Jan. 4, 1966 L. H. LEONARD 3,226,750

POWER OPERATED GOLF SHOE CLEANER

Filed May 4, 1964 3 Sheets-Sheet 1

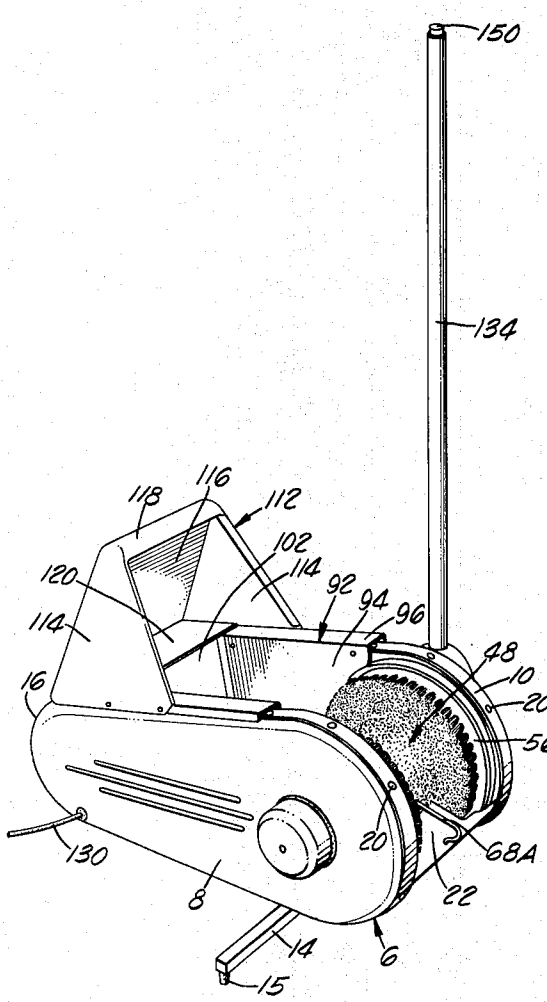



FIG. 1.

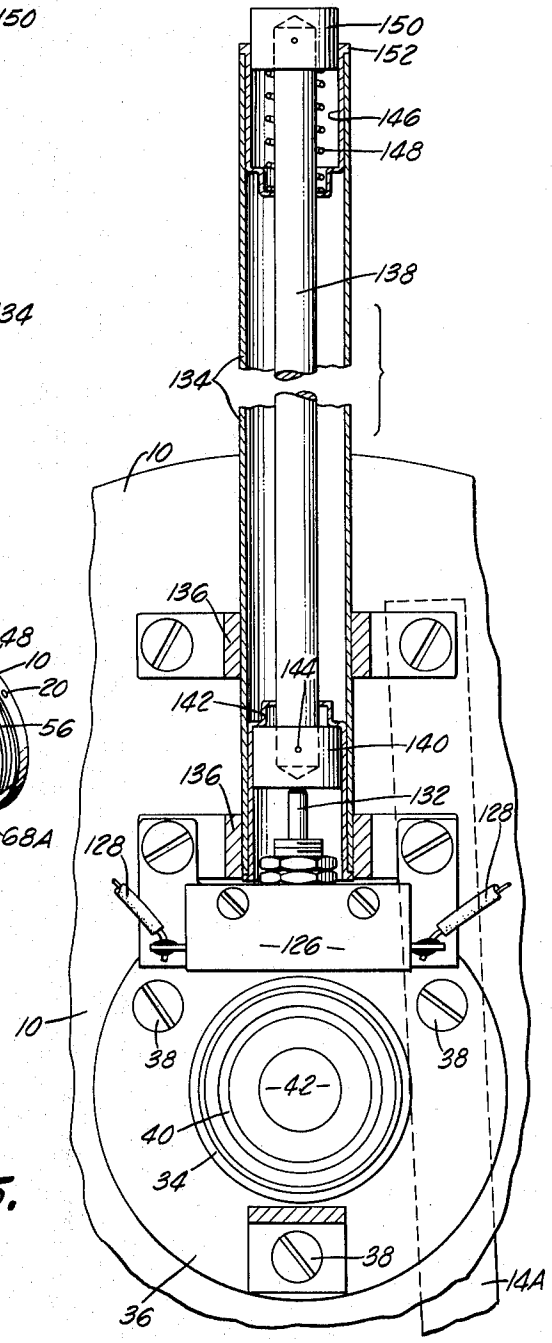



FIG. 5.

