Aug. 9, 1932. J. E. S. TAYLOR 1,870,349

SHOE BRUSHING APPARATUS

Filed Dec. 31, 1929 3 Sheets-Sheet 1

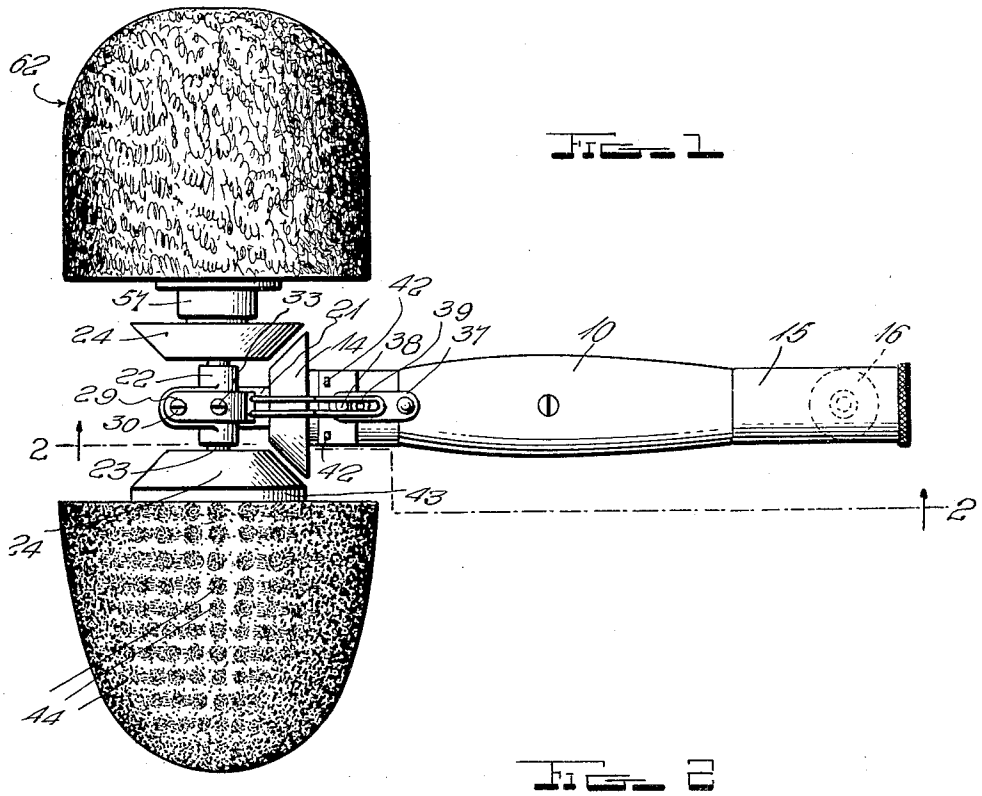


Fig. 1

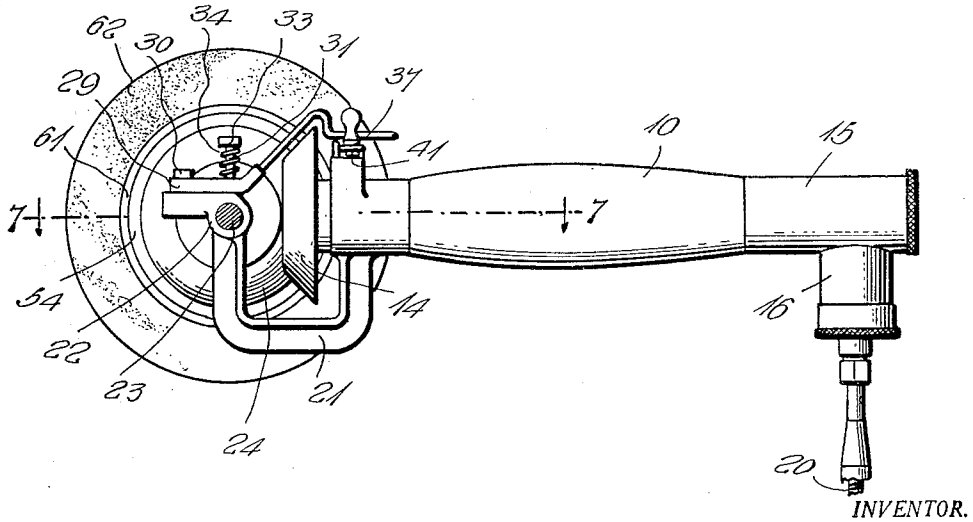


Fig. 2

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SHOE BRUSHING APPARATUS

Filed Dec. 31, 1929 3 Sheets-Sheet 2

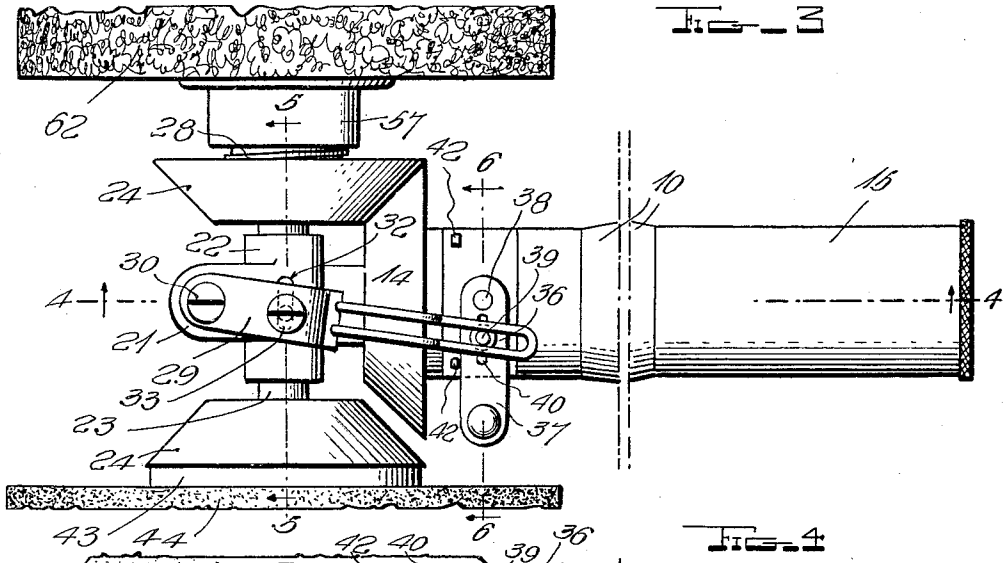


Fig. 3

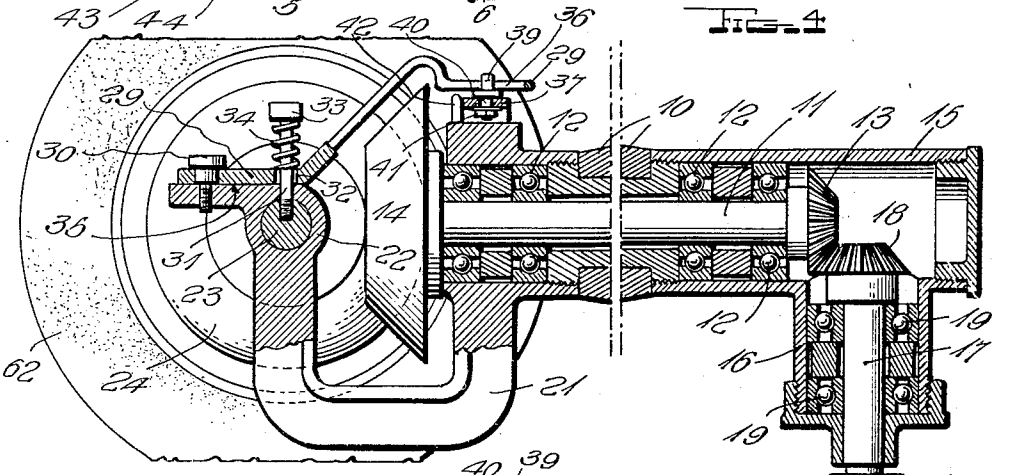


Fig. 4

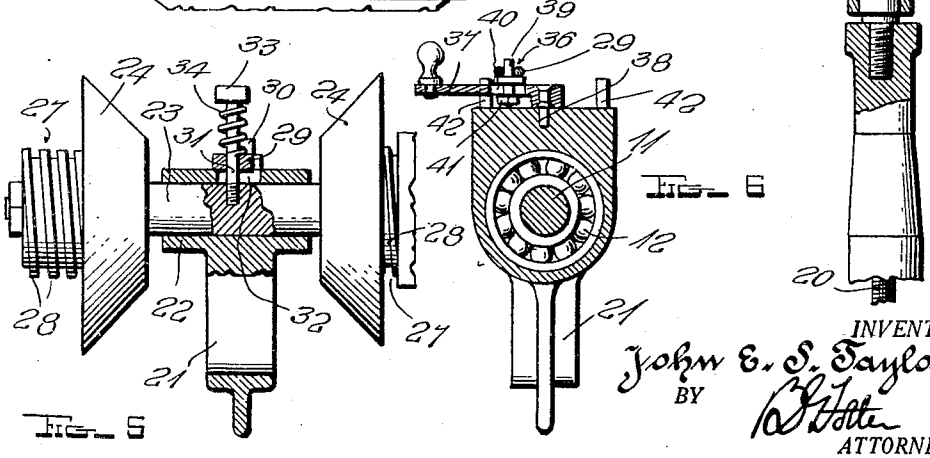


Fig. 6

Fig. 5

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SHOE BRUSHING APPARATUS

Filed Dec. 31, 1929 3 Sheets-Sheet 3

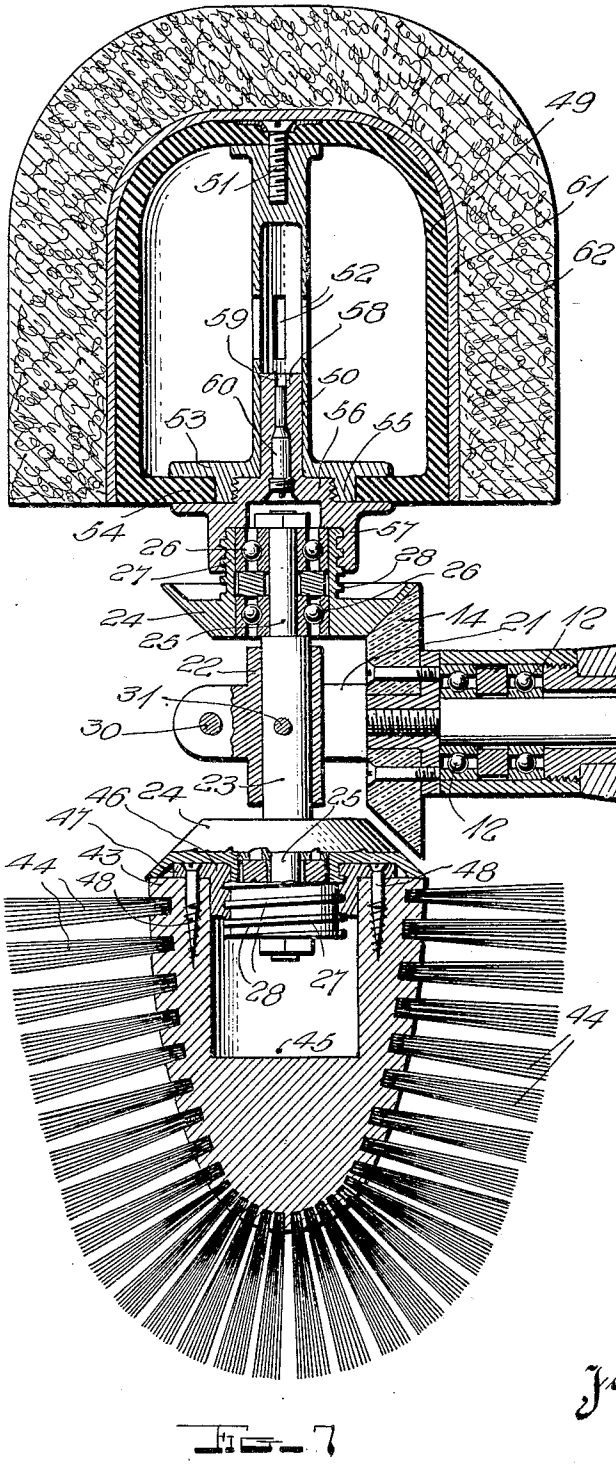


FIG. 7

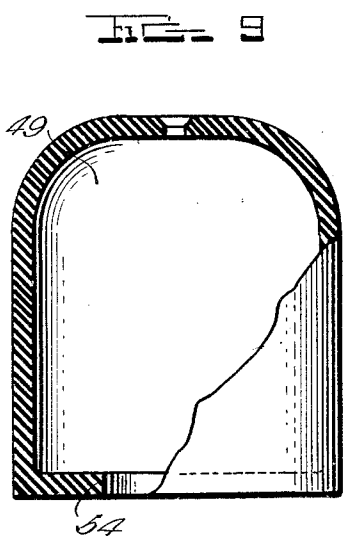


FIG. 9

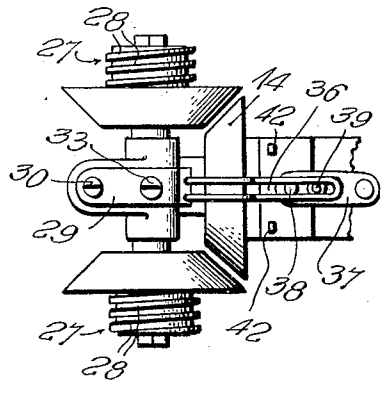


FIG. 8

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UNITED STATES PATENT OFFICE

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SHOE BRUSHING APPARATUS

Application filed December 31, 1929. Serial No. 417,736.

One of the objects of the present invention is to provide a simple and very conveniently manipulated brushing and cleaning apparatus that is peculiarly useful for polishing shoes, though obviously it may be employed for other analogous purposes and is adapted to be manually moved over the irregular contour of the surface being treated with the utmost ease and expedition while it is in operation.

