Nov. 7, 1939. S. TERAUCHI 2,178,943

ROTARY BRUSH

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Fig. 1.

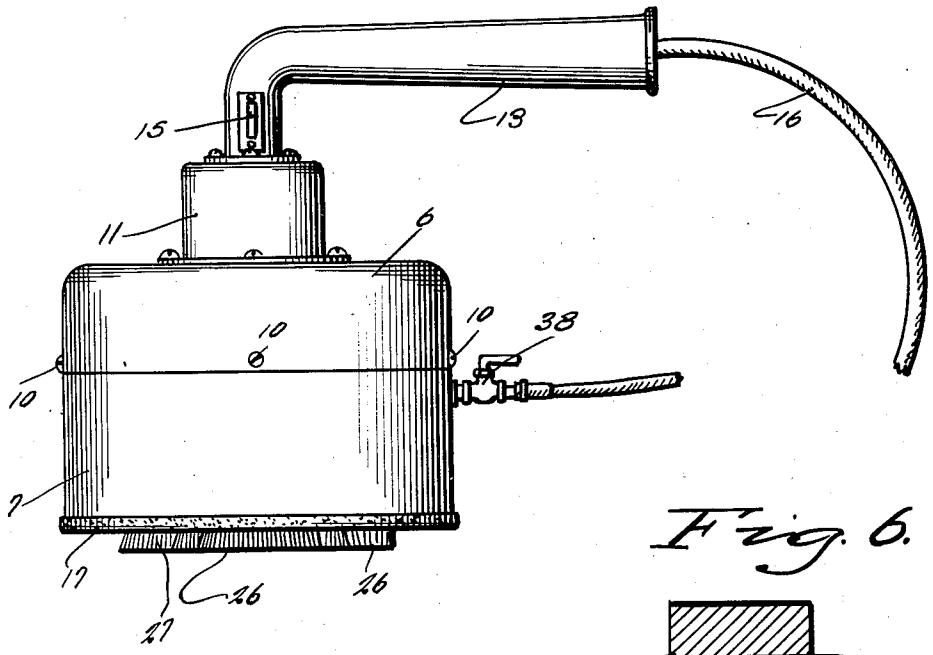


Fig. 6.

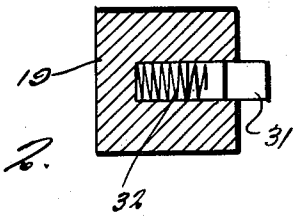


Fig. 2.

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Fig. 3.

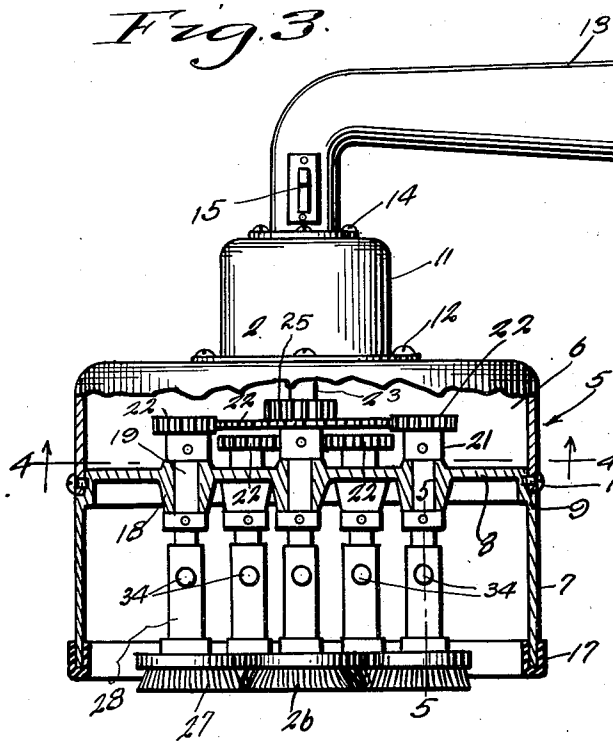


Fig. 5.

