May 17, 1966 E. H. JACOBS 3,251,085

SHOE POLISHER POWER HANDLE

Filed July 21, 1964 2 Sheets-Sheet 1

FIG. 1

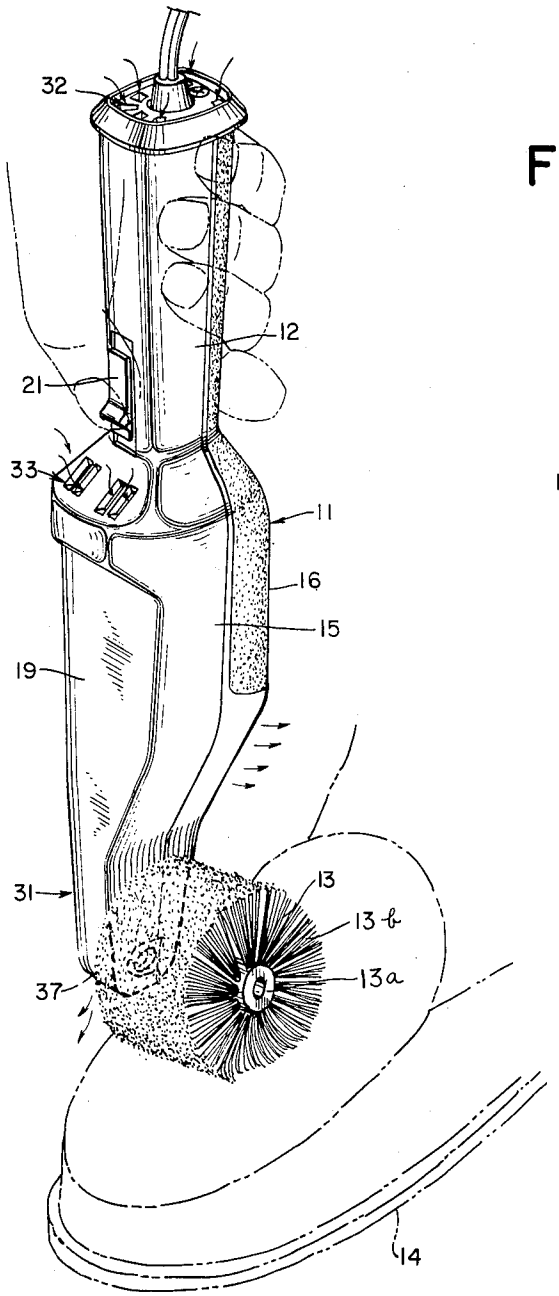
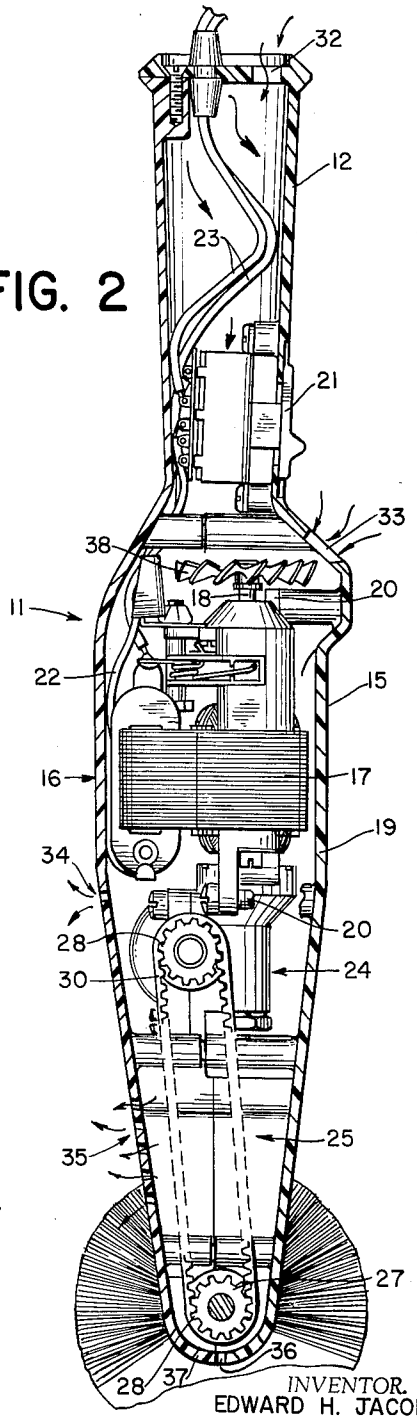


