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ROTARY BRUSH

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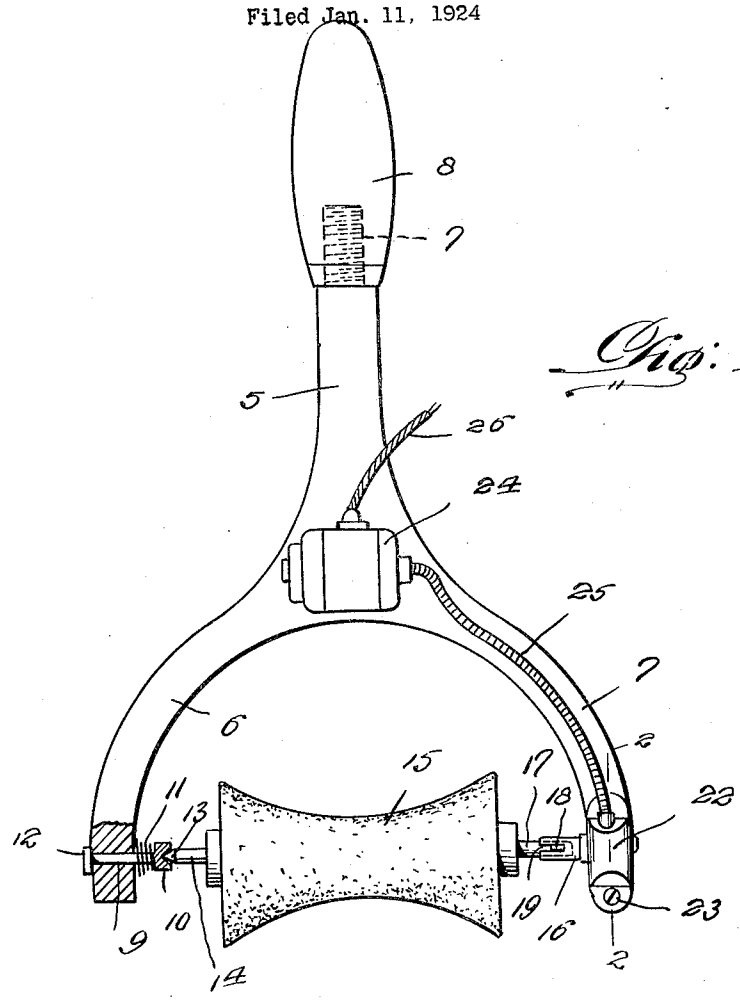
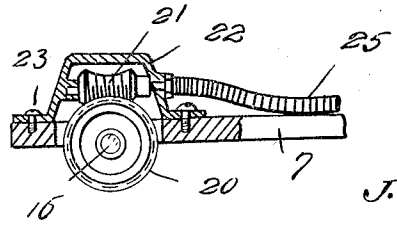



Fig. 1.

Fig. 2.




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# UNITED STATES PATENT OFFICE.

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## ROTARY BRUSH.

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This invention relates to certain new and useful improvements in rotary brushes and has particular reference to a device of this kind adapted to be manually directed over the surface to be cleaned and embodying a motor for causing rotation of the brush head.

The primary object of the invention is to generally simplify and improve devices of the above kind, whereby the same may meet with all of the requirements for a successful commercial use.

Another object of the invention is to provide for the ready removal or replacement of the brush head, whereby brush heads of various styles and kinds may be interchangeably employed in accordance with the requirements of the specific use to which a device is put.

Still another object of the invention is to provide an improved means for driving the brush head and detachably mounting the same in place.

A still further object of the invention is to provide a brush including a handle composed of a shank bifurcated at one end and provided with a removable hand grip at the other end whereby an extension handle shank may be interposed between the bifurcated portion and the hand grip, the bifurcated portion being provided with means for the removable mounting of a brush head therein, and for facilitating driving of said brush head.

Other objects will become apparent as the nature of the invention is better understood, and the same consists in the novel form, combination, and arrangement of parts hereinafter more fully described, shown in the accompanying drawing and claimed.

