March 10, 1931. D. J. LEE 1,795,869

INTERCHANGEABLE POLISHING BRUSH

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Fig. 1.

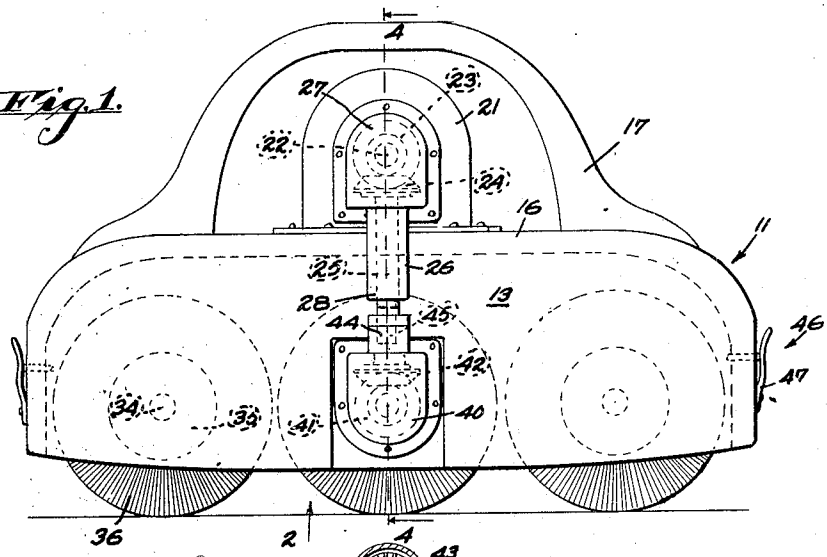


Fig. 2.

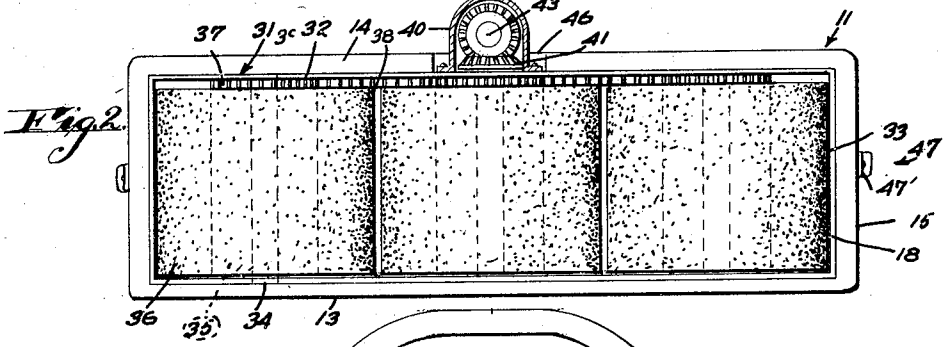
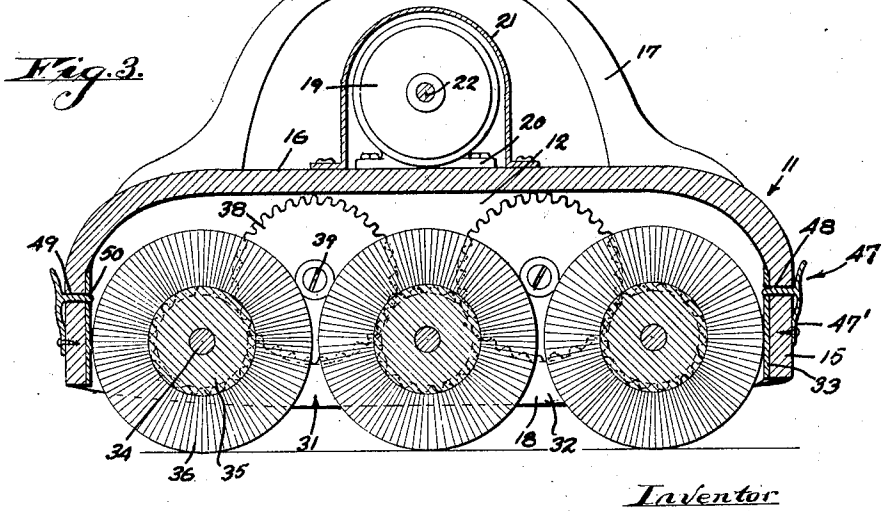


Fig. 3.



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Fig. 4.

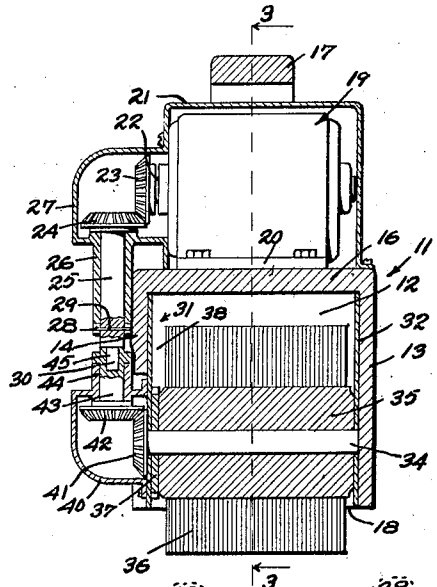


Fig. 5.