FIG. 2



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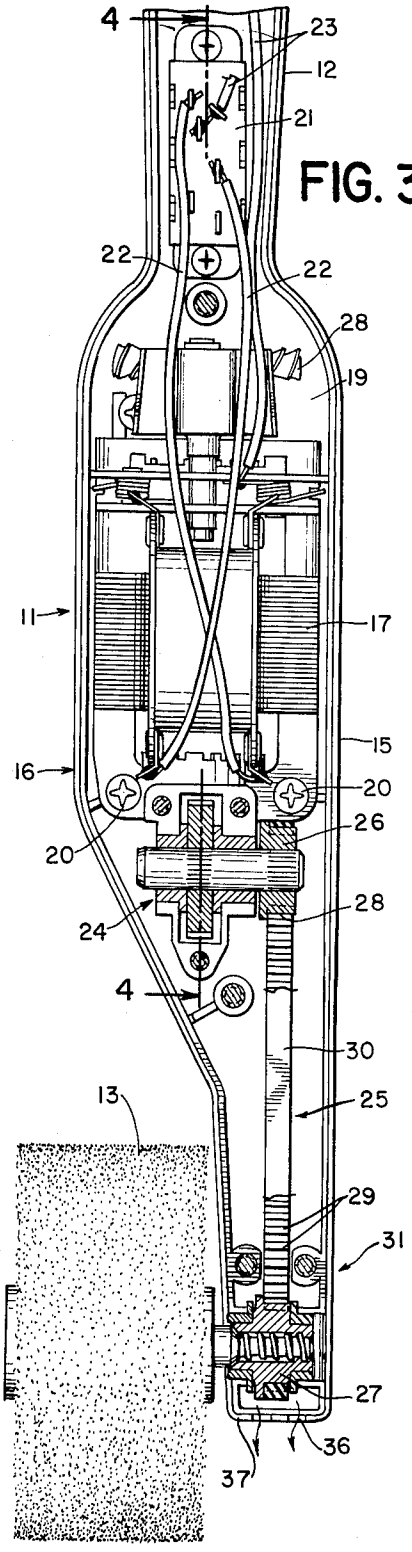


