cleaning and polishing an inserted shoe, I will describe the cam-drum B mounted on and revolved with the shaft 53, at the back near the upper end of the machine casing, a gear wheel 54 on the shaft 55 being operated by the motor, and a worm 56 at the upper end of the shaft 55 acting upon a gear wheel 57 secured to the shaft 53; the gearing being such that the drum B will revolve at a comparatively slow rate of speed. Upon the drum B there are mounted various cams of which 43 and 29 have been heretofore described, and the operation of the remaining members of which will be hereafter set forth. The cams are so disposed and the rate of rotation of the drum B so regulated that the various cleaning and polishing operations will be completed upon the completion of one revolution of the drum B.

There are three sets of brushes each comprising three members. One set C, adapted to operate on the left hand side of a boot, is pivotally mounted on a wrist-link 48 pivotally carried at the extremity of a bent arm 49 which latter is pivotally mounted at 50 to the right-hand portion of the base of the stand. The set of brushes D is similarly mounted on an arm 51 oppositely pivoted at 52, except that the latter arm reaches around the toe end of the foot rest E, whereas the arm 49 reaches around the heel end of the rest. (See Fig. 4.) The reciprocating elliptical movements of these sets of brushes in a horizontal plane are effected by means of eccentrics 58 and 60 through the medium of eccentric rods 59 and 61 respectively. These eccentrics are mounted on a shaft 62, driven from the shaft 55 by intermeshing gears 63, and are normally driven therefrom by a clutch 64. The details of the clutch 64 are shown on an enlarged scale on Fig. 7; the sleeve 65 to which the eccentrics are secured is normally united to the shaft 62 by the spring-pressed arm 66 pivoted on sleeve 65 and therefore normally rotating with the shaft 62. By the interposition of a rod 67 in the path of the projecting end of the arm 66 this latter will be drawn out of engagement with the shaft 62 and the rotation of the eccentrics will be arrested. The downward displacement of rod 67 will be effected by a cam on the drum B at a determined time; and prior to this disengagement, the brushes will preferably be drawn away from proximity to the shoe in a manner to be presently described.

By reference to Fig. 2 it will be observed that the brushes C and D operate on the sides of the boot nearly opposite one another so that there will be but little tendency to displace the foot from the rest on account of the pressure of the brushes, but for the purpose of allowing each brush to sweep around the toe and heel of the shoe without clashing the eccentrics are so set that the stroke of one brush is a little in advance of the other.

The upper surface of the shoe is operated on by a set of brushes F pivotally mounted on a pivoted branch 68 of a swinging arm 69 (Fig. 8) mounted on a vertical pivot 70 and swung in a horizontal plane by an eccentric 71 which fits between the jaws 72 of the arm 69. The eccentric 71 is secured to a sleeve 73 mounted on the shaft 62 and adapted to be normally secured thereto and driven therefrom by the clutch 74, the construction of which is like that of clutch 64. The branch 68 which carries the set of brushes F is so pivoted to the arm 69 as to be adapted to rise and fall with each rotation of the shaft 62, the brushes being lifted by a two-armed lever 75 and 76, when the arm 76 is depressed by a cam provided on the under surface of a cam-plate 77 secured to the sleeve 73. The cam on cam plate 77 is so situated relatively to the eccentrics 58 and 60 as to cause the set of brushes F to lift out of the way of the brushes C and D when they approach the front portion of the shoe the brushes F descending to perform their duty on the upper surface of the shoe when the brushes C and D recede toward the heel.

