No. 837,720. PATENTED DEC. 4, 1906.

G. A. PLINOS.

BOOT POLISHING MACHINE.

APPLICATION FILED JAN. 8, 1906.

3 SHEETS—SHEET 1.

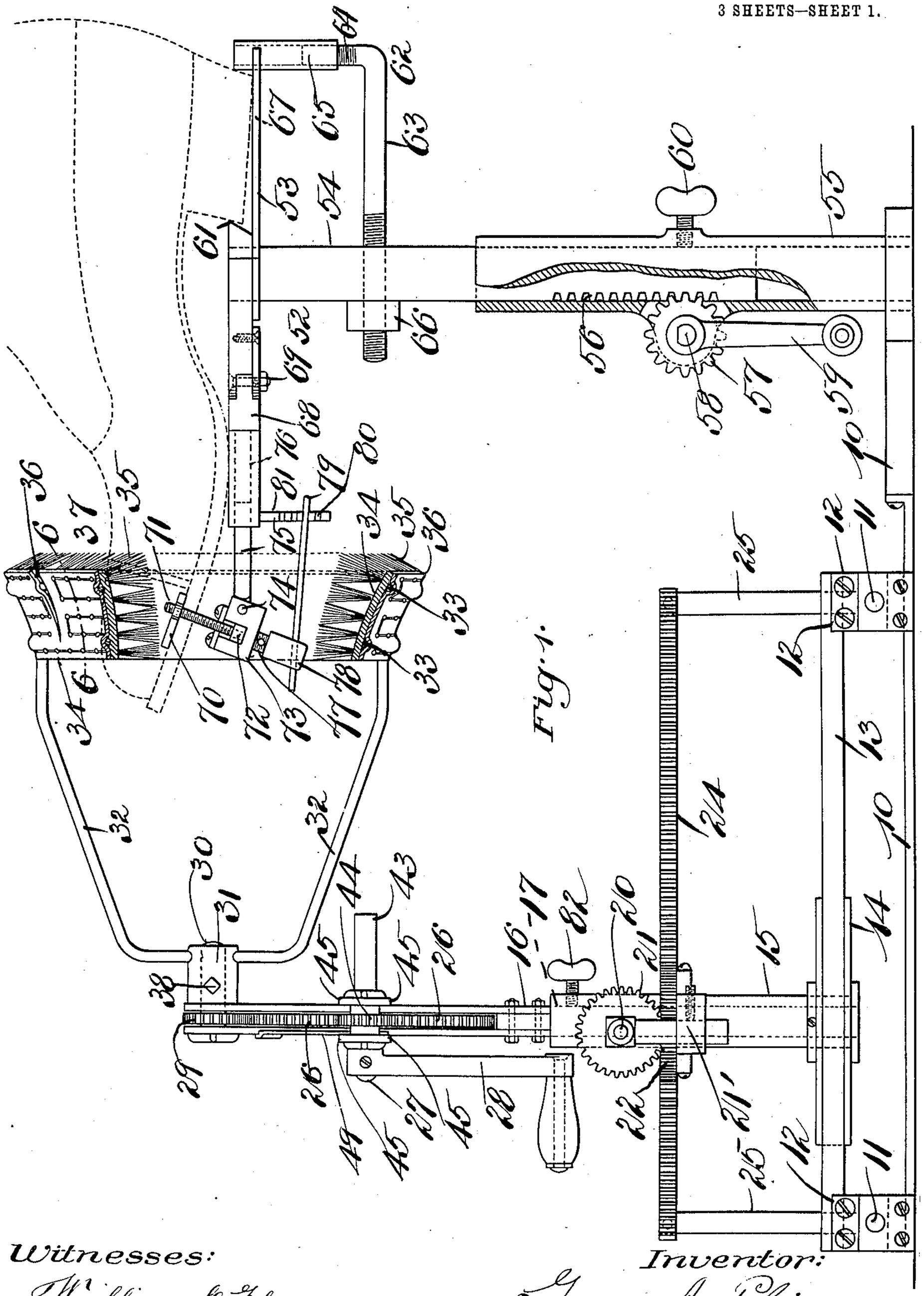

Fig. 1.

