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ROTATABLE BRUSH

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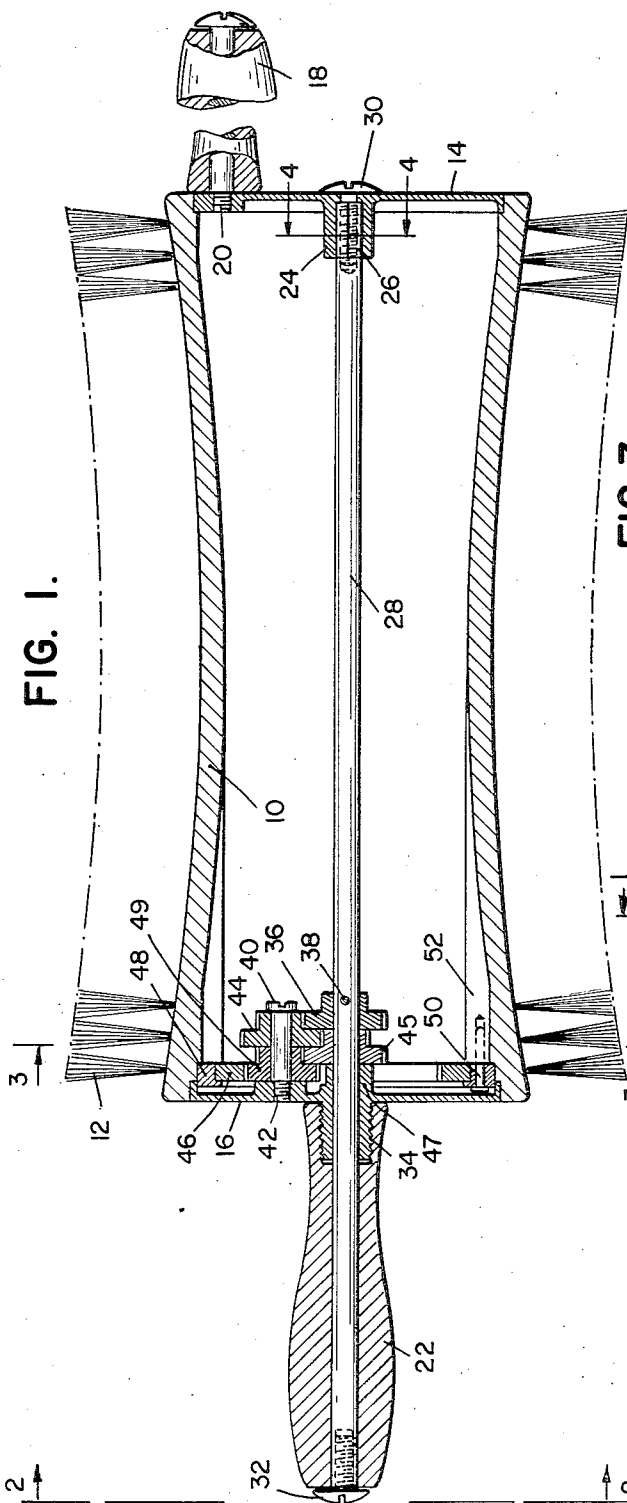


FIG. 1.

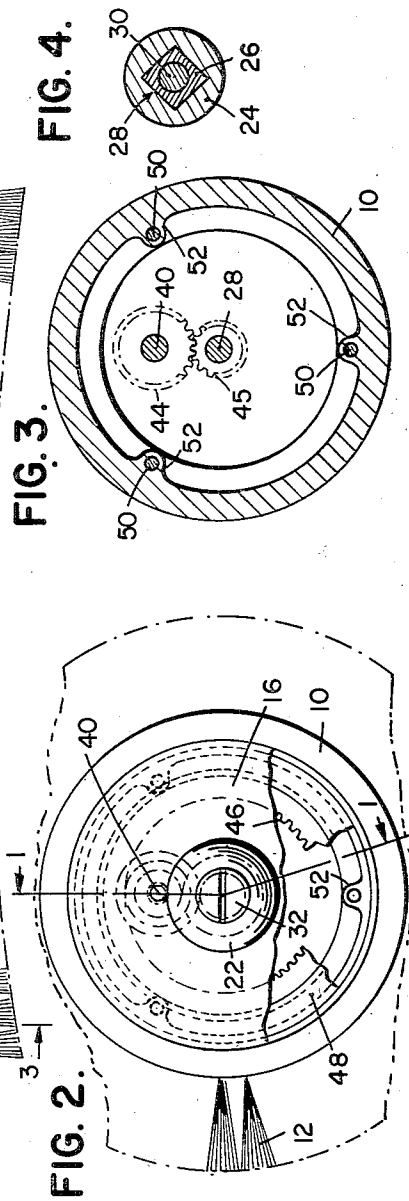


FIG. 2.