INVENTOR.
LLOYD H. LEONARD

BY Hazard & Miller

ATTORNEYS

Jan. 4, 1966 L. H. LEONARD 3,226,750

POWER OPERATED GOLF SHOE CLEANER

Filed May 4, 1964 3 Sheets-Sheet 2

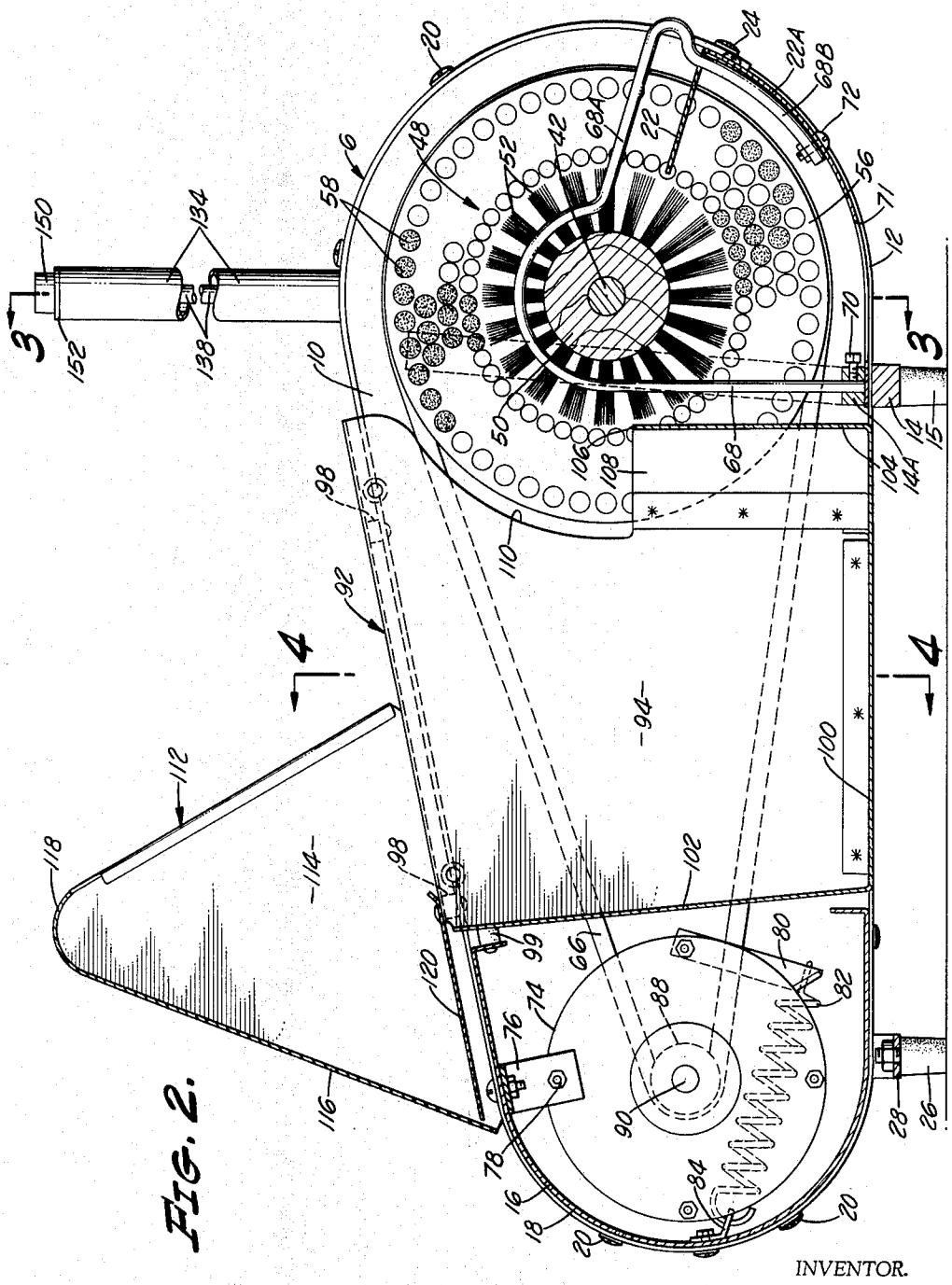



FIG. 2.