Witnesses:
William C. Glass.
Ernest A. Telfer.

Inventor:
George A. Plinos,
by his attorney, Charles J. Fooding.

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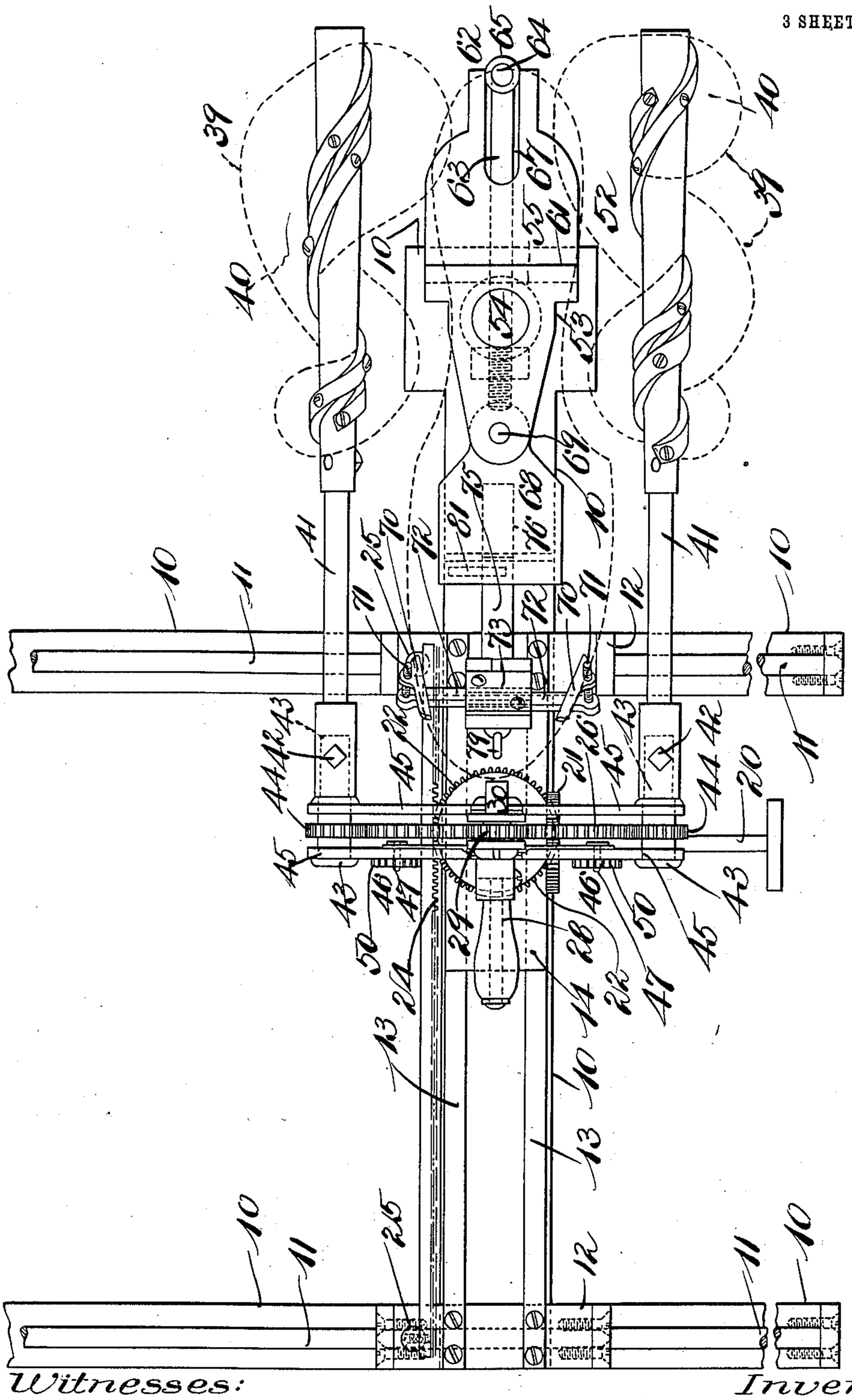

Fig. 2.