In Fig. 4 is shown a modified form of construction of the brush carrying and operating members, whereby without requiring the brushes F to rise and fall on each revolution of the shaft 62, the action of the brushes on the shoe in respect to any tendency to displace the foot from the rest will still be partially balanced. In this construction the brushes F (two are omitted from the figure for the sake of clearness) have their swing so timed that they do not get to the left-hand side of the shoe until the brushes C have receded from the front portion of the shoe and do not return to the right-hand side until the brushes D, after completing their forward stroke have receded out of the way. The resultant effect of the action of the brushes F

taken in conjunction with the side pressures of the brushes C and D will not produce any large amount of tendency to displace the foot laterally while by keeping the brushes F always at work there will be a considerable saving of time, or improvement in the cleaning and polishing operations. This modification of the construction consists in cranking the shaft 62, the crank pin being inclosed within a block 78 which fits a slotway formed in the brush carrying arm 69 which is pivoted at 70. In Fig. 4 the parts are shown in an intermediate position of action in full lines, extreme positions being indicated by dash-dot center lines. After the first brush of each of sets C, D, and F in contact with the shoe have performed their cleaning operation for a suitable length of time, another brush of each set is turned into contact with the shoe, which operation will first be described in connection with set C, Fig. 1. At the determined time a suitably situated cam on the drum B thrusts downward a rod 79 which depresses a lever 80 pivotally mounted on a spindle 81. The consequent rotation of the spindle against the force of a helical spring 82 (Fig. 2) causes a downward extending arm 83, by means of a rod 84 to bring into action a device for switching the set of brushes C away from the shoe and rotating them about their pivot so that another brush becomes presented toward the shoe. The switching device comprises a bell-crank lever 85 bearing an upstanding pin 86 at the extremity of one of its arms. At the determined moment this pin is by means of the rod 84 drawn into the path of a lever-arm 87 which is formed in one with the previously mentioned wrist-link 48 which carries the set of brushes C.

Referring to Figs. 9 and 10 it will be seen that the wrist link 48 is normally so pressed by a helical spring 88 as to cause one of the brushes to be forced into yielding contact with the shoe, and when the lever-arm 87 comes into contact with the pin 86 (Fig. 2) the brushes will be forced outwardly from the shoe. The continued movement of the brushes around the pivot 50, in the outwardly displaced position, will cause the engagement of one of three teeth 89, formed on the socket which carries the brushes C, with a projecting spur 90 formed on, or secured to, the bracket which carries the pivot 52. Such engagement of one tooth 89 with spur 90 will, by the continued outward swing of the brushes C, cause the latter to be rotated through one third of a revolution and bring a second brush into position to operate on the shoe. The cam which caused the rotation of the spindle 81 having passed out of action the pin 86 will be withdrawn from its operating position by means of the spring 82.

Before proceeding further, the means for determining the true amount of rotation of the brushes will be explained with reference to Figs. 9 and 10. Secured to the brush socket is a three-leaved cam 91 and pivoted on the wrist-link 48 is a spring-pressed roller-carrying pawl 92 which tends, after each partial rotation of the set of brushes to seat itself at the bottom of the recess between two leaves of the cam 91. There is also a spring-pressed hook 93 mounted on the pivot of the wrist-link 48 and having formed integral therewith a trigger 94. In the normal position of hook 93 and trigger 94 the hook 93 will engage with a notch formed in the boss of the pawl 92 and prevent the pawl from being thrust outward. When the brush is to be changed, the above described pin 86 will, previously to making contact with arm 87, press the trigger 94 and disengage the hook 93.

The switching device for presenting successive brushes of the set D toward the shoe comprises the curved lever 85^a bearing at its extremity the upstanding pin 86^a. At the determined moment the pin 86^a is, by means of rod 84^a, operated in the manner described in connection with rod 84, drawn into the path of a lever-arm 87^a formed integral with a wrist link 48 which carries the set of brushes D, the wrist link 48 being normally pressed by a helical spring 88 to cause one of the brushes to be forced into yielding contact with the shoe, parts 48 and 88 being identical with like parts as described in connection with brushes C and shown in Fig. 10. Upon the contact of arm 87^a with the pin 86^a the brushes D will be forced outwardly from the shoe, and the continued movement of the brushes around the pivot 52 will cause the engagement of one of the three teeth 89^a, formed on the socket which carries the brushes D, with a projecting spur 90^a formed on or secured to the wall of the casing. Such engagement of one tooth 89^a with spur 90^a will cause the brushes D to be rotated to bring a second brush into position to operate on the shoe. The pin 86^a will be withdrawn from its operating position by means of spring 82 when the cam which has caused the rotation of spindle 81 passes out of action. The means for determining the true amount of rotation of the brushes D are identical in construction and operation with the parts 91–94 as described in connection with brushes C and shown in Figs. 9 and 10.

