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REVERSIBLE ELECTRIC TOOTHBRUSH

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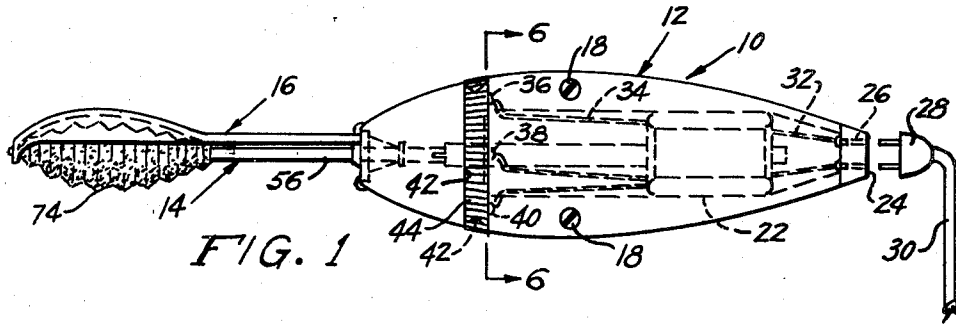


FIG. 1

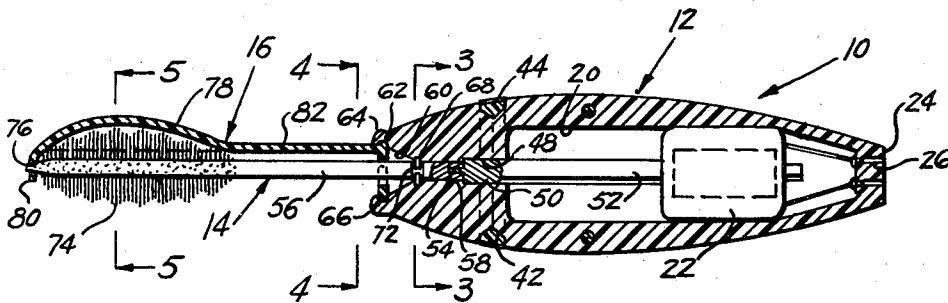


FIG. 2

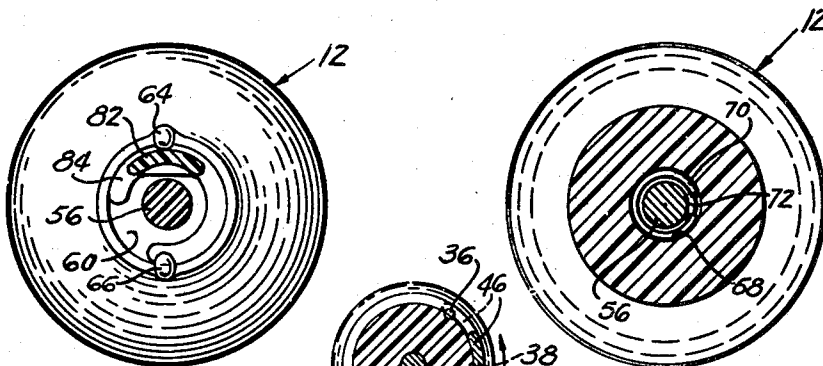


FIG. 4

FIG. 3

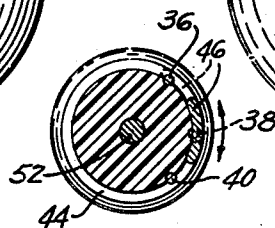


FIG. 6

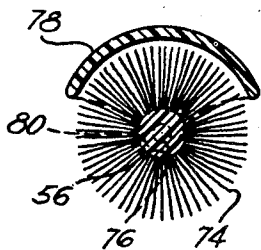


FIG. 5

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## REVERSIBLE ELECTRIC TOOTHBRUSH

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2 Claims. (Cl. 15—23)

This invention relates generally to toothbrushes, and is more particularly concerned with a toothbrush of the power driven type.

A primary object of invention is to provide a novel power driven toothbrush wherein the rotary brush member thereof may be reversibly driven for cleaning both the upper and lower teeth.

A further object of invention in conformance with that set forth is to provide a novel power driven toothbrush of the character involved incorporating novel means for mounting a toothbrush assembly and housing on a hollow handle wherein said handle contains a reversible electric motor drivably engageable with a brush shaft, said housing member incorporating three-position switch means for controlling the direction of rotation of the electric motor and accordingly the direction of rotation of the toothbrush assembly.

And yet another object of invention in conformance with that set forth is to provide a novel power driven toothbrush of the character involved which is readily and economically manufactured, easily used and maintained, and highly satisfactory, practical and acceptable for the purpose intended.

These together with other objects and advantages which will subsequently become apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawing forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a side elevational view of the novel power driven toothbrush, showing by means of dotted lines the electric motor, and wiring thereof;

Figure 2 is a longitudinal sectional view taken through the power driven toothbrush, portions being broken away and shown in section for clarity;

Figure 3 is an enlarged sectional view taken substantially on line 3—3 of Figure 2;

Figure 4 is an enlarged sectional view taken substantially on line 4—4 of Figure 2;

Figure 5 is an enlarged fragmentary sectional view taken substantially on line 5—5 of Figure 2; and

Figure 6 is a sectional view taken substantially on line 6—6 of Figure 1, showing details of the three-position switch means of the invention.