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3 SHEETS—SHEET 3.

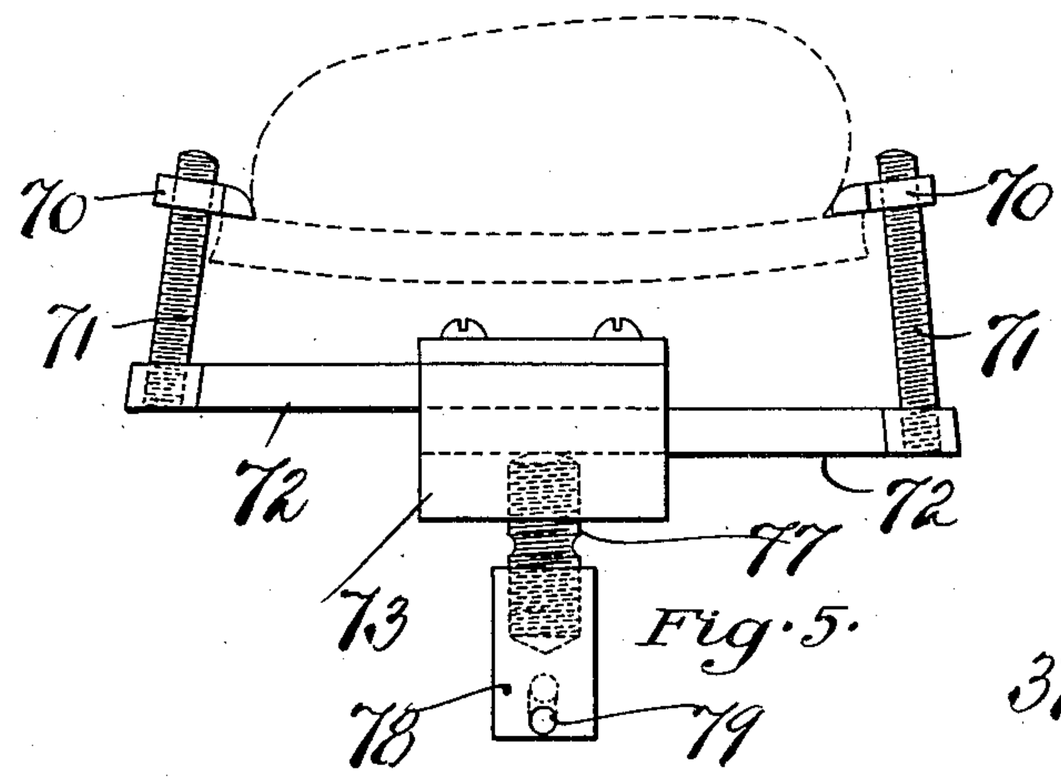


Fig. 5.

