W. WLODKOWSKI.

DRIVING MECHANISM FOR BRUSHING AND POLISHING APPARATUS.

APPLICATION FILED AUG. 25, 1919.

1,336,117. **Patented Apr. 6, 1920.**

2 SHEETS—SHEET 1.

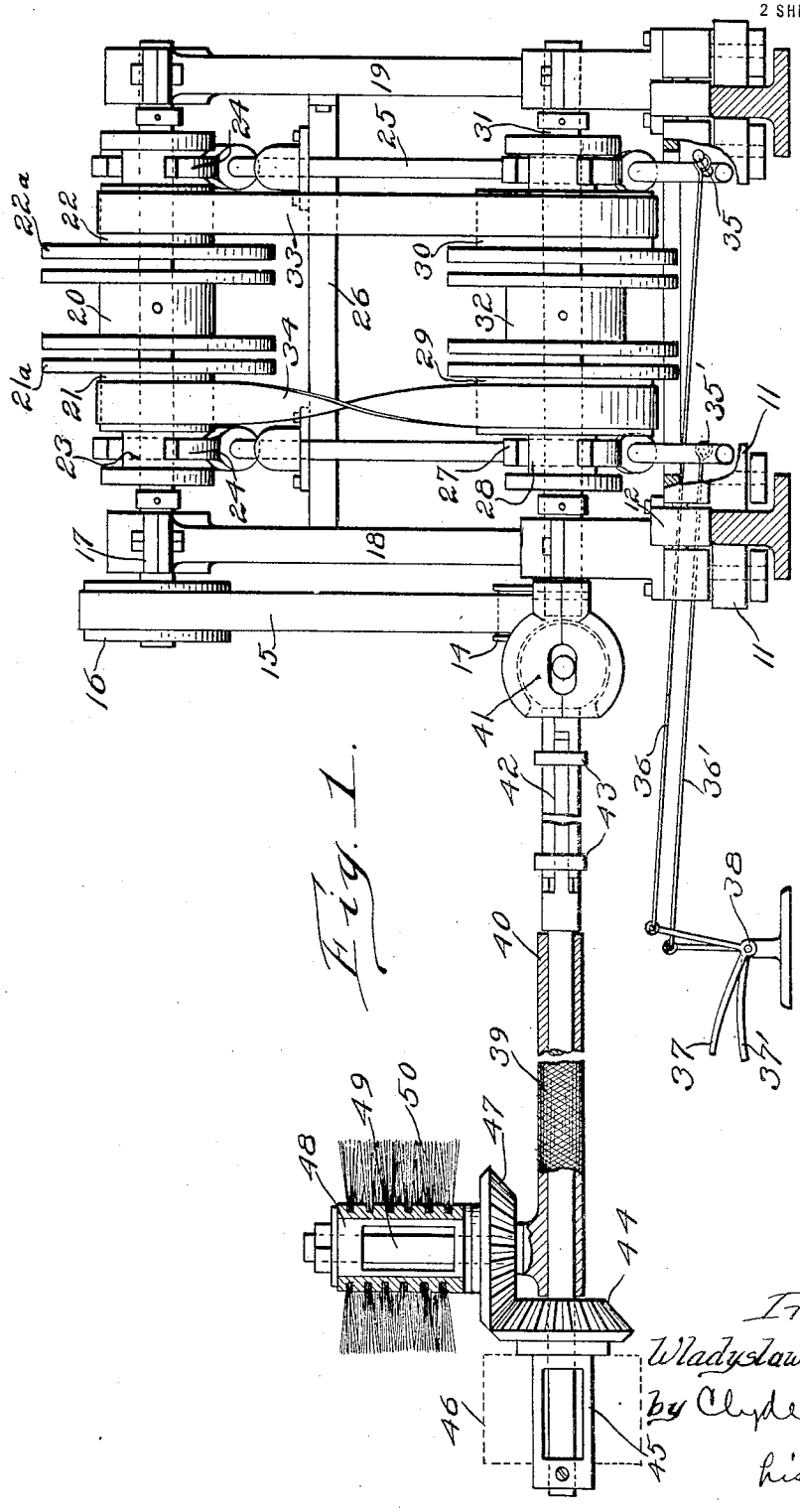


Fig. 1.

Inventor:
Wladyslaw Wlodkowski
by Clyde L. Rogers
his Atty.