FIG. 3

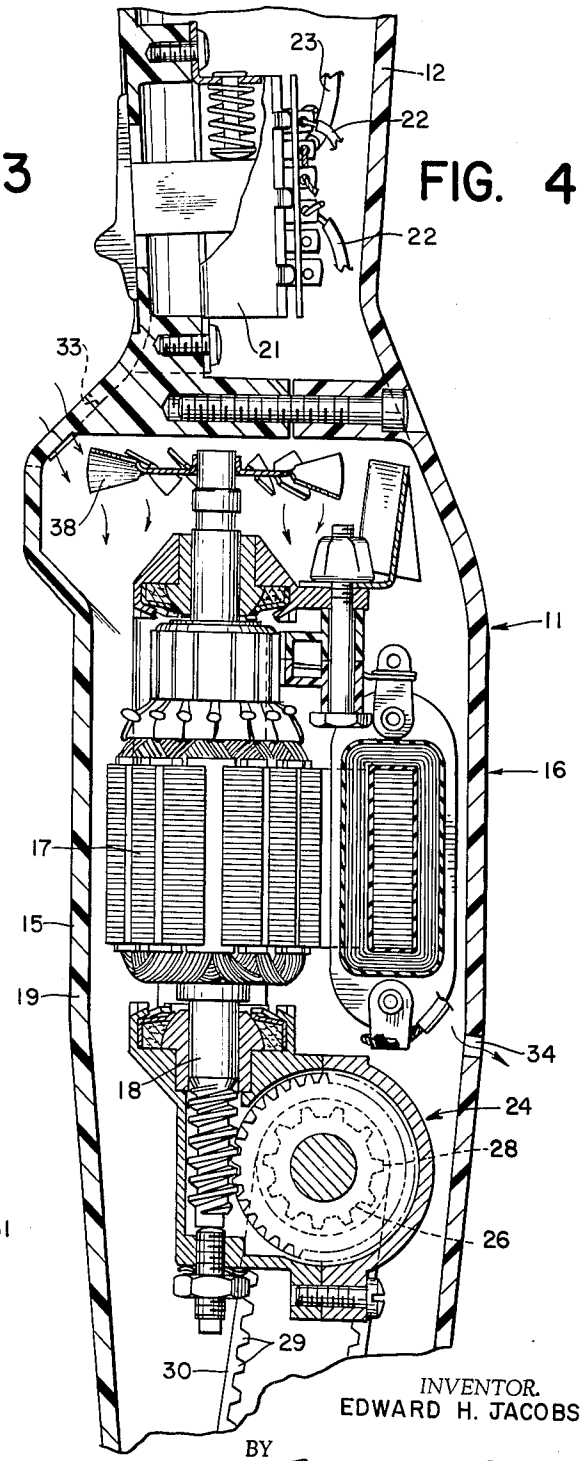


FIG. 4

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SHOE POLISHER POWER HANDLE

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3 Claims. (Cl. 15—23)

This invention relates to a power handle for use with an electric shoe polisher. More specifically, it relates to a power handle which imparts rotary motion to an implement such as a brush or an applicator pad.

Prior art shoe polisher power handles have been somewhat awkward to use due to poor arrangements of the implement and the motor with respect to the handgrip. Many of these prior art shoe polisher power handle assemblies have been constructed in the form of conventional mixers with the handle axis parallel to and displaced from the motor axis. This type of construction when applied to a shoe polisher results in a lack of balance which makes it difficult to guide the implement over the surface on which it is being used. Furthermore, in the mixer type arrangement it is difficult to see the implement while in use because of the large motor housing being located in the operator's line of vision to the implement. The prior art mixer type arrangements are characterized by the implement being mounted relatively close to the handle, wherein it is necessary for the user to bend over to a great extent to polish his shoes when standing or sitting. The brushes used with prior art mixed type shoe polishers have the bristles extending axially from a rotating cylindrical plate. This brush arrangement results in the bristles having different speeds, with the bristles nearest the perimeter of the plate moving at the highest speed, and the bristles nearest the center moving at the slowest speed and being quite ineffective for polishing. Moreover, rotary brushes with axially extending bristles are difficult to guide over a surface since they tend to move laterally over the surface.

It is an object of this invention to provide an improved shoe polisher power handle in which the components are arranged to provide a handle having an optimum weight distribution.

It is an object to provide an elongated shoe polisher power handle in which the implement is widely spaced from the operator's hand to reduce the amount of stooping necessary to polish his own shoes.

It is an object of this invention to provide an improved shoe polisher power handle and an improved brush for use with the handle in which all of the brush bristles are effective in polishing, and which provides a flow of drying and cooling air over the surface being polished.

It is another object of this invention to provide a plurality of cooling air-flow passageways through a power handle whereby all of the components in the handle and the entire handle casing may be cooled.

These objects are accomplished in accordance with this invention, in one form thereof, by providing a two-piece casing, each piece or section of which extends the full length of the handle. All of the components of the power handle are first secured to one of the sections and then the second section of the casing is placed over and secured to the first section. The casing is formed to provide a handgrip at one end and an implement mounting means at the portion adjacent the handgrip for the mounting of an electric motor therein. A switch is mounted in the handgrip

portion of the casing for energizing the motor. The casing is provided with apertures near each end of the motor, and at each end of the casing to provide for ventilation of the entire handle and increased cooling of the motor. A fan driven by the motor provides forced ventilation within the casing.

Other objects and further details of that which is believed to be novel will be clear from the following description and claims taken with the accompanying drawings wherein:

FIG. 1 is a perspective view of the shoe polisher power handle in use.

FIG. 2 is a side view of the shoe polisher power handle with a portion of the casing removed.