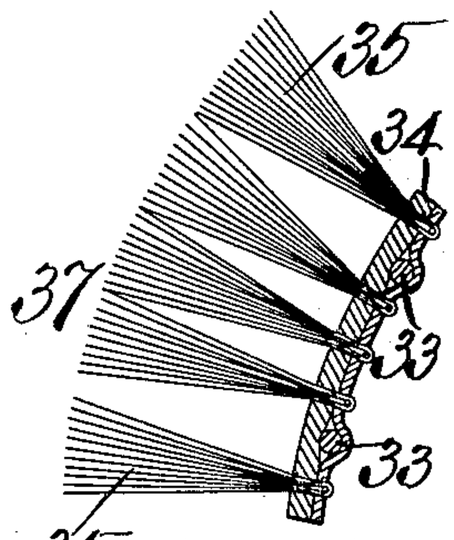
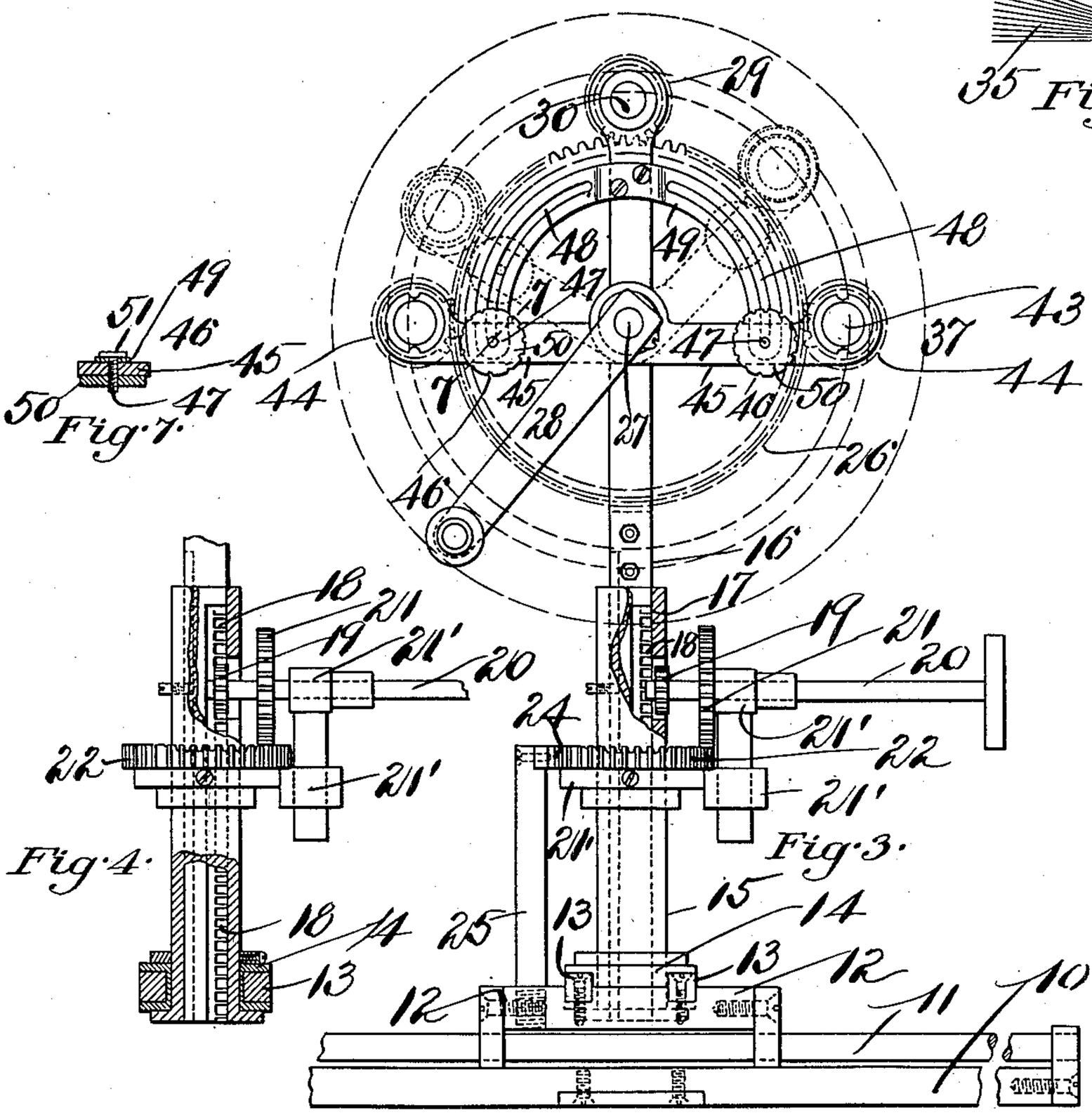


Fig. 6.