To change the brushes F a cam on the drum B depresses a rod 95 (see Fig. 1) which bears upon and depresses a horizontal forwardly extending lever 96 pivoted at 98. At the same time a vertical downwardly extending lever 97 on the same pivot 98 is swung backward engaging with the upper portion of a vertical arm 98^a pivoted at 100

and causing the lower portion thereof to be swung forward and to push toward the brushes F a rod 99; this rod 99 being held and guided in a bracket at the bottom of the bearing of arm 69. The extremity of the rod 99 engages on the sweep of the brushes with one of the teeth 101 and turns the brushes F through one-third of a revolution. Simultaneously the extremity of the lever 96 contacts with a trigger arm and disengages the retaining hook of the brushes F, to permit of their being revolved the construction and operation of these parts being that described in connection with the corresponding parts as applied to brushes C and D.

Immediately after the first change of the brushes, a small supply of liquid blacking is sprayed in three jets on to the sides and upper portion of the shoe through the branches 102 connected with cylinder 103, (Figs. 1 and 3) and immediately distributed over the surface of the boot by the second brush of each of the three sets. The blacking is contained in the tall cylinder 103 which is fitted with a spring pressed piston 104. Grooves are formed in the side of the cylinder except near the bottom for the purpose of allowing on each stroke some of the liquid above the piston to find its way below. The blacking is supplied at the right moment by the engagement of a cam 105 on the drum B with a lever 106 which is connected to the piston 104. On lifting the lever 106 the piston will be raised against the force of the spring and on the instant the lever is released the piston will be abruptly thrust downward and a measured quantity of the liquid blacking ejected.

After a sufficient number of strokes of the second brush of each set, or the blacking brushes, other cams on the drum B repeat the downward thrust on the before-mentioned rods 79 and 95 and cause the sets of brushes C, D and F to revolve through another one-third of a revolution whereby the third of each set, or the polishing brushes, will be brought into operation and, after they have performed their duty, a third set of cams on the drum B will once more rotate the sets of brushes through one-third of a revolution and reinstate the first of each set of the cleaning brushes in position for action in readiness for performance on the next boot, after which the machine will come to rest with the brushes out of contact with the shoe.

It will be seen from the foregoing description that my invention comprises three sets of brushes, containing three members each, the corresponding members of each set successively performing the operations of cleaning, blacking and polishing, an inserted shoe; the brushes are driven from the motor at any desired rate of speed, the changes, adjustments, and supply of blacking being governed by the operation of various rods, levers and connections upon contact with positioned cam members mounted on a drum driven counter-clockwise from the motor at a reduced speed. Also the foregoing description has provided for two operations of the device upon the insertion of one coin, there being an interval between such operations, but by a simplification of the mechanism it may readily be arranged that each separate operation shall require the insertion of a coin for its inception.

Having thus described my invention, what I desire to secure by Letters Patent is:—

1. In a shoe polishing device, in combination, reciprocating brushes adapted to operate longitudinally of a shoe inserted in said device, an upper brush adapted to operate from above transversely of and in contact with said shoe, means for operating all of said brushes, and means for elevating said upper brush out of contact with the shoe at a predetermined time.

2. In a shoe polishing device, in combination, reciprocating brushes adapted to operate in yielding contact with a shoe inserted in said device, a brush adapted to operate from above on the shoe, means for operating the brushes, and means for withdrawing each of the brushes from contact with the shoe at a predetermined time.

3. In a shoe polishing device in combination reciprocating arms, brush supports pivotally mounted on said arms, and adapted to operate in yielding contact with a shoe inserted in said device, a brush adapted to operate transversely of said shoe, means for operating the brushes and means for turning said brush supports upon their pivots to withdraw the brushes from contact with said shoe.