A still further and important object is to provide means of a novel, simple and effective character for controlling the operation of the cleaning or polishing members.

A still further and important object is to provide a novel means for detachably holding a cleaning or polishing jacket on the body or foundation element of such jacket.

In the accompanying drawings:

Figure 1 is a plan view of the preferred embodiment of the invention.

Figure 2 is a side elevation of the same.

Figure 3 is an enlarged plan view of the controlling mechanism showing it in one of its operative positions.

Figure 4 is a sectional view on the line 4—4 of Figure 3.

Figure 5 is a detail sectional view on the line 5—5 of Figure 3.

Figure 6 is a detail sectional view on the line 6—6 of Figure 3.

Figure 7 is a horizontal sectional view on the line 7—7 of Figure 2.

Figure 8 is a detail plan view showing the controlling means in neutral or inoperative position.

Figure 9 is a detail sectional view through the inflatable body of the polishing member.

In the embodiment disclosed, a tubular handle grip 10 is employed in which is a longitudinally disposed drive shaft 11 having ball bearing mountings 12. This shaft at its rear end is provided with a bevel or other suitable gear 13 and is further provided at its opposite end and at the end of the handle grip with a friction bevel gear 14. The bevel gear 13 is in a casing 15 having a right angular extension 16, in which is journaled a stub shaft 17 having at its inner end a bevel gear 18, located in the chamber of the casing and meshing with the bevel gear 13. The stub shaft 17 is mounted in ball bearings 19 and is suitably connected to a flexible drive shaft 20 leading from any suitable source of power, as for example, an electric motor.

The handle at the end at which the friction gear 14 is located, is provided with a bracket frame 21 having a boxing 22 disposed at right angles to the handle grip 10. In this box is a longitudinally reciprocable spindle or axle 23 that is non-rotatable. Oppositely inclined friction bevel gears 24 are journaled on the ends of the axle 23, which ends are preferably reduced in diameter as shown at 25. These bevel gears have ball bearings 26. The bevel gears are alternately movable into and out of driving engagement with the bevel gear 14 when the axle is reciprocated, and thus one will be rotated when the other is idle. The bevel gears have outwardly extending hubs 27 provided with external relatively coarse threads 28.

For the purpose of reciprocating the axle or spindle 23, a lever 29 is fulcrumed at one end, and as shown at 30, to the outer end of the bracket frame 21, and has a pivotal mounting on a pin 31 fixed to the central portion of the spindle or axle 23 and operating in a slot 32 formed in the box 22. This pin has a head 33 on its free end, and interposed between the head 33 and the lever 29 and bearing upon the latter is a coiled spring 34. This spring serves to hold the lever against the adjacent face of the bracket frame as shown at 35 in Figure 4, creating a substantial friction which tends to hold the lever wherever placed. The free end of the lever 29 extends over the end of the handle grip and has a longitudinal slot 36. An ac-

tuating and locking latch 37, pivoted at 38, on the handle frame, extends beneath the free end of the lever 29 and carries an upstanding pin 39 engaged in the slot 36 of the lever. This pin is adjustable longitudinally along the latch 37 by being engaged in a slot 40 in said latch and having a suitable locking nut 41 that secures it in any desired position. The latch, it will be noted by reference to Figure 1, can be thrown to a right angular position with respect to the handle, thereby shifting the lever 29. To limit this movement, stops 42 are located on the handle.