FIG. 3 is a top view of the shoe polisher power handle with the top section removed and with portions shown in section.

FIG. 4 is an enlarged side view of the shoe polisher power handle with a portion of the casing removed and with portions shown in section.

By reference to FIG. 1 of the drawings, it will be seen that when an operator in using the elongated shoe polisher power handle **11** grasps the handgrip portion **12**, the implement, which is shown as a brush **13**, is spaced at a considerable distance from the operator's hand. The provision of an elongated power handle **11** greatly reduces the extent of stooping required of the operator in polishing the shoe **14** he is wearing. The brush shown in FIG. 1 is formed with a central cylindrical plastic core **13***a* in which are imbedded the ends of radially extending brush bristles **13***b*. The bristles are cut so that all of the bristle tips are the same distance from the brush axis of rotation and therefore have the same tangential speed. Since the bristles extend radially from the plastic core **13***a*, the bristle tips are more widely spaced from the axis of rotation than if they extended axially from the core, and therefore move at a higher rate of speed which makes them more effective for polishing. The brush bristles **13***b* act as a centrifugal fan to draw air in around the plastic core **13***a*, and force it outwardly toward the bristle tips where it flows over the shoe **14** being polished and aids in evaporating the volatile solvents in the polish and in cooling the shoe surface being polished.

FIGS. 2–4 show the arrangement of the components within the power handle casing **15**. The principal components are arranged with their longest dimensions in alignment with the major axis of the handgrip **12** to provide an elongated power handle of reduced cross section. An enlarged portion **16**, as is perhaps better seen in FIG. **1**, is provided in the casing **15** adjacent the handigrip **12** for receiving an electric motor **17**. The motor **17** is mounted in the enlarged portion **16** with its shaft **18** in alignment with the major axis of the handgrip portion **12** of the casing. By aligning the motor shaft **18** with the major axis of the handgrip **12**, the casing can be made narrower, and at the same time desirable additional length is provided. The motor is secured to the top piece **19** of the two-piece casing by screws **20** as is best seen in FIG. 3. The motor **17** which is provided to drive the brush **13** is controlled by a switch **21**. The switch **21** is coupled to the motor by leads **22** and to a power source by lead **23**. opposite end. The casing is provided with an enlarged

A transmission comprising a right angle gear drive **24** and a belt drive **25** is provided for coupling the brush **13**

to the electric motor shaft 18. The right angle gear drive 24 turns a drive pulley 26. The drive pulley 26 and a driven pulley 27 are provided with teeth 28 which engage notches 29 in a drive belt 30. By using the belt and pulley arrangement the implement shaft may be mounted perpendicular to the major axis of the casing and the motor, without the need for a right angle gear drive at the implement mounting end 37 of the casing, as would be necessary were the motor shaft 18 extended through the narrow implement mounting portion 31 of the casing. Instead, the right angle gear drive 24 is positioned adjacent to the motor 17 in the enlarged portion 16 of the casing where space is readily provided for it. It can be seen by making reference to FIGS. 2 and 3 that the power handle may be made any desired length by extending the length of the narrow implement-mounting portion 31 of the casing, and by providing a longer drive belt 30.

In order to provide a plurality of air flow passageways through the casing 15, first intake openings 32 in the hand grip end of the casing, and second intake openings 33 in the enlarged portion 16 of the casing adjacent the handgrip 12 are provided. First exhaust openings 34 in the enlarged portion 16 of the casing adjacent the narrow implement-mounting portion 31, second exhaust openings 35 in the narrow implement-mounting portion 31, and third exhaust openings 36 in the narrow implement-mounting end 37 of the casing are provided. The motor 17 is provided with a fan 38 for pulling the cooling air into the casing through the intake openings 32 and 33, for forcing the air over the motor 17, and out of the casing through the exhaust openings 34, 35 and 36.

The openings 32 and 36 at the casing ends provide for ventilation of the entire casing including the handgrip 12 and the narrow implement-mounting portion 31. The intake openings 33 and the exhaust openings 34 in the enlarged portion 16 of the casing provide additional ventilation for the electric motor 17.