Witnesses:

William C. Glass.

Ernest A. Telfer

Inventor:

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UNITED STATES PATENT OFFICE.

GEORGE A. PLINOS, OF SALEM, MASSACHUSETTS.

BOOT-POLISHING MACHINE.

No. 837,720. Specification of Letters Patent. Patented Dec. 4, 1906.

Application filed January 8, 1906. Serial No. 295,005.

To all whom it may concern:

Be it known that I, GEORGE A. PLINOS, a subject of the King of Greece, residing at Salem, in the county of Essex and State of Massachusetts, have invented new and useful Improvements in Boot-Polishing Machines, of which the following is a specification.

This invention relates to a machine for polishing boots and shoes.

The object of the invention is to provide a machine which may be operated either by hand or by power and which is universally adjustable to adapt the same to hold and polish boots of different shapes and sizes.

The invention consists in the combination and arrangement of parts set forth in the following specification and particularly pointed out in the claims thereof.

Referring to the drawings, Figure 1 is a side elevation of my improved boot-polishing machine, partly broken away and shown in section, with a portion of a boot illustrated in dotted lines in position for polishing. Fig. 2 is a plan view of the same, with a shoe illustrated in dotted lines in position to be polished and with the side brushes also illustrated in dotted lines in an adjusted position. Fig. 3 is an end elevation of the brush-adjusting mechanism, the same being partly broken away for the sake of illustration, the annular polishing-brush being shown in connection therewith in broken lines. Fig. 4 is an end elevation of a portion of the mechanism illustrated in Fig. 3, showing some of the parts in a different position. Fig. 5 is a detail end elevation of the means for clamping the sole of a shoe to the toe-rest, with a portion of a shoe illustrated in dotted lines in connection therewith. In Fig. 1 a single annular brush is illustrated attached to the machine, while in Fig. 2 two side brushes are illustrated attached to said machine. Fig. 6 is a detail section of the annular brush, taken on line 6 6 of Fig. 1. Fig. 7 is a detail section taken on line 7 7 of Fig. 3.

Like numerals refer to like parts throughout the several views of the drawings.

In the drawings, 10 is a framework having guide-rods 11 11 extending transversely thereacross. Two slides 12 12 are adapted to slide transversely of said frame and are guided by said rods. The slides 12 12 are connected by guide-rods 13 13, extending longitudinally of the frame, and upon said guide-rods 13 is slidably supported a base 14, having a column 15 rotatably supported thereon. A standard 16 is constructed to slide vertically in ways 17, provided therefor in the interior of the column 15, and this standard has fastened thereto a rack 18, into which a pinion 19 is adapted to mesh. The pinion 19 is fast to a horizontal shaft 20, journaled to rotate in a bracket 21′, fast to the column 15, so that said column and bracket form, in effect, a single piece. The shaft 20 has a gear 21 fast thereto and meshing into the upper ends of the teeth of a gear 22, journaled to rotate upon the column 15. The gear 22 meshes into a stationary rack 24, said stationary rack being fast to posts 25, which are rigidly fastened to and form, in effect, a part of the slides 12.