W. WLODKOWSKI.

DRIVING MECHANISM FOR BRUSHING AND POLISHING APPARATUS.

APPLICATION FILED AUG. 25, 1919.

1,336,117. **Patented Apr. 6, 1920.**

2 SHEETS—SHEET 2.

Fig. 2.

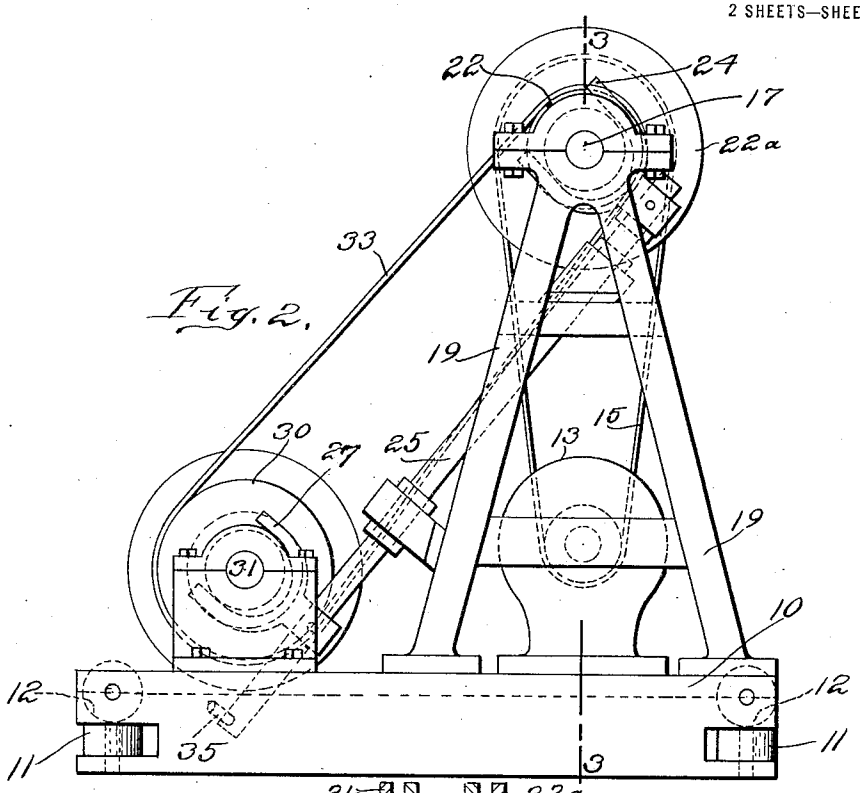
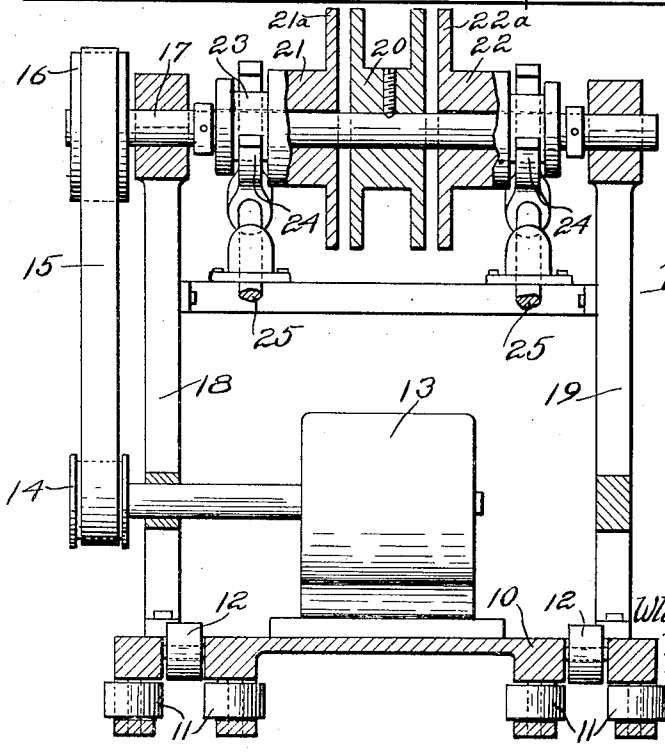


Fig. 3.



Inventor:
Wladyslaw Wlodkowski
by Clyde L. Rogers
his Atty.

UNITED STATES PATENT OFFICE.

