

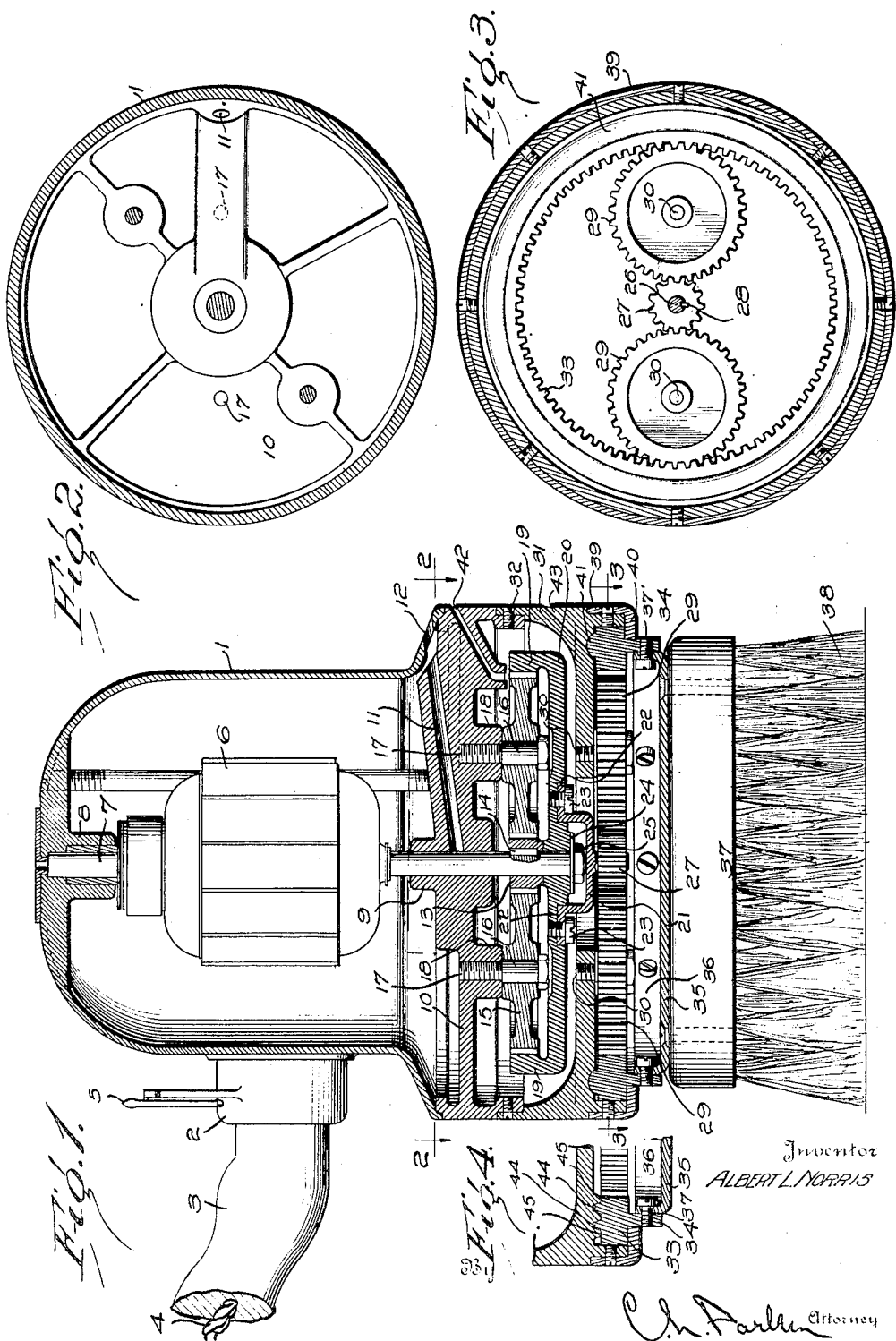
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A. L. NORRIS

ROTARY BRUSH

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UNITED STATES PATENT OFFICE.