It can be seen that by arranging the components of the power handle, as shown in FIGS. 2–4, a balanced handle having an optimum weight distribution is provided in which the motor, the heaviest component, is mounted adjacent the handgrip, and between the handgrip and the implement engaging means to provide a power handle which is relatively easy to use. By mounting the motor 17 with its shaft in alignment with the handgrip, it is possible to make the casing of a narrower cross-section, and at the same time increase the length of the elongated casing.

While a preferred embodiment of the invention has been shown, various other modifications and embodiments of the invention will be apparent to those skilled in the art, and it is intended to cover by the appended claims all said modifications falling within the scope thereof.

What is claimed as new and desired to be secured by Letters Patent of the United States is:

1. An elongated shoe polisher power handle comprising:

(a) an elongated casing comprising a top section and a bottom section, each of which extends the full length of the power handle;

(b) said casing including a first portion adjacent one end formed as a handgrip, an enlarged said handgrip, and a narrow portion extending between said enlarged portion and the other end of said casing:

(c) said casing being provided with first inlet openings adjacent said handgrip in said enlarged portion, and second inlet openings at the end of said handgrip;

(d) said casing also provided with first outlet openings adjacent said narrow portion in said enlarged portion, second outlet opening in said narrow portion, and third outlet opening at said other end of said casing;

(e) an electric motor mounted on said top section within said enlarged portion adjacent said handgrip to provide a balanced handle having an optimum weight distribution;

(f) a switch mounted on said top section within said handgrip to control said motor;

(g) a drive pulley mounted in said casing;

(h) a gear reduction drive for connecting said motor to said drive pulley;

(i) an implement-mounting means provided as said other end of the casing, said implement-mounting means being widely spaced from said handgrip to provide an elongated handle;

(j) a drive belt for connecting said drive pulley to said implement-mounting means; and

(k) a fan driven by said motor for drawing cooling air into said handle through said inlet openings, causing it to flow over said motor, and discharging said cooling air from said handle through said outlet openings.

2. An elongated shoe polisher power handle comprising:

(a) an elongated casing including two sections each of which extends substantially the full length of the power handle;

(b) said casing including a first portion adjacent one end formed as a hand grip, an enlarged portion adjacent said hand grip, and a narrow portion extending between said enlarged portion and the other end of said casing;

(c) said enlarged portion having an inwardly curved left side wall and said narrow portion having a left side wall connected with the inwardly curved left side wall of said enlarged portion, the left side wall of said narrow portion being positioned so that it is as close as possible to the center line of said elongated casing;

(d) an electric motor mounted on one of said sections within said enlarged portion to provide a balanced handle having an optimum weight distribution;

(e) a shoe polisher implement mounting means positioned in the narrow portion of said casing and accessible through -an opening extending through the left side wall of said narrow portion, said implement mounting means being widely spaced from said hand grip to provide an elongated handle;

(f) a shoe polishing implement comprising a core having a plurality of bristles extending radially therefrom, said implement being connected to said mounting means so that the axis of said core is substantially perpendicular to the center line of the elongated handle;

(g) elongated drive means interconnecting said motor and said shoe polishing implement;

(h) said shoe polishing implement being located so close to the center line of said elongated handle that when the hand grip portion is gripped by the right hand of an operator with the palm of the hand on the right side wall of the grip portion and the fingers arranged along the left side wall of the grip portion, the entire polisher may be swung back and forth in a kind of pendulous action with the bristles positioned so close to the center line of said elongated polisher to minimize any undesirable lever arm action tending to twist the polisher out of the hand of the operator, whereby the shoe polisher may be readily manipulated to polish the shoes of the operator.

3. An elongated shoe polisher power handle as recited in claim 2 wherein:

(a) said casing is provided with first air inlet openings adjacent said hand grip in said enlarged portion, and second air inlet openings in said hand grip portion;

(b) said casing is also provided with outlet openings adjacent said narrow portion and said enlarged portion; and

(c) a fan is positioned in said enlarged portion adjacent to the hand grip portion of said casing, said fan being driven by said motor for drawing cool air into said handle through said inlet openings, causing it to flow over said motor, and discharging said cooling air from said handle through said outlet openings.

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