WLADYSLAW WLODKOWSKI, OF LYNN, MASSACHUSETTS.

DRIVING MECHANISM FOR BRUSHING AND POLISHING APPARATUS.

1,336,117. Specification of Letters Patent. Patented Apr. 6, 1920.

Original application filed February 8, 1919, Serial No. 275,756. Divided and this application filed August 25, 1919. Serial No. 319,549.

To all whom it may concern:

Be it known that I, WLADYSLAW WLODKOWSKI, a citizen of Poland, (who has declared his intention to become a citizen of the United States,) and a resident of Lynn, in the county of Essex and State of Massachusetts, have invented a new and useful Improvement in Driving Mechanism for Brushing and Polishing Apparatus, of which the following is a specification.

This invention relates to driving mechanism for brushing and polishing apparatus and is herein shown embodied in a type thereof adapted for cleaning, brushing and polishing boots and shoes, though adaptable to other uses as will be apparent. A principal object of the invention is to provide a power driven device equipped with a brushing or polishing head that may be applied in different positions and manipulated readily so as to reach all parts of the shoe or boot to be polished and with a capability of presenting the polishing head at any required angle. A further object is to provide an improved system of power transmission adapted to be readily shifted for rotating the tool in either direction as required for best results. This application is a division of my earlier application, Serial No. 275,756 filed Feb. 8, 1919. It will be understood that this system of power transmission may be used in any machine where a reversible drive is required. The foregoing and other objects and advantages of the invention will more fully appear from the following detailed description, and the distinctive features of novelty will be pointed out in the appended claims.

Referring to the drawings:

Figure 1 is a side elevation with portions in section of the machine constructed in accordance with my invention;

Fig. 2 is an end view thereof;

Fig. 3 is a vertical section approximately on line 3—3 of Fig. 2;

The operating mechanism of the device is mounted on a suitable base 10 which may be fitted to slide on a suitable platform (not shown) into and out of operative position, for this purpose being equipped with depending bearing lugs in which are journaled lateral antifriction bearings 11 at each side of the base adapted to receive between them rails on which the base may be slid, the base also being shown as equipped with other antifriction rolls 12 which are adapted to rest on the tops of such rails. On the base 10 suitable driving means shown as an electric motor 13 is mounted having on the shaft thereof a small pulley 14 which through a belt 15 drives a larger pulley 16 fixed on a countershaft 17, the opposite end portions of which are suitably journaled in uprights 18, 19 fixed to and extending up from the base at each side thereof. The shaft 17 has fixed thereon at an intermediate point a hub 20 the opposite sides of which are formed to constitute friction faces which are adapted to be engaged respectively by coöperative friction faces formed on flanges 21^a, 22^a of belt pulleys 21, 22 which are loosely and slidably fitted on the shaft 17 at each side of the hub 20. Each of the belt pulleys 21, 22 is equipped with a grooved neck extension 23 which is engaged by a shifter yoke 24 fixed on a shaft 25 suitably journaled in cross bars 26 of the frame work. The rock shafts 25 extend diagonally downward and have fixed near the lower ends thereof other shipper yokes 27 engageable with grooved necks 28 of each of a pair of flanged belt pulleys 29, 30 which are loosely and slidably mounted on a shaft 31 and at each side of a flanged hub 32 fixed at an intermediate portion on the shaft 31. The flanged belt pulleys 29, 30 are adapted to be selectively shifted for being moved into and out of frictional engagement with friction faces at the respective sides of the hub 32. The pulleys 29, 30 are preferably and as shown considerably larger than the pulleys 21, 22 so that belt connections therebetween result in a step down of the driving rate which in conjunction with the reduction and speed effected by the smaller pulley 14 driving on to the larger pulley 16 causes the shaft 31 to be driven at a materially reduced rate as compared with the speed of the driving motor. The belt 33 from the pulley 22 to the pulley 30 is shown as a straight direct belt while the belt 34 connecting the pulley 21 with the pulley 29