In the drawings, wherein like reference characters indicate corresponding parts in the two views:—

Figure 1 is a plan view partly broken away away and in section, of a rotary brush constructed in accordance with the present invention, and

Figure 2 is an enlarged fragmentary detail sectional view, taken substantially upon the line 2—2 of Figure 1.

Referring more in detail to the drawing, the present invention embodies a handle composed of a shank 5, that is relatively short and which is bifurcated at one end to form a fork member composed of a pair of arms 6 and 7, and that has a removable hand grip member 8 at its other end. The hand grip member 8 may be provided with a threaded socket for detachable engagement with a screw threaded stem 7 provided upon the last mentioned end of the shank 5 as shown in Figure 1, so that when the hand grip 8 is removed an extension handle shank may be interposed between the shank 5 and the hand grip 8 for lengthening the handle in case it is desired to move the brush head over a remote or elevated surface.

The arm 6 is provided with a transverse opening in which is slidably mounted a rod 9 that has a bearing block 10 fixed upon the inner end thereof, said rod being normally spring pressed inwardly by means of a compression spring 11 interposed between the arm 6 and the bearing block 10. The rod 9 is provided upon its outer end with a head 12 to limit the inward sliding movement of the same under the influence of the spring 11, and the bearing block 10 is provided with a conical socket in its inner face for engagement by the pointed end 13 of a shaft 14 which carries the cylindrical rotary brush head 15. The arm 7 has a stub shaft 16 suitably journalled therein, co-axial with the rod 9, and this stub shaft has a socket at its inner end for removable reception of the other end portion 17 of the shaft 14, said end portion 17 of the shaft being provided with a transverse pin 18 for engagement in opposed longitudinal slots 19 provided in opposite sides of the walls of the sockets formed in the shaft 16 whereby the brush shaft 14 is caused to rotate when rotation is imparted to the stub shaft 16, and whereby removal of the brush head is readily permitted.

The brush head 15 shown is in the form of a concaved cylinder, but other forms of brushes may be employed to suit the specific requirements of the use to which the brush is put.

As shown clearly in Figure 2, a worm gear 20 is keyed upon the stub shaft 16, and this gear meshes with a worm 21 that is suitably journalled longitudinally of the arm 7 within a combined gear casing and bracket 22 that is secured upon said arm 7 by means of screws 23 or the like.

A small electric motor 24 is suitably secured to the handle at the juncture of the shank 5 with the arms 6 and 7, and the armature shaft of this motor is connected to

a flexible shaft 25 that is also connected to the worm 21, it being noted that the feed wires 26 of the motor 24 may be provided with a suitable attachment plug for engagement in the plug socket of any form of house wiring system.

In use, the motor 24 is started to drive the flexible shaft 25, and this rotation is imparted to the brush head 15 through the gearing described. Should it be desired to remove the brush for renewal or repair purposes or for substituting a different form of brush thereof, it is simply necessary to move the brush end-wise in the direction of the arm 6 so as to cause compression of the spring 11 until the pin 18 disengages from the slot 19 in the shaft 16. The brush head is then bodily moved outwardly from between the arms 6 and 7, and a reversal of this operation will result in replacing the brush.

From the above description, it is believed that the construction and operation as well as the advantages of the present invention will be readily understood and appreciated by those skilled in the art.

What I claim as new is:—

A device of the class described comprising a handle having a fork at its outer end, the free ends of the arms of the fork being provided with opposite bearing openings, bearings mounted in said openings, one of said bearings being rotatable and provided with a driving gear, a gear casing mounted on one of said arms, said one arm and casing serving to house said gear, a worm located in said gear casing and in mesh with said gear, a motor mounted on the handle and connected with said worm, and a rotary tool arranged between said arms, said tool being mounted at its opposite ends in said bearings and being keyed to the rotatable bearing.

In testimony whereof I affix my signature.

JOSEPH P. McDONALD.