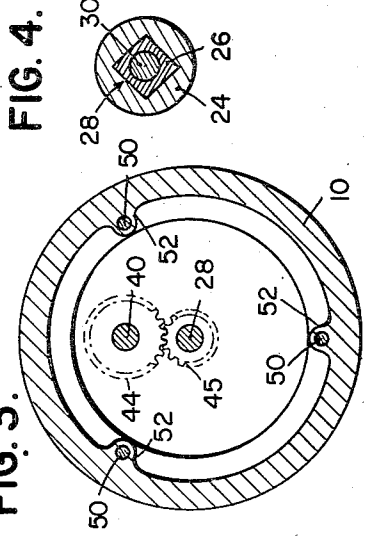


FIG. 3.

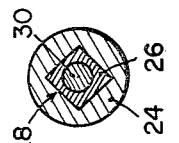


FIG. 4.

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**ROTATABLE BRUSH**

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2 Claims. (Cl. 15—25)

This invention relates to an improved rotatable brush and has for one of its principal objects the provision of a device of the class described which is particularly adapted for brushing hair by barbers or similar professional operators.

One of the important objects of this invention is to provide a brush for the hair and scalp, which can be manually rotated by the barber or other professional operator or by the user if so desired and which will provide a greater ease of handling and manipulating the hair of the subject for various purposes, including new types of hairdo or other arrangements.

Still another object of the invention is the provision of a rotatable brush for the hair or for other purposes, which includes a system of gears whereby the speed of rotation of the same is increased to a rather considerable extent for better operating results.

Yet another object is to provide a rotatable brush construction which will be easily cleaned and of such character as to make it available for disassembling and sterilization with little expenditure of time and labor.

Other and further important objects of the invention will be apparent from the disclosures in the accompanying drawings and following specification.

The invention, in a preferred form, is illustrated in the drawings and hereinafter more fully described.

In the drawings:

Figure 1 is a vertical sectional view of the improved rotatable brush of this invention showing internal construction.

Figure 2 is an end view of the brush, looking from the line 2—2 of Figure 1, parts being broken away to show interior construction, and this view includes a section line upon which the showing of Figure 1 is based.

Figure 3 is a vertical section on the line 3—3 of Figure 1, looking in the direction indicated by the arrows.

Figure 4 is a section, slightly enlarged, on the line 4—4 of Figure 1, looking in the direction indicated.

As shown in the drawings:

The reference numeral 10 indicates generally the case or housing of the improved rotatable brush of this invention. This is preferably composed of some plastic or it may be of metal, and while somewhat cylindrical in shape, is gradually restricted towards its middle portion as shown, so as to more nearly conform to the outlines of a human head when used with exterior bristles attached. The bristles are indicated at 12 and can be fitted into the case 10 in any suitable or obvious manner.

A plate 14 is fitted into one end of the case 10 in such a manner as to provide a free running fit, and a similar plate 16 is likewise fitted into the other end of the case 10.

An operating handle 18, mounted on a shaft or the like 20, is attached to the outer face of the plate 14, adjacent its periphery; and another handle 22, which is adapted to be held more or less stationary when the brush is used, is attached to the plate 16 at the center thereof.

The plate 14 includes a central internal boss 24 having a square opening therein, into which is fitted the cor-

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respondingly squared end 26 of a shaft 28. This shaft passes longitudinally through the center of the casing 10 and extends through a corresponding central longitudinal opening in the handle 22.

A machine screw, or the like 30, is adapted to be removably fitted into a correspondingly threaded opening in the square end 26 of the shaft 28, and when this is in position, it securely holds the plate 14 onto the shaft 28 and also serves to hold the handle 22 on the outer end of the shaft, this fastening construction including another screw at that end, which is indicated by the reference numeral 32.