is a cross belt wherefrom it results that the shaft 31 will be driven in one direction with the drive through the pulleys 22, 30 and in the opposite direction when the drive through the pulleys 21, 29, the purpose of this reversal of direction is to permit the polishing tool connected with the shaft 31 to be always driven irrespective of the position to which it may be moved or swung in a direction so that its operative face moves downward, *i. e.*, so that the polishing material or dirt or other matter cleaned from shoes will not be thrown upward on to the clothing or person of the operator or customer, but always downward out of the way. For oscillating the respective shafts 25 so as to shift either of the pulley pairs 21, 29 or 22, 30 into operative engagement with the respective clutch hubs 20, 32, the lower extremity of each of these shafts is shown as equipped with a projecting arm 35, the arm 35 at the right in Fig. 1 projecting upward so that a pull thereon from the left will draw the clutch members into engagement, while the other shaft at the left of said figure has its corresponding arm 35′ projecting downward likewise so that a similar pull to the left thereon will throw the clutch pulleys 21, 29 into engagement. For thus rocking the two shafts 25 selectively to cause rotation of the shaft 31 in either direction at will the arm or pin 35 has engaged therewith a pull rod 36 and the arm 35′ is engaged by a similar pull rod 36′. These pull rods are engaged respectively by bell crank handle levers 37, 37′ pivoted at 38 to a suitable fixed support. The sleeve handle 39 is loosely mounted on the shaft 40 which constitutes substantially a flexibly mounted extension of the shaft 31. The shaft 31 has at its extremity a ball and socket joint connection 41 to an extension 31′ thereof which extension can thus swing universally through a considerable angle with reference to the shaft 31 and still preserve driven engagement therewith. The shaft 31′ has in its major outer portion a tongue and groove formation 42 coöperative with a similar formation on an extension of the shaft 40 which permits a substantial range of relative endwise sliding between the shafts 31′ and 40 while preserving driving engagement therebetween, such endwise sliding range being determined by the collars 43 on the respective shaft members. The shaft 40 has fixed on an outer projecting end thereof beyond the handle sleeve 39 a bevel pinion 44 having a squared extending hub 45 adapted to have a brushing or polishing tool applied thereon as indicated in dotted lines at 46. The pinion 44 is in driving engagement with another bevel pinion 47 having an extended squared hub 48 and journaled on a stub shaft 49 carried by and extending out laterally from the handle sleeve 39. The squared hub 48 is shown as having fixed thereon a brush head 50 this typifying any suitable brushing or polishing tool adapted to be applied to the squared hub 48 and driven through the described connections. It will be observed that the brush head 50 thus mounted may be turned angularly in any desired manner for best and most convenient action on the work in hand and that it may be rotated in either direction by manipulating one or the other of the handles 37, 37′ which are arranged conveniently for this purpose relatively close to the portion of the handle sleeve 39 that would be held by the operator in using the device. Likewise the brush head 50 or any other suitable brush or polishing head may be applied to the squared projecting hub 45 for such uses as this mounting will best serve, the operator being enabled to change the brush head or tool very quickly and easily from its lateral mounting to its end mounting for engaging different portions of the work, and having the direction of movement of the tool always under instant control so that whichever way the brush head may be mounted or turned by the swivel movement of the sleeve 39, the head may be made to revolve always downward and thus not throw any debris or polishing material up on to the face or clothing of the operator. I am aware that the invention may be embodied in other specific forms without departing from the spirit or essential attributes thereof, and I therefore desire the present embodiment to be considered in all respects as illustrative and not restrictive, reference being had to the appended claims rather than to the foregoing description to indicate the scope of the invention.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

1. Driving mechanism for shoe cleaning and polishing machines and the like, comprising a driving shaft, an intermediate clutch hub fixed thereto, gearing elements equipped with clutch faces loosely fitted on said shaft at each side of said clutch hub, a driven shaft having connections to operate a brush head or the like, a clutch hub on said driven shaft, gearing elements equipped with clutch faces loosely mounted on said driven shaft on each side of said clutch hub connected to the respective ones of the first named gearing elements, direct and reversing connections respectively therefor, and means for shifting either of said connected pairs of gearing elements into operative engagement with their respective clutch hubs at will.

2. Driving mechanism comprising a driving shaft, an intermediate clutch hub fixed thereto and belt pulleys equipped with clutch faces loosely fitted thereon at each side of

said clutch hub, a driven shaft, a clutch hub fixed thereto, belt pulleys with clutch faces loosely mounted on said shaft at each side of said clutch hub connected to the respective ones of the first named pulleys, a direct and a cross belt respectively making such connections, and means for shifting either of the belt connected pairs of said belt pulleys into operative engagement with their respective clutch hubs at will.

In testimony whereof I have hereunto subscribed my name this 18th day of August, 1909.

WLADYSLAW WLODKOWSKI.