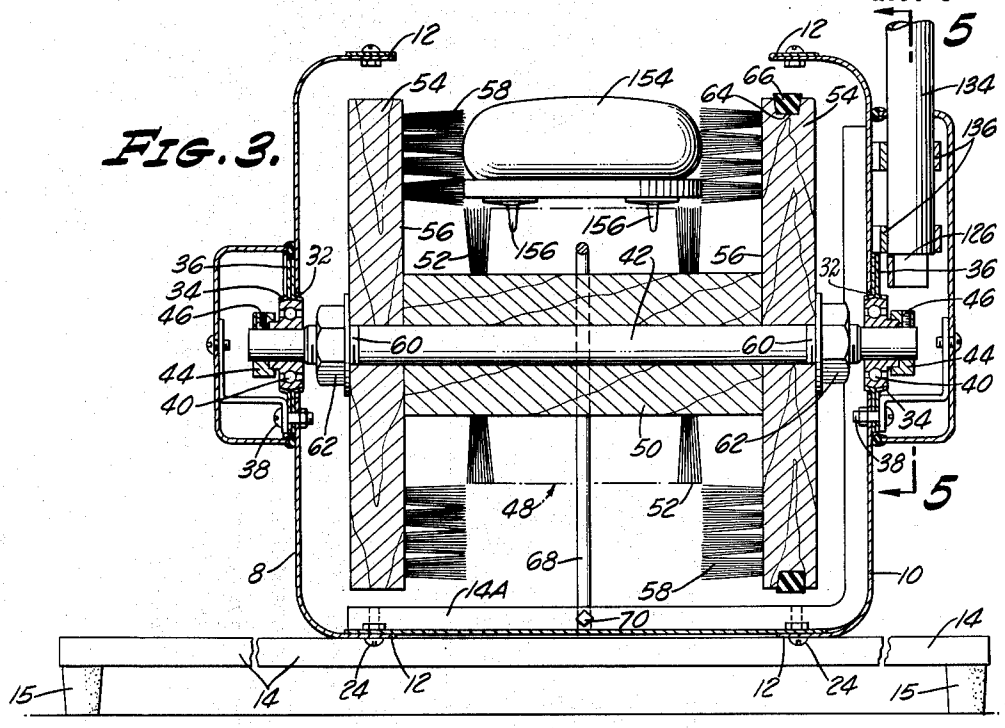
INVENTOR.
LLOYD H. LEONARD
BY Hazard & Miller
ATTORNEYS

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POWER OPERATED GOLF SHOE CLEANER

Filed May 4, 1964 3 Sheets-Sheet 3

FIG. 3.