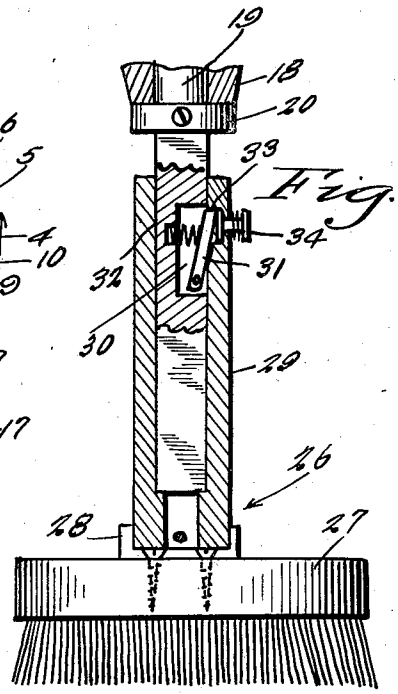
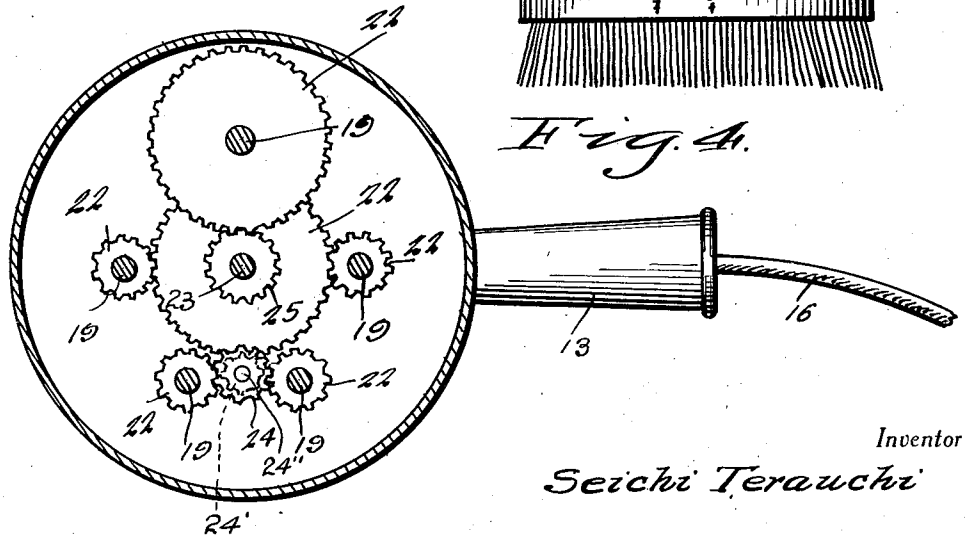


Fig. 4.



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UNITED STATES PATENT OFFICE

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ROTARY BRUSH

Seichi Terauchi, Lanai City, Territory of Hawaii

Application August 23, 1938, Serial No. 226,358

2 Claims. (Cl. 15—28)

This invention relates to rotary brushes and more particularly to a brush particularly designed for washing and polishing automobile bodies, and an object of the invention is to provide a brush of this character embodying a motor connected to the brush by suitable gearing for driving the latter, and also means associated with the head of the brush for spraying water, or other cleansing fluid on the surface being washed or polished as the case may be.

The invention together with its objects and advantages will be best understood from a study of the following description taken in connection with the accompanying drawings wherein:

Figure 1 is a side elevational view of the brush,

Figure 2 is a bottom plan view thereof,

Figure 3 is a view taken substantially on the line 3—3 of Figure 2,

Figure 4 is a horizontal sectional view taken substantially on the line 4—4 of Figure 3,

Figure 5 is a detail sectional view taken substantially on the line 5—5 of Figure 3, and

Figure 6 is a fragmentary transverse sectional view through a spindle illustrating certain details hereinafter more fully referred to.

Referring to the drawings by reference numerals it will be seen that in accordance with the present invention the improved brush comprises a head 5 composed of two sections one of which, 6, presents a gear casing and the other of which, 7, presents a brush casing.

The head section 7 has an integral end wall 8 that fits within the section 6, and at the end 8 thereof section 7 is reduced in diameter to fit snugly within the casing 5 and to present a continuous external shoulder 9 that abuts the peripheral wall of the section 6.

The sections 6 and 7 are secured in assembled relation through the medium of screws or other fastening elements 10 that are threadedly engaged with the walls of the casing sections as clearly shown.

Suitably mounted on the section 6 is an electric motor 11, the casing of which is provided with an apertured flange through the medium of which and fastening elements 12 the casing is secured to said section 6.

Extending from the casing of the motor 11 is a suitable handle 13 that at one end is provided with an apertured flange through the medium of which and screws or other fastening elements 14 said handle is secured to the casing of the motor 11.

Carried by the handle 13 adjacent the end thereof secured to the casing of the motor 11 is a suitable electric switch 15 for the motor 11. Also the handle 13 as shown is hollowed out to accommodate the extension cord 16 for the motor.

At the open end thereof the peripheral wall of the casing section 7 has suitably mounted thereon an annular channel member 17 of rubber or other suitable material that serves as a guard to protect injury to the surface being cleaned or polished by contact of the section 7 with such surface.