4. In a shoe polishing device, in combination, reciprocating brushes adapted to operate on a shoe inserted in said device, a brush adapted to operate from above on the shoe, means for operating the brushes, means for withdrawing the brushes from contact with the shoe, means for supplying blacking to the surface of said shoe after said withdrawal, and means for returning the brushes into contact with the shoe.

5. In a shoe polishing device, in combination, brushes adapted to operate on a shoe inserted in said device, means for operating the brushes, means for withdrawing the brushes from contact with the shoe at a predetermined time, means for returning the brushes into contact with the shoe, and means for changing the contacting face of each of the brushes after said withdrawal and before said return.

6. In a shoe polishing device, in combination, a plurality of brushes adapted to operate on a shoe inserted in said device, means

for operating the brushes, means for withdrawing the brushes from contact with the shoe during said operation, said withdrawing means comprising a plurality of rods adjacent said brushes, a revolving member adjacent one end of said rods and a plurality of positioned cams carried by said revolving member, said cams being adapted to contact with said rods to operate the same at predetermined times.

7. In a shoe polishing device in combination, a brush adapted to operate in contact with a shoe inserted in said device, means for operating the brush and means for withdrawing the brush from contact with the shoe during said operation, said withdrawing means comprising a pin adapted to be moved into the path of travel of the brush, and means for operating the pin comprising a lever, a connection between the pin and the lever, a rod adapted to contact with the lever when depressed, a revolving member adjacent one end of said rod, and a cam carried by said revolving member and adapted to contact with and to depress said rod at a predetermined time.

8. In a shoe polishing device, in combination, a vertical shaft adapted to be revolved, a sleeve on said shaft, a clutch member carried by said sleeve and adapted to engage with the shaft, an eccentric mounted on said shaft and secured to said sleeve, a pivoted supporting arm, a brush mounted on said arm, a connection between said arm and the eccentric, and means for operating the clutch member to move it into and out of engagement with said shaft.

9. In a shoe polishing device, in combination, brushes, means for operating the brushes, a casing inclosing said brushes and said means, said casing being provided with an aperture adjacent the brushes, pivoted shutters adapted to close said aperture, means for swinging said shutters on their pivots to open the aperture, said means comprising oppositely extending arms secured to said shutters at their pivot points, a pivoted lever resting on the free ends of said arms, and means for operating said lever to depress said arms.

10. In a shoe polishing device a casing, a foot rest in the casing, a reciprocating arm pivoted adjacent said rest, a pivoted support on said arm, a brush on said support adapted to operate in contact with a shoe placed on the rest, and means for changing the contacting face of the brush, said means comprising a lever arm projecting from said support, a pivoted stop member adjacent the path of travel of said projecting lever, and means for turning the pivoted stop member to a position in said path of travel.

11. In a shoe polishing device a casing, a foot rest in the casing, a reciprocating arm pivoted adjacent said rest, a pivoted support on said arm, a brush pivoted on said support and adapted to operate in contact with a shoe placed on the rest, and means for changing the contacting face of the brush, said means comprising a lever arm projecting from said support, a pivoted stop member adjacent the path of travel of said projecting lever and adapted to contact with said lever to turn the support on its pivot, a tooth projecting from the brush and a fixed spur adjacent the path of travel of the brush and adapted to contact with said tooth upon the operation of the stop member to turn said support.

12. In a shoe polishing device adapted for the insertion of a shoe, a brush provided with a plurality of faces and adapted to travel lengthwise of an inserted shoe in contact therewith, means for removing the brush from contact with the shoe at a predetermined time during its operation, means for turning the brush to present another face toward the shoe after said removal, means for returning the brush into contact with the shoe after said turning, and means for operating the brush.

13. In a shoe polishing machine adapted for the insertion of a shoe, a brush provided with a plurality of faces adapted to move transversely of the upper face of an inserted shoe in contact therewith, means for turning the brush to change the contacting face during its operation, and means for operating the brush.

In testimony whereof I have hereunto signed my name to this specification in the presence of two subscribing witnesses.

EDMOND F. STRATTON.

Witnesses:
W. O. Pauling,
T. E. Hardenbergh, Jr.