The upper portion of the standard 16 is bifurcated and has journaled thereon a gear 26, which is fast to a shaft 27, said shaft being capable of being rotated by means of a handle 28 or, if desired, by means of a pulley rotated by suitable power. The gear 26 meshes into a pinion 29, journaled upon the standard 16, said gear being fast to a shaft 30, which projects through the bifurcated upper portion of the standard 16 and has fastened thereto a hub 31. The hub 31 is provided with two arms 32 32, which extend longitudinally thereof and diverge one from the other toward their free ends, said free ends being fastened to two wire rings 33 33. These wire rings extend through a strip of flexible material 34, preferably of leather, said leather having fastened thereto bristles 35, which project inwardly toward the center thereof. The leather 34 is slitted at 36 36 partly thereacross in order to render the same flexible transversely thereof. Said leather 34, bristles 35, and wire rings 33 form as a whole an annular brush 37. The annular brush 37 is fastened to the shaft 30 by means of a set-screw 38, so that the same may be removed when the fore part of the shoe is polished, as hereinafter described, and polishing-brushes 39 39 attached to the machine to polish the sides and heel of the shoe. These polishing-brushes 39 39 have the bristles 40 thereof preferably arranged in the form of a helix and are fast to shafts 41, which are adapted to be fastened by set-screws 42 to shafts 43 43, each of which is fastened to a pinion 44. The pinions 44 44 are journaled upon arms 45 45, said arms being pivoted to the shaft 27.

The arms 45, together with said pinions 44

and polishing-brushes 39, may be rotated about the shaft 27 as a center and are locked in position by suitable clamps 46, each of which consists of a bolt 47, which projects through an annular slot 48, formed in the segmental ring 49, said segmental ring being fastened to the standard 16. A nut 50 has screw-threaded engagement with said bolt 47, said bolt being provided with a head 51. The bolt 47 projects through the slot 48, as hereinbefore described, and also through the arm 45, and by screwing up on the nut 50 said arm is clamped to the segmental ring 49, so that said arms may be set at different angles, as illustrated in full and in dotted lines in Fig. 3. By this means it will be seen that the polishing-brushes 39 may be brought nearer to or farther from each other, as may be desired, to fit varying widths of shoes and boots.

The boot to be polished rests upon a support 52. Said support consists of a plate 53, fast to a post 54, adapted to slide vertically in a hollow column 55, said column 55 being fastened to the frame 10. The post 54 has a rack 56 formed thereon, which meshes into a pinion 57, fast to a shaft 58, journaled upon the column 55 and capable of being rotated by a handle 59 fast thereto. A set-screw 60, having screw-threaded engagement with the column 55, locks the post 54 in position after it has been adjusted to the proper height. The heel of the boot is clamped against a projection 61, extending transversely across the plate 53, by a right-angle clamp-rod 62, the horizontal leg 63 of which projects through the post 54 and the vertical leg 64 of which is provided with an interiorly-screw-threaded sleeve 65, which may be adjusted vertically by rotating the same upon the leg 64. The horizontal leg 63 is screw-threaded and is provided with a nut 66, so that by rotating said nut the arm 63 is moved transversely of the post 54. Thus by rotating the nut 66 in the proper direction the vertical leg 64 may be drawn toward or moved away from the post 54, and thus accommodate the same to heels of varying lengths. The clamp-rod 62 is prevented from rotating upon the post 54 by reason of the fact that the sleeve 65 projects through a slot 67, formed in the plate 53.

A toe-rest 68 is pivoted at 69 to the forward end of the plate 53, so that the same may be moved horizontally upon said pivot to accommodate a right or a left boot or shoe. Said toe-rest is provided with means for clamping the sole of the shoe thereto, said clamping means consisting of two fingers 70 70, each having engagement, respectively, with a rod 71, the rod 71 being fastened to slides 72 72. The slides 72 72 are adapted to move longitudinally thereof in ways formed in a guide-plate 73, pivoted at 74 to a slide 75, said slide 75 projecting into a recess or guideway 76, formed in the toe-rest 68. The slides 72 are locked in a stationary position to the guide-plate 73 by a set-screw 77, and upon the exterior of said set-screw is a sleeve 78, having screw-threaded engagement therewith. The sleeve 78 has an arm 79 fast thereto and adapted to project into notches 80, formed upon one side of a downwardly-depending bracket 81, integral with the toe-rest 68.