Referring to the drawing in detail, the power driven toothbrush is indicated generally at 10 including a hollow housing 12, toothbrush assembly 14 and a cover 16 for the toothbrush assembly.

The handle 12 may be constructed of any suitable material, plastic being especially desirable for this purpose, being substantially elongated and constructed of two mating halves if preferred retained together by means of suitable screws 18 cooperating in suitably conformed bore portions in the halves. The hollow interior of the handle 12 as indicated at 20 has suitably secured therein a longitudinally extending reversible electric motor 22 of any conventional character. Opening into the rear end

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24 of the handle is a suitable female socket portion 26 for receiving therein a male socket element 28 connected by the electric cord 30 to a suitable source of electric energy. The female connector 26 is suitably wired to the electric motor 22, as indicated at 32 and 34, the wiring 34 terminating in three electrical contacts 36, 38 and 40, see Figures 1 and 6, for example, and circumposed in a suitable groove 42 extending about the outer periphery of the handle 12 is a control ring 44 which has integral therewith a contact plate 46, see Figure 6, which is extendible between the contact 36 and 38, or 38 and 40. Although a specific switch means has been disclosed, any suitable switch means may be incorporated in the handle for controlling the reversible electric motor.

Extending longitudinally through the handle 12 and opening into the end opposite the end 24 thereof is a longitudinal bore portion 48 receiving the terminal end 50 of a drive shaft 52 rotated by the electric motor 22. The terminal end 50 terminates in a diametrical tongue portion 54 providing a portion of means for drivably connecting the electric motor 22 to a brush shaft 56 which incorporates a diametrical slot portion 58 in the end thereof.

The bore portion 48 opens into the end of the handle 12 in an outwardly flared portion 60 terminating in an annular recess 62, see Figure 2, about the inner periphery thereof, and integral with the handle 12 and extending from opposite sides thereof overlying the outwardly flared portion 60 are abutment portions 64 and 66, see Figure 4. Extending about the inner periphery of the bore portion, at the portion thereof which flares outwardly is an annular groove 68 receiving therein a circular resilient split-ring 70, see Figure 3, which is engageable in a circumferential groove 72 extending about an intermediate portion of the brush shaft 56 when the diametrical slot 58 thereof is engaged on the tongue 54 on the terminal end portion of the drive shaft.

The brush assembly 14 incorporates on its shaft 56 a suitable circumposed and secured brush portion 74, the terminal end of the brush shaft 56 being substantially pointed at 76 for a purpose to subsequently be described in detail.

The cover 16 includes an arcuate housing portion 78 substantially overlying the brush portion 74 and terminating at one end in an apertured angular end portion 80 removably receiving the terminal end portions 76 of the brush shaft therethrough. Extending longitudinally from the housing portion 78 is an elongated support portion 82 comprising an integral strip element terminating in a laterally extending C-shaped resilient portion 84, see Figure 4, deformable to be removably receiving in the annular recess 62 about the inner periphery of the outwardly flared portion 60.

Although the exemplary embodiment discloses brush 74 for the purpose of brushing between one's teeth, it is intended that the brush 74 may also encompass a brush of the character suitable for massaging one's gums, for example, being of a soft resilient material, rubber or the like.

Thus from the foregoing description it is readily apparent that the power driven toothbrush may be readily dismantled for the purposes of cleaning the same. The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the appended claims.

What is claimed as new is as follows:

1. A power toothbrush including a hollow handle con-

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taining therein controlled motor means, said handle including a longitudinal bore portion opening into one end thereof, a brush including an elongated shaft extending longitudinally of said bore portion in operative engagement with the motor means, said bore portion flaring outwardly into the one end of the handle, an annular groove extending intermediately about the inner periphery of the outwardly flared portion, and a cover for the brush including an elongated arcuate housing for overlying the brush and an integral longitudinally extending strip element overlying a portion of the brush shaft, said housing portion including an angularly directed transversely apertured end portion removably receiving the terminal end of the brush shaft therein, the strip portion of said cover terminating in a laterally extending C-shaped resilient end portion, said C-shaped resilient end portion being removably received in the inner peripheral groove about the outwardly flaring portion of the longitudinal bore of the handle in circumposed relationship about an intermediate portion of the brush shaft.

2. For use on a power toothbrush including a hollow handle containing controlled motor means therein, said handle including a longitudinal bore portion opening into one end thereof and terminating in an outwardly

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flared portion in said one end, said outwardly flared portion including an annular groove about an intermediate inner peripheral portion, an elongated brush shaft extending longitudinally of said bore portion in operative engagement with the motor means in said handle; a cover including an elongated arcuate housing and an integral longitudinally extending strip element, said housing including an angularly directed transversely apertured end portion for removably receiving the terminal end of the brush shaft therein, the strip portion of said cover terminating in a laterally extending C-shaped resilient end portion for removably receipt in the inner peripheral groove of the outwardly flaring portion of the longitudinal bore of the handle in circumposed relationship about an intermediate portion of the brush shaft.

#### References Cited in the file of this patent

##### UNITED STATES PATENTS

1,555,522	Shapiro	Sept. 29, 1925
2,275,247	Cavanagh	Mar. 3, 1942
2,310,626	Gold	Feb. 9, 1943
2,314,117	Beckner	Mar. 16, 1943
2,618,797	Grover	Nov. 25, 1952
2,662,239	Grover	Dec. 15, 1953