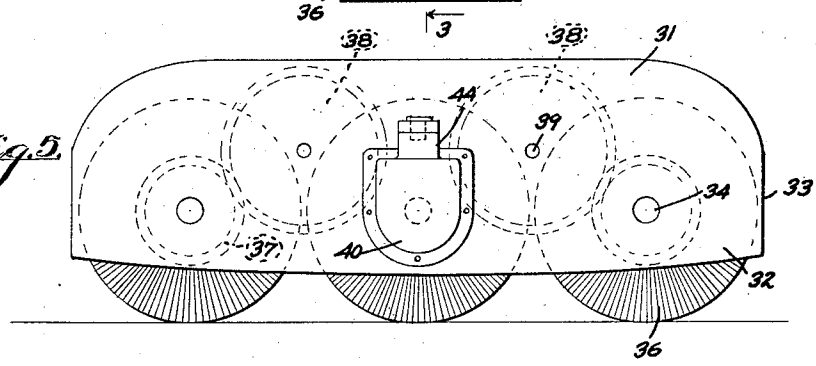
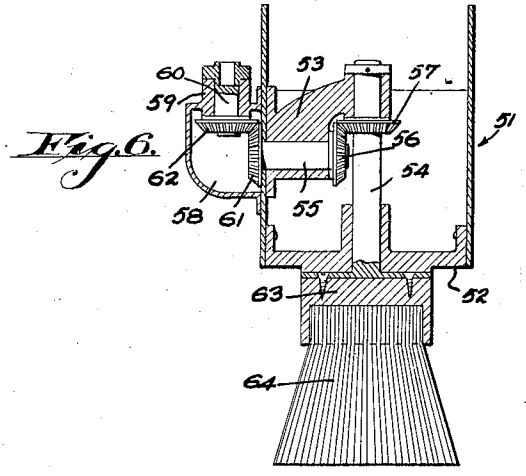


Fig. 6.



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UNITED STATES PATENT OFFICE

DANIEL J. LEE, OF LOS ANGELES, CALIFORNIA

INTERCHANGEABLE POLISHING BRUSH

Application filed April 3, 1929. Serial No. 352,192.

My invention is an interchangeable polishing brush having a dauber and polishing brushes interchangeable.

An object of my invention is the construction of an electrical or equivalent power operated brush which has interchangeable dauber and polishing brushes in the same holder and these being connected to the motor or other power drive.

In greater detail, a further object of my invention is a brush construction having a holder with a hollow space in the bottom and an electric motor mounted on the top. The holder is adapted to receive and house a casing construction carrying a rotary daubing brush for applying the polishing material to the surface to be treated and in which after removal of the rotary daubing brush a second casing may be inserted having a series of rotary polishing brushes.

A still further object of my invention is an interchangeable brush construction in which a power drive is used in connection with a suitable holder and from this power drive I may operate a rotary dauber brush rotating on a vertical axis or in substitution thereof I may operate polishing brushes rotating on horizontal axes.

A further detailed object of my invention is utilizing a housing hollow at the bottom and having an electric motor mounted thereon with the shaft horizontal and this motor driving a vertical shaft. Such shaft is adapted to link with a vertical stub shaft on a casing containing either a daubing brush rotating on a vertical axis or a series of polishing brushes rotating on horizontal axes.

My invention is illustrated in the accompanying drawings, in which,

Figure 1 illustrates a side view of my brush when using the polishing brushes;

Fig. 2 is an underneath view taken in the direction of the arrows 2;

Fig. 3 is a longitudinal section taken substantially on the line 3—3 of Fig. 4, in the direction of the arrows;

Fig. 4 is a vertical transverse section on the line 4—4 of Fig. 1 in the direction of the arrows;

Fig. 5 is a side elevation of the casing and brushes in the polishing brush device;

Fig. 6 is a vertical transverse section of a casing and a daubing brush, showing the connections to the motor.

In the illustrations I show a small or hand manipulated type of brush suitable for polishing shoes or relatively small articles. This employs a holder 11 having a hollow lower section 12 which is formed by the side walls 13 and 14, 14 being considered a front wall and the end walls 15 together with the top 16. A handle 17 is connected to the top and the housing has an open bottom 18.

An electric motor 19 is mounted on the flat top 16 the motor preferably having a base 20 attached thereto, this motor being enclosed in a cover 21 of suitable sheet material. The motor in the small type of brush is preferably inserted in the space formed by the handle 17. The motor is illustrated as having a shaft 22 operating a bevel gear 23 which bevel gear meshes with a second bevel gear 24 on a vertical shaft 25. This latter shaft is mounted in a sleeve 26 depending from the gear case 27, such gear case being attached to the cover 21. The vertical shaft has a ring 28 mounted thereon with an attaching pin 29 extending through the ring 28 and the shaft 25. The shaft preferably has a squared end 30. It will thus be seen that the motor drive extends downwardly along the main housing of the brush and that it may be controlled as to operation through the controlling of the motor.