The threaded hubs 27 of the friction gears 24 serve as mountings for the brushing or polishing devices. Two such instruments are shown. In one a semi-ovoidal body 43 is provided, having bristles 44 set into its peripheral end wall. This body is socketed, as shown at 45, and has fitted into it a nut 46, which is flanged as shown at 47 and secured by fasteners 48 to the inner end of the body. The nut 46 will thread on one of the hubs 27, as shown, for example in Figure 7.

Associated with the above described brush is a polishing member. This member includes an elastic inflatable body 49, preferably of rubber or the like. A core in the form of a stem 50 extends longitudinally within the same, abutting the outer end of the body and secured thereto by a screw 51 passing through the end wall of the body. The stem is tubular in form, being provided with air ports 52 and having at its inner end an annular flange 53 that abuts the inner face of the inner end wall 54 of the body. The stem furthermore has a tubular boss 55 fitting into the end wall of the body and internally threaded to receive the shank 56 of a nut member 57 that projects beyond the body and is internally threaded to receive the threaded hub 27 of the friction gear 24. The nut member 57 has a bushing 58 that extends into the stem 50 and has a longitudinal passageway 59 therein that receives an ordinary valve for inflating, indicated at 60. This may be of any well known type, such as that used for inflating tires, and therefore it is believed needs no further explanation. It is evident that its outer end is accessible through the nut member 57 when the same is detached from the friction gear.

This tubular elastic body 49 is enclosed by a flexible jacket 61 that fits it snugly and has a covering 62 of polishing material. Sheepskin with the wool thereon has been found a satisfactory material for this jacket and the inner face of the skin produces sufficient frictional contact with the body so that when the latter is inflated the jacket will be very effectively held in place.

It is believed that the operation of the device can now be made clear. The shaft 11 being driven constantly by any suitable means, the operator grasps the handle grip 10 and by manipulating the latch 37 can move the axle 23 and cause either of the gears 24 to frictionally contact with the drive gear 14. With the brushing or polishing member in place thereon, the latter will be revolved at a relatively high speed, and the brush being extensible, it can be applied to a shoe or other irregular surface and caused to traverse the same as it is rapidly rotated. A peculiarly efficient cleaning and polishing action can thus be obtained. Moreover when the latch 37 is in one of its right angular positions, the particular cleaning member is then maintained in its active position, so that no further attention need be paid to it and the operator can direct his attention to moving the brush or polisher over the surface being operated upon. The adjustment of the pin 39 on the latch 37 is important as it permits a change in the amount of throw of the lever 29 so that the proper engagement between the friction gears can be maintained and wear compensated for. By having the drive shaft 20 flexible and at right angles to the handle shaft 11, the cleaning or polishing member can be moved freely and without material resistance in any direction, an arrangement that has been found of peculiar advantage. That is to say, the operator grasping the handle grip can turn said grip on its longitudinal axis and this of course will correspondingly turn the brushing or polishing member with it. Therefore all surfaces, recesses and curved portions of a shoe or the like can be reached and properly brushed and polished. When it is desired to change the polishing members they can be readily unscrewed from their drive gears and if it is desired to change the jacket of the polishing device, it is only necessary to deflate the body 49, whereupon the jacket can be easily removed therefrom and a new one put into position, after which the body can be reinflated.

From the foregoing, it is thought that the construction, operation and many advantages of the herein described invention will be apparent to those skilled in the art without further description and it will be understood that various changes in the size, shape, proportion and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

What I claim, is:

1. In brushing and polishing apparatus, a hollow inflatable buffer comprising flexible side and end walls, a tie connection within the body connecting the end walls, and a flexible jacket covering the side and one of the end walls and also covering the end of the tie connection that is engaged with said end wall.

2. In brushing and polishing apparatus, a

hollow inflatable buffer comprising flexible side walls, an inner end wall and an outer rounded flexible end wall, a tie connection between the end walls that terminates at the rounded end wall and projects beyond the other end wall for connection with a driving means, and a flexible jacket covering the side walls, the rounded end wall and the tie connection connected to the latter wall.

In testimony whereof, I affix my signature.

JOHN E. S. TAYLOR.