The handle 22 is interiorly screw-threaded at its inner end and is accordingly fastened onto a similarly screw-threaded external boss 34, which is integral with the plate 16.

As best shown in Figure 1, a gear 36 is fastened onto the shaft 28 by means of a pin 38, and this gear is inside the case 10 but adjacent the plate 16 at the left hand end.

A stub shaft 40, which may be a shouldered screw, is fitted into an opening 42 in the plate 16, and a composite two-step gear 44 is rotatably mounted on this stub shaft and its smaller section is in mesh with the gear 36.

The larger section of this composite gear 44 is in mesh with a two-step gear 45, which is rotatably positioned on the shaft 28 between the gear 36 and an internal integral boss 47, which forms part of the external boss 44. The larger portion of this two-step gear 45 is in mesh with a similar two-step gear 49, which is mounted for free rotation on the stub shaft 40 and behind the gear 44. The larger section of this composite gear 49 is in mesh with an internal gear 46 which is fastened by means of an adapter or the like 48 to the end of the case 10 and inside the same. This fastening preferably includes three or more pins 50 passing through openings in the adapter 48, and into correspondingly aligned openings in internal ribs 52, which are integral with the case 10 and spaced at equi-distant intervals about the periphery thereof, as best shown in Figures 2 and 3. All the gears are stock gears.

In operation the handle 22 is grasped by one hand of the operator and the handle 18 grasped by the other hand, and this handle 18 rotated about the shaft 28 as a center. Rotation of the handle 18 and its plate 14 will impart a similar movement to the shaft 28 and this will, along with its plate 16, correspondingly turn freely in the handle 22, which is held stationary. However, the gear 36, being fixed to the shaft 28, will rotate accordingly and will turn the gear 44 about the stub shaft 40. Rotation of the gear 44 will accordingly cause a rotation of the gears 45 and 49 and the internal gear 46, which, being fixed by way of the adapter 48 to the case 10, will cause a corresponding rotation of the case and the bristles.

The gear assembly is so designed that an increase of speed of approximately three to one is imparted to the brush itself, whereby a much better action results and a great deal of time saved.

For cleaning purposes the screw or bolt 30 is removed, allowing the shaft 28 to be pulled away from the assembly, at that end whereupon the handle 22 with its attached plate 16, the shaft 28 and its gear assemblage can be readily removed. The plate 14 with its handle 18 will also come away from that end of the cylinder or case 10, whereupon the case with the bristles can be thoroughly cleaned and sterilized with little or no difficulty.

The handle and plate assembly 14—18 is likewise susceptible of ready cleaning and sterilizing, and the gears 36, 44, 45 and 49 can be composed of material which will withstand sterilizing either by heat or chemicals, and which require little or no lubrication. After cleaning and sterilizing the apparatus can be very readily re-assembled for further and future use.

It will be evident that herein is provided an improved

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type of rotatable hair brush, which is peculiarly adapted for modern barbering and hair dressing work, in that it provides means for brushing and dressing the hair for up-to-date styling with efficiency and despatch, while at the same time presenting an apparatus which will meet the approval of all sanitary authorities and inspectors.

I am aware that many changes may be made and numerous details of construction varied throughout a wide range without departing from the principles of this invention, and I therefore do not propose limiting the patent granted hereon otherwise than as necessitated by the prior art.

I claim as my invention:

1. A rotatable brush comprising a casing of somewhat cylindrical shape, a plurality of bristles mounted in the exterior surface of the casing, end-plates for the casing, a handle positioned in each end-plate, the handle for one end-plate being mounted centrally thereof, the handle for the other end-plate being eccentrically mounted, means for fastening the end-plates in the cylinder said end-plates being freely rotatable with respect to the casing, a central longitudinal shaft removably connecting the end-plates, said shaft fixed in said one of the plates and rotatable with respect to the other plate, and a system of gears connecting the shaft, said one end-plate and the casing for in-

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creasing the speed of rotation of the casing when the eccentrically mounted handle is employed to rotate its end-plate.

2. A device as described in claim 1, wherein there are two gears on the shaft, one fixed thereto and the other rotatable with respect thereto and wherein a stub shaft is mounted in the adjacent end-plate, said stub shaft having two gears thereon, both being rotatable with respect thereto and in mesh with the gears on the main shaft, the adjacent end of the casing having an internal gear fixed therein, said internal gear being in mesh with one of the gears on the stub shaft.

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