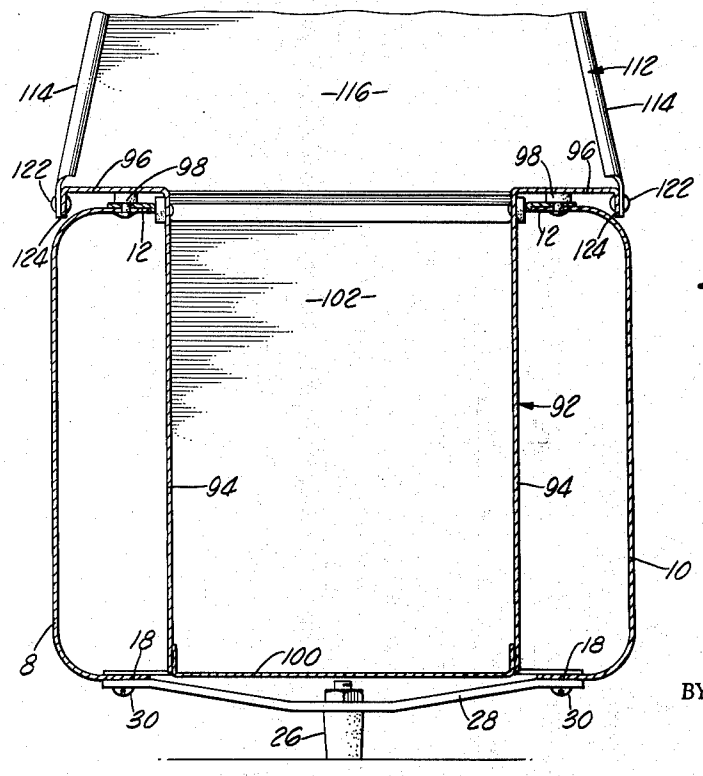




FIG. 4.

INVENTOR.
LLOYD H. LEONARD
BY Hazard & Miller
ATTORNEYS

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Patented Jan. 4, 1966



3,226,750

# POWER OPERATED GOLF SHOE CLEANER

Lloyd H. Leonard, 14877 Valley Vista Blvd., Sherman Oaks, Calif.

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1 Claim. (Cl. 15—36)

This invention relates to a power operated cleaner for cleated shoes and primarily for golf shoes, although it can be used for other types of cleated shoes such as those used in football and track, and field events, and even for shoes having no cleats, if desired.

It is a general object of the invention to provide a power operated cleaner of the type mentioned above wherein a rotary brush is driven by some suitable power means, such as an electric motor, and wherein suitable means is provided for catching and holding the refuse removed from the shoes, and also protecting the motor against dirt, blades of grass, and other refuse.

Another object of the invention is to provide a shoe cleaner wherein the cleats, the bottoms of the shoe soles, and their edges, are effectively cleaned.

A further object of the invention is to provide a compact power operated rotary brush cleaner in which the rotary brush has a reduced intermediate portion and enlarged end portions, in combination with a refuse receiver having a portion positioned close to the bristles of the brush and generally following the axial profile of the brush.

A further object of the invention is to provide a shoe cleaner wherein the casing which carries the brush and motor is located close to the ground or floor, and a control for the motor is conveniently extended upwardly for ease of actuation by the user.

The above and other objects will more fully appear from the following description in connection with the accompanying drawings, in which:

FIG. 1 is a perspective view of an embodiment of the invention;

FIG. 2 is a longitudinal vertical sectional view on an enlarged scale;

FIG. 3 is a sectional view taken approximately on the line 3—3 of FIG. 2;

FIG. 4 is a sectional view taken approximately on the line 4—4 of FIG. 2; and

FIG. 5 is an enlarged detail partially in section, taken approximately on the line 5—5 of FIG. 3.

The device includes a casing 6 having side walls 8 and 10. The forward portion of each side wall is provided with a flange 12 which is suitably secured to a cross member 14 supported by front legs 15. Supported between the rear portions of the side walls 8 and 10, is a motor housing 16 secured between flanges 18 extending inwardly from each side wall. Said flanges 18 may be separate flanges or form continuations of the flanges 12 at the forward portions of the casing. Suitable bolts 20 secure the motor housing 16 to said flanges of flange portions 18.

The lower forward portion of the casing has a baffle 22 carried thereby, said baffle curving downwardly and rearwardly as at 22A, and secured to the flanges 12 by bolts 24, as shown in FIG. 3.