ALBERT L. NORRIS, OF JACKSONVILLE, FLORIDA.

ROTARY BRUSH.

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To all whom it may concern:

Be it known that I, ALBERT L. NORRIS, a citizen of the United States, residing at Jacksonville, in the county of Duval and State of Florida, have invented certain new and useful Improvements in Rotary Brushes, of which the following is a specification.

This invention relates to rotary brushes, and more particularly to a brush having a casing in which a motor is arranged, the motor being connected to the brush by suitable gearing to drive it.

In the present invention, I have provided a motor driven rotary brush suitable for use in scrubbing clothes or in any other manner wherein a driven brush is desired. The brush is portable, permitting it to be moved over the surface of the cloth or other material being cleaned, and is provided with a handle for the purpose of easy manipulation.

A casing is provided for the reception of the motor by means of which the brush is driven and the brush is arranged on the bottom of the casing, permitting it to be passed over the material to be cleaned in a manner similar to an ordinary sad iron in pressing. Suitable gearing is provided to reduce the speed of the drive and thus permit the use of a small motor which is easily portable.

In the accompanying drawings, I have shown several embodiments of the invention. In this showing:

Figure 1 is a vertical sectional view,

Figure 2 is a horizontal sectional view on line 2—2 of Figure 1,

Figure 3 is a similar view on line 3—3 of Figure 1, and,

Figure 4 is a detail view of a modified form.

Referring to the drawings, the numeral 1 designates a casing which may be made of any suitable shape and size and which is provided with a tubular extension 2 for the reception of the handle 3. Lead wires 4 extend through the handle, and a suitable control member or switch 5 is mounted on the tubular extension 2. A motor 6 of any suitable type is arranged within the casing, the motor being provided with a main shaft 7 and supported in a bearing 8 in the top of the casing, and a bearing 9 in the bottom of the casing. The bearing 9 is carried by a base plate 10, secured to the casing in any

suitable manner. As shown, the shaft extends through the base plate. The base plate is provided with a passage 11, extending into the bearing 9 and registering at its outer end with an opening 12 in the casing to permit oil to be introduced to the bearing. Beneath the base plate, the shaft is provided with a pinion 13 secured to the shaft by means of a key 14. A plurality of idler gears 15 are loosely mounted on pins 16, the pins being provided with threaded portions 17 adapted to be received in bosses 18, carried by or formed on the base plate. These idler gears are adapted to mesh with a ring gear 19, formed on the flange of a plate 20, the plate being loosely mounted on the main shaft. A connecting plate 21 is arranged beneath the center of the plate 20, the connecting plate being provided with a flange 22 adapted to be received in a recess in the plate 20 and secured thereto by means of fastening elements 23. The plate 20 is maintained on the main shaft by means of a washer 24, and a nut 25. A stub shaft 26 is formed on the connecting plate and is adapted to receive a gear 27, keyed thereto, as at 28. This gear meshes with idler gears 29 which are mounted on stub shafts 30, carried by an intermediate gear housing 31. The intermediate gear housing is secured to the base plate by means of fastening elements 32. A ring gear 33 meshes with the gears 29 and this gear is provided with a downwardly extending flange 34. The brush is provided with a base plate 35, having a flange 36 which is secured to the flange 34 by means of fastening elements 37. The brush proper is secured to the plate 35, as shown. The brush comprises a body portion 37 having bristles 38 secured thereto. A ring 39 is secured to the intermediate gear housing and this ring is provided with a horizontal flange 40, adapted to be arranged beneath the ring gear 33 to retain it in position. The upper surface of the ring gear is provided with a convex rib 41, adapted to be received in a recess in the adjacent face of the intermediate gear housing to prevent the brush from wobbling.