The general operation of the machine hereinbefore specifically described is as follows: The boot is placed upon the support 52 in the position illustrated in dotted lines, Fig. 1. The heel of said boot is clamped, by means of the clamp-rod 62, to the plate 53 in the manner hereinbefore described. The clamp-fingers 70 are then placed above the edges of the sole of the shoe and locked in position by means of the screw 77. If now it is desired to bend the toe of the boot downwardly in order to straighten out any wrinkles which may appear in the upper of the shoe, the arm 79 is moved upwardly at its right-hand end and locked in one of the notches 80. This upward movement of the arm 79 causes the guide-plate 73, together with the clamp-fingers 70, attached thereto, to rock upon the pivot 74 in the proper direction to bend the sole of the shoe downwardly, and thus straighten out the wrinkles in the upper. Assuming the parts to be in the position illustrated in Fig. 1, the annular brush 37 is now rotated by rotating the handle 28, thus rotating the gear 26 and pinion 29, to which the hub 31 of said annular brush is fastened. If it is desired to raise or lower the brush, the standard 16, upon which said brush and its actuating-gears are primarily supported, is moved up and down by rotating the shaft 20 when the pinion 18 is in engagment with the rack 17, as illustrated in Fig. 4, and after the standard has been raised, together with the brush and gearing supported thereon, to the desired height said standard is locked in position by means of the set-screw 82. Assuming the side-polishing brushes 39 39 to be attached to their respective pinions 44 and shafts 43, as shown in Fig. 2, it will be seen that by rotating the handle 28 and the gear 26 said pinions 44, shafts 41, and the polishing-brushes 39 will be rotated, thus polishing the sides of the shoe, and said brushes may be moved longitudinally of the shoe in order to polish the entire length thereof, as well as the heel, by moving the standard 16 and the parts supported thereon, together with said brushes, longitudinally of the guideways 13. This is accomplished by moving the horizontal shaft 20 longitudinally thereof until the gear 21 meshes into the gear 22. Then by rotating the horizontal shaft 20 the gear 21 will rotate the gear 22, causing said gear to rotate in engagement with the rack 24. Said rack being stationary, this rotation of the

gear 22 will cause the column 15, base 14, and standard 16, together with the parts supported upon said standard, to move longitudinally of the guideways 13, thus moving the brushes 39 along the sides of the shoe and the heel. If it is desired to rock either the annular brush or the side-polishing brushes laterally of the shoe, it may be accomplished by rotating the standard 16 and column 15 upon the base 14. Thus it will be seen that the brushes may be moved upwardly and downwardly or lengthwise of the boot, thus obtaining any desired position of said brushes relatively to the boot, it being understood that the polishing-brushes 39 may be moved toward each other, as hereinbefore described, by the rotation of the arms 45 about the central shaft 27.

If desired, two shoe-supports 52 may be used for a right and left shoe, and the polishing mechanism as a whole may be moved into proper relation with either of said supports by moving the slides 12 longitudinally of the guide-rods 11, said guide-rods 11 being made of sufficient length to allow said polishing-brushes and the mechanism by which they are actuated to be moved into alinement with either one of said shoe-supports.

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

1. In a boot-polishing machine, a support for a boot, an annular brush, mechanism to rotate said annular brush around a horizontal axis, mechanism to rotate said brush around a vertical axis, mechanism to raise and lower said brush and mechanism to move said brush toward and away from said support.

2. In a boot-polishing machine, a support for a boot, a standard, a gear and pinion journaled on said standard and meshing into each other, a brush fast to said pinion, a column in which said standard is arranged to slide vertically, and a base in which said column is rotatably supported.

3. In a boot-polishing machine, a support for a boot, a standard, a gear and pinion journaled on said standard and meshing into each other, a brush fast to said pinion, a column in which said standard is arranged to slide vertically, and a base in which said cloumn is rotatably supported, said base adapted to slide toward and away from said support.

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

GEORGE A. PLINOS.

Witnesses:

CHARLES S. GOODING,

ANNIE J. DAILEY.