The rear portion of the casing 6 may be suitably supported by a single leg 26 secured to a strap 28 which extends between and is secured to the rearward flange portions 18 by bolts or self-threading screws 30.

Opposite forward portions of the side walls 8 and 10 are provided with aligned apertures 32, each of which receives a portion of a bearing retainer 34. Each bearing retainer is provided with flanged portions 36. Bolts 38 connect the flanged portions 36 to the respective side



walls 8 and 10. Carried by the bearing retainers 34 are suitable bearings, generally indicated at 40, and said bearings rotatably support a brush shaft 42 on each end of which is a thrust cap 44 held by a set screw 46. Upon the shaft 42 is a rotary brush, indicated generally at 48. The brush includes a medial axial spindle 50 having radial bristles 52 extending therefrom. At each end of the spindle 50 are discs 54 whose facing surfaces 56 have axial bristles 58 extending therefrom. Those portions of the shaft extending outwardly of the brush discs 54 are provided with threads 60 having nuts 62 by means of which the brush discs 54 can be drawn up tightly against the ends of the medial brush reel 50 to clamp them together and also to secure the entire brush assembly on the shaft 42. As best shown in FIG. 3, the right hand brush flange 54 is provided with a tapered circumferential groove 64 to receive a drive belt 66 from a motor to be described below.

Extending through and upwardly from an angle bracket 14A is a rod 68 held by a set screw 70 threaded into the angle bracket 14A. The medial rearward portion of the baffle portion 22A is provided with a cutout 71 to afford access to the set screw 70. The rod 68 extends vertically to a point adjacent the brush shaft 42, as shown in FIG. 2, and then curves forwardly over the medial brush spindle 50 in spaced relation thereto and beneath the outer ends of the medial brush bristles 52. Said rod 68 then extends forwardly and downwardly as at 68A, and has a downward forward end 68B which extends through the baffle 22 and is held by a through bolt and nut 72 secured to the inner side of the curved baffle portion 22A. The portion of the rod 68 which curves over the spindle 50 serves to engage the underside of the shoe sole and hold the ends of the cleats of the shoe out of contact with the lower ends of the bristles 52 and the surface of the medial brush spindle 50.

In the rear portion of the casing 6, and also in the motor housing 16, is an electric motor 74 supported by a U-bracket 76, as shown in FIG. 2, to be suitably secured as by bolts to the inner upper portion of the motor housing 16, the motor 74 being swingable relative to the bracket 76 about the axis of a bolt 78 which connects the motor to the bracket 76. Secured to the motor 74 is an angle bracket 80 which has one end of a tension spring 82 secured thereto, the other end of the spring being connected to an anchor clip 84 belted to the inside of the motor housing 16. This tends to swing the motor about the axis 78 in a rearward direction to apply tension to a drive belt 66 which extends between a pulley 88 on a motor shaft 90 and the groove 64 of the right hand brush disc 54.

Located between the motor housing 16 and the rotary brush 48, is a refuse receiver 92 which is provided with side walls 94 having outwardly disposed upper flanges 96, the latter resting on upwardly disposed cushion feet 98 which are attached to the flanges 12 of the casing side members 8 and 10. A cushion 99 on the forward upper flange of the motor housing 16 bears against the rear wall 102 of the refuse container 92.

The refuse container 92 has a bottom 100 and a rear wall 102, said rear wall, together with the motor housing 16, constituting an effective end closure for the motor 74 to prevent dirt and other refuse from reaching it.

The refuse container 92 has a front wall 104 which, as shown in FIG. 2, extends upwardly to a point not quite as high as the brush shaft 42. The upper edge 106 of the front wall 104 terminates closely adjacent the medial brush bristles 52 and low side portions 108 have their outer surfaces closely adjacent the ends of the axially inwardly extending bristles 58 on the discs 54. The side walls 94 have arcuate forward edges 110 which lie close to and radially outwardly of the bristles 58 on the brush

discs 54 so that the entire forward portion of the refuse receptacle 92 closely follows the axial profile of the rotary brush 48, said profile being shown in FIGS. 1, 2 and 3.