A brush casing 31 is formed preferably with metal side walls 32 and end walls 33. These are shaped to approximately fit the interior of the hollow portion 12 of the main housing. This construction is shown as having three axles 34 having cores 35 with bristles 36 extending from the cores. The bristles form the polishing element of the brush. The cores are rigidly secured to the axles 34 and these axles have bearings in the front and back walls of the casing.

Each of the axles 34 has a gear 37 mounted on a shaft and these gears each mesh with an idler gear 38 mounted on the pivots 39 on the inside of the side walls 32 of the brush cas-

ing. The brush housings have a gear case 40 secured thereto, this gear case having a first bevel gear 41 on the central horizontal axle. This meshes with a bevel gear 42 on a vertical stub shaft 43; this latter shaft being journaled in a sleeve 44 extending upwardly from the gear housing. This stub shaft has a socket 45 to cooperate with the squared end 30 of the vertical shaft 25. The side of the casing has an opening 46 which accommodates the gear case 40 when the brush container is thrust therein from the bottom. The squared end of the upper vertical shaft forms a snug fit with the socket in the stub shaft and hence a drive may be transmitted from the motor to the three rotary brushes operating on a horizontal axis. The drive from the vertical shaft is to the center brush having the central gear thereon and thence by the idler gear 38 the drive is carried to the end brushes, thereby all of the brushes rotate in the same direction. The casings are held in the housing by means of spring catches 47 which have one end 47′ attached to the ends of the housing and have prongs 48 extending through openings 49 in the housing and through perforations 50 in the ends 33 of the removable brush casing.

In Fig. 6 I illustrate the construction for using a dauber brush. In this the removable casing is designated by the numeral 51; this has sides and ends with a bridging piece 52 at the bottom. A bracket 53 is secured to one of the side walls of this casing and in this bracket and in the bridging piece 52 there is journaled a vertical shaft 54 and also in the bracket there is journaled a horizontal shaft 55. These shafts have gears 56 and 57 meshing together. A gear housing 58 on the outside of the side wall of the casing has a journal 59 for a vertical stub shaft 60, this stub shaft having a square socket similar to the construction of Fig. 4. Gears 61 and 62 on the short horizontal shaft 55 and on the vertical stub shaft 60 mesh. This device is held in place in the handle housing in the same manner as illustrated in Fig. 3.

A brush holder 63 is attached to the lower end of the vertical shaft 54 and has bristles 64. This type of brush is designed to take up the material to be daubed on the article to be polished. By the rotation of the brush on the vertical axis this material is distributed over the surface of the article. After thorough distribution the casing having the daubing brush is removed from the handle housing and the polishing brush casing is inserted therein.

It will be seen that the connection of the drive shaft from the motor with the vertical stub shaft on either of the casings is a simple matter. If desired an electrical switch may be mounted either adjacent the motor or the handle to control the motor.

Various changes may be made in the principles of my invention without departing from the spirit thereof as set forth in the description, drawings and claims.

I claim:

1. A brush comprising in combination a holder having an open bottomed housing connected thereto, a casing detachably mounted in said housing and insertable through the bottom, a brush mounted on a horizontal axle in the casing, a stub shaft connected to the casing, a geared drive from the stub shaft to the axle, an electric motor on the holder and a detachable driving connection from the motor to the stub shaft.

2. A brush comprising in combination a holder having a housing open at the bottom, an electric motor mounted on top of the holder and driving a drive shaft on the side of the housing, a casing insertable in the housing and detachably connected thereto, a plurality of brushes on horizontal axes in the casing, one brush being geared to another, a stub shaft mounted on the casing and detachably connected to the said drive shaft and a driving connection from said stub shaft to the brushes.

3. A brush comprising in combination a holder having depending side walls and an open bottom, an electric motor mounted on top of the holder, a vertical shaft extending downwardly on one side of the holder forming a drive from the motor, a casing insertable in the holder from the bottom upwardly, means to latch the casing in the holder, the said casing having a vertical stub shaft with means to form a slip connection with the shaft on the holder, and a brush in the casing driven from said stub shaft.

4. A brush comprising in combination a holder having a top, side and end walls, and open at the bottom, with a vertical slot in one of the side walls, an electric motor mounted on the top and having a horizontal shaft, a vertical sleeve, a vertical shaft in the sleeve with a geared connection between said shafts, a casing having side and end walls to removably fit in the holder and insertable through the open bottom, with a latching means to latch the casing in the holder, a gear casing attached to the casing and fitting in the said slot, a stub shaft extending upwardly from the gear casing and having a slip connection with the vertical shaft on the holder, a second shaft in the casing driven from the stub shaft, and a brush driven from said second shaft.

In testimony whereof I have signed my name to this specification.

DANIEL J. LEE.