The wall 8 of head section 7 is provided with a plurality of bearings 18 in which are journaled spindles 19. Spindles 19 are provided with collars 20 adjustable thereon to abut the lower ends of the bearings 18 while on the upper ends of the spindles 19 there are secured by screws or other fastening elements the hubs 21 of gears 22 that are accommodated within the section 6 of the head.

The gears 22 are of varying diameter as shown in Figure 4 and provide a gear train for driving the spindles 19 from the shaft 23 of the motor. In this connection it will be noted that the shaft 23 of the motor has thereon, a small gear 25 which meshes with a large gear 22 and said motor shaft also has attached thereto a large gear 22 which meshes with small gears 22 on two of the spindles 19 which are placed at opposite sides of the shaft 23. The large gear 22 on the shaft 23 meshes with a small pinion 24' on a stub shaft 24'' and this shaft carries a pinion or small gear 24 which meshes with gears 22 on the two remaining spindles 19. Thus the spindle 19 having the large gear 22 thereon is driven at a slower speed than are the other spindles and this slower driven spindle is adapted to have a polishing brush attached thereto which is to receive the polish, the other brushes acting to distribute the polish and polish the surface against which the brush device is acting.

For each spindle 19 and the motor shaft 23 there is provided a brush 26 and each brush 26 includes a bristle-equipped head 27 to which is secured a socket 28 that receives one end of a sleeve 29 that is secured within the socket 28 in any suitable manner. Sleeve 29 is provided with a bore complemental to the lower end of a spindle 19 and is adapted to be sleeved on the lower end of the spindle 19 as shown in Figure 5.

Also each spindle 19 and said motor shaft is provided on the lower end thereof with a recess 30 in which is pivoted a spring-biased latch 31, the spring for the latch being indicated by the reference numeral 32.

Also each sleeve 29 adjacent the upper or free

end thereof is provided internally with a keeper recess 33 into which the free end of the latch 31 is adapted to spring when the sleeve 29 is in final position on the spindle 19 whereby to lock the sleeve onto the spindle against longitudinal movement and to rotate with the spindle.

At the recess 35 thereof sleeve 29 is provided with a spring-pressed releasing button 34 and it will thus be seen that to remove the sleeve 29 from the spindle 19 button 34 is pushed inwardly to push the latch 31 inwardly against the action of spring 32 and out of engagement with the recess 33 thus permitting the sleeve 29 to be longitudinally removed from the end of the spindle. It will thus be seen that I have provided means whereby the brush may be quickly and easily and detachably connected with its spindle, thus permitting one type of brush to be readily removed and a brush of a different type to be substituted therefor.

In connection with the above it will be borne in mind that the device is primarily intended for washing and polishing automobiles and thus it will be desired to use, for washing purposes, bristle brushes, and for polishing purposes brushes, the heads of which may be in the form of disks surfaced with felt or other suitable material for obtaining a high polish or lustre to the surface being worked upon.

Also in accordance with the present invention there is suitably provided within the section 7 of the head 5 a distributor pipe 35 provided with suitable branches and outlets 36, there being preferably one outlet or branch 36 for each brush and suitably positioned relative to its brush for spraying water or other cleansing liquid on the surface being treated.

Pipe 35 at one end thereof is suitably connected as at 37 with a hose or the like 38 to be in turn connected with a source of supply.

It will thus be seen that with this brush water or other cleansing fluid may be played onto the surface being treated during the scrubbing of such surface.

Also, and as clearly shown in Figure 2 the connection 37 between pipe 35 and hose 38 is preferably in the form of a valve so that the supply of water may be controlled as found desirable. It will be understood that when the device is used for polishing a surface the valve 38 is closed and polishing material is placed on the large polishing brush which is attached to the spindle 19 driven by the large gear 22, this brush being made larger than the other brushes as shown in Figure 2 and to rotate at a slower speed than the other brushes which will apply the polish to the surface and the other brushes will distribute the polish and at the same time polish the surface.

It is thought that a clear understanding of the construction utility and advantages, and manner of using a scrubbing device or cleansing element embodying the features of the present invention will be had without a more detailed description.

Having thus described the invention what is claimed as new is:

1. A brush device of the class described comprising a casing, a plurality of spindles rotatably supported in the casing, brushes connected with the spindles and projecting from the casing, one brush being adapted to have polish applied thereto, drive means and means for driving the last-mentioned brush at low speed from the drive means and the other brushes at a high speed.

2. In a brush device of the class described, a casing, brushes rotatably arranged in the casing and one brush being larger than the other and acting to receive polish to act as a polish spreader, said brushes projecting from the casing, drive means and means for rotating the polish spreader brush at low speed from the drive means while the other brushes are being driven at high speed from the drive means.

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