The refuse container 92 is not secured in any manner to the remainder of the structure, so that it can be readily lifted upwardly out of the main casing 6 to dispose of refuse collected therein.

An auxiliary refuse collector and/or baffle unit is indicated at 112. As shown in FIGS. 1 and 2, it is generally of triangular shape when viewed from the side, it being provided with triangular side walls 114 and a rear wall 116. The rear wall curves forwardly as at 118 and the front portion of the auxiliary receiver 112 is open at the front. A baffle plate 120 has its forward edge secured across the upper rear portion of the main refuse receptacle 92, the lower portions of the triangular side walls 114 being secured by screws or rivets 122 to downwardly disposed flanges 124 at the outer edges of the horizontal flanges 96 on the main refuse receptacle 92. This baffle 120 prevents refuse from working into the motor housing 16 between the forward edges of said housing and the rear wall 102 of the main refuse receptacle 92.

Mounted on the casing side wall 10 is a switch 126 electrically connected by wires 128 to the brush driving motor 74, said motor having a power supply cord 130, shown in FIG. 1. The switch 126 is provided with an actuator pin 132 which extends into the bottom of a tubular switch actuator wand 134 from the switch 126, the lower end of which is connected to the casing side wall 10 by suitable straps 136. Mounted for vertical reciprocation in the tubular wand 134 is a switch actuator rod 138 having a switch actuator foot 140 on its lower end, said foot being located in a guide cup 142 suitably secured by a pin 144 which extends through the foot 140 and the lower end of the actuator rod 138.

The upper end of the actuator rod 138 extends through an apertured cup 146 having a compression spring 148 therein, the lower end of the spring bears against the bottom of the cup 146, and its upper end against an actuator button 150 secured to the upper end of the rod 138. The cup 146 is flanged at 152 to support it in the tubular actuator wand 134.

When one presses the actuator button 150, the motor 74 is energized, and through the belt 66, rotates the rotary brush 48, the shoe 154 being placed in the brush as indicated in FIG. 3. As shown in this figure, the radial bristles 52 clean the soles of the shoes and the spikes 156, and the axial bristles 58 clean the sides of the sole and the shoe. Of course, the foot can be moved so that the radial bristles 52 will clean the toe portions of the shoe and sole, and the heel of the shoe can be placed in the brush in approximately the same position shown in FIG. 3.



It will be seen that I have provided a shoe cleaner particularly adapted for cleaning cleated sport shoes, wherein the brush and its driving motor are separated by the refuse receiving pan, and the pan is so constructed that it will completely protect the motor against dirt and other refuse from the shoe and brush, and at the same time, the refuse container can be readily removed and emptied. The brush structure is simple and effective and is so constructed that either the spindle or one or both of the disc-like brush elements can be replaced by removing either of the nuts 62 from brush shaft 42. Furthermore, the spikes 156 are held from contact with the medial brush spindle 50. Also, the motor actuator wand 134 supports the actuator button 150 conveniently so that it can be manipulated by the user in a standing position.

It will of course be understood that various changes can be made in the form, details, arrangement and proportions of the various parts, without departing from the spirit of the invention.

I claim:

In a shoe cleaner, a casing, a rotary brush having means for supporting it for rotation in said casing, an electrical motor in said casing spaced from said brush, drive means operatively connecting said motor to said brush to rotate the latter, a refuse receiver positioned in said casing between said brush and said motor, said refuse receiver having a portion thereof comprising a motor protecting refuse shield between said brush and said motor, said refuse receiver having a first upstanding wall generally parallel to the rotational axis of said brush and positioned adjacent said brush, said wall being of less height than the axial profile of the brush, and said motor protecting refuse shield comprising a second upstanding refuse receiver wall opposite to said first wall and defining, with a portion of said casing, a motor enclosure.


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CHARLES A. WILLMUTH, *Primary Examiner.*

ROBERT L. BLEUTGE, *Assistant Examiner.*