The intermediate gears are oiled through an oil hole 42 in the base plate, and the gears 29 and 33 are oiled through an oil hole 43. In the form of the invention shown in Figure 4 of the drawings, the ring gear 33 is provided with a plurality of ribs 44 adapt-

ed to be received between similar ribs 45 carried by the intermediate gear housing to hold the brush steady at all times.

In operation, the brush is moved over the material to be cleaned, the operator grasping the handle 3. The motor is controlled by the switch or control member 5 and when the motor is on, the main shaft 7 drives the pinion 13 which in turn drives the idlers 15 and the ring gear 19. This drives the connecting plate 21, rotating shaft 26 and pinion 27. A pinion 27 drives the idler gears 29 which in turn drive the ring gear 33 to which the brush is connected.

It is to be understood that the forms of my invention herewith shown and described are to be taken as preferred examples of the same, and that various changes in the shape, size, and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claims.

I claim:

1. A brush comprising a casing, a motor arranged therein, a motor shaft driven by said motor, said motor shaft projecting from said casing, a pinion mounted on said motor shaft, a series of planetary gears meshing with said pinion, a connecting plate secured to a portion of said series of gears, a pinion secured thereto, a brush head rotatably mounted on said casing adjacent said pinion, and gearing meshing with said pinion and adapted to rotate said brush and head.

2. A brush comprising a casing, a motor arranged therein, a motor shaft driven by said motor, a pinion mounted on said shaft within said casing, a series of planetary gears meshing with said pinion, said casing being provided with an opening adjacent said series of planetary gears, a rotating member secured to a portion of said series of planetary gears and projecting through said opening, a brush head rotatably mounted on the exterior of said casing adjacent said opening, and connections between said connecting plate and said brush head to drive said brush head.

3. A brush comprising a casing, a motor arranged therein, a motor shaft driven by said motor, a pinion mounted on said shaft, a series of planetary gears arranged in said casing and meshing with said pinion, a rotating member connected to a portion of said series of planetary gears, said casing being provided with an opening through which a portion of said rotating member extends, a pinion carried by said rotating member exteriorly of said casing, a brush

head rotatably mounted on said casing adjacent said pinion, and gearing meshing with said pinion and adapted to rotate said brush head.

4. A brush comprising a casing, a motor arranged therein, a motor shaft driven by said motor, a base plate arranged beneath said casing, said motor shaft being adapted to extend through said base plate, a pinion mounted on said motor shaft, a series of planetary gears meshing with said pinion, said series of gears including a ring gear, a connecting plate secured to said ring gear, a pinion secured thereto, a brush head rotatably mounted on said casing adjacent said pinion and gearing meshing with said pinion and adapted to rotate said brush head.

5. A brush comprising a casing, a motor arranged therein, a motor shaft driven by said motor, a base plate arranged beneath said casing, said motor shaft extending through said base plate, a gear housing arranged beneath said base plate and secured thereto, a pinion mounted on said motor shaft beneath said base plate, gearing arranged in said housing and meshing with said pinion, said housing being provided with an opening, a stub shaft extending through said opening, a ring gear arranged beneath said housing, gearing connecting said shaft, to said ring gear, a brush head secured to said ring gear, and a member secured to said motor housing and engaging said ring gear to prevent displacement thereof.

6. A brush comprising a casing, a motor arranged therein, a motor shaft driven by said motor, a base plate arranged beneath said casing, said motor shaft extending through said base plate, a gear housing arranged beneath said base plate and secured thereto, a pinion mounted on said motor shaft beneath said base plate, a series of planetary gears meshing with said pinion, a connecting plate secured to a portion of said series of planetary gears, said housing being provided with an opening through which said connecting plate extends, a pinion carried by said connecting plate, a brush head rotatably mounted on said casing beneath said housing, and connections between said pinion and said brush head to drive the brush head.

In testimony whereof I affix my signature in presence of two witnesses.

ALBERT L. NORRIS.

Witnesses:

R. L. MORGAN,

A. G. DAVIS.