

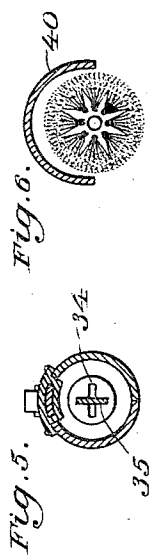
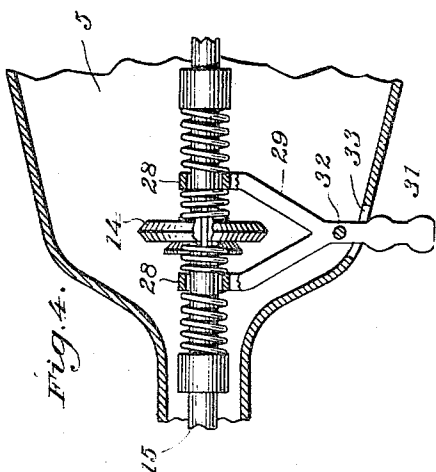
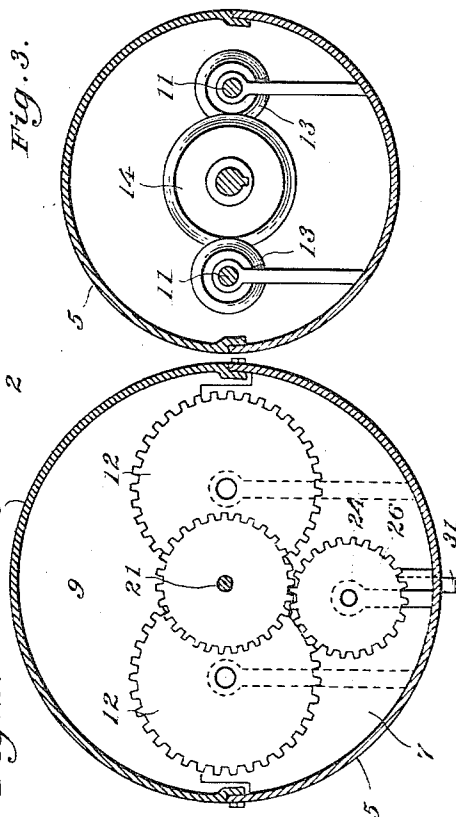
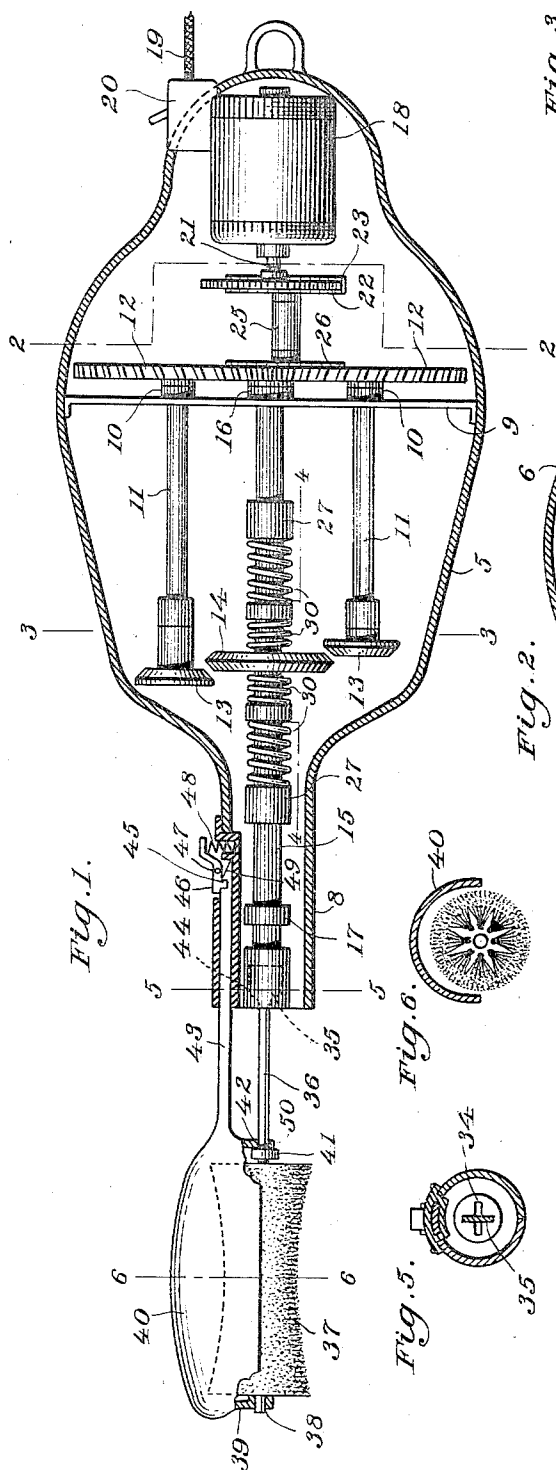
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W. E. SCOTT

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ROTARY TOOTH BRUSH

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Wade E. Scott:
INVENTOR
BY Victor J. Evans & Co.
ATTORNEYS

UNITED STATES PATENT OFFICE

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ROTARY TOOTH BRUSH

Wade E. Scott, Millen, Ga.

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2 Claims. (Cl. 74-202)

My invention relates to tooth brushes and more particularly to rotary tooth brushes.

One of the principal objects of my invention is to provide a rotary tooth brush equipped with novel means, under the control of a user, for reversing the direction of rotation of the tooth brush so that the upper and lower teeth may be brushed from the gums towards the biting ends of the teeth.

Another object of my invention is to provide a device of the above described character so constructed and arranged that replaceable brush elements may be readily attached thereto.

A further object of my invention is to provide a device of the above described character which is simple in construction, efficient in use and economical in manufacture.

Other objects and advantages will be apparent from the following description, appended claims and annexed drawing.

Referring to the drawing wherein like reference characters designate like parts throughout the several views:

Figure 1 is a top plan view of my invention, partly in section and with the cover section removed to disclose the operating mechanism.

Figures 2, 3, 4, 5 and 6 are sectional views taken on the lines 2-2, 3-3, 4-4, 5-5 and 6-6 of Figure 1 respectively.

In practicing my invention I provide a housing 5 constituting a handle equipped with a cover section 6 and a body section 7. The handle is of a substantially cylindrical configuration in cross section to lend to ready grasping within the hand of a user and also fashioned with an outwardly extending shank or sleeve section 8 as clearly illustrated in Figure 1. Transversely mounted within the body section 7 is a partition 9 equipped with a pair of spaced bearings 10 in which is journaled a pair of longitudinally extending driven shafts 11 having fixed on ends of gears 12 in mesh with each other whereby the shafts are rotated in opposite direction upon driving of one of the gears as hereinafter set forth.

The opposite ends of the shafts 11 are equipped with friction disks 13 for selective engagement with a main friction disk 14 slidably mounted on a brush shaft 15 and rotatable therewith. The inner end of the brush shaft 15 is journaled in a bearing 16 carried by the partition 9 and the outer end of said shaft is journaled in a bearing 17 within the shank section 8. Mounted in the rear end of the housing is an electric motor 18 operated by a suitable source of electrical energy connected thereto by means of an electric cable

19 controlled by a switch 20. The motor 18 is provided with a drive shaft 21 having fixed there-to a gear 22 meshing with a gear 23 fixed to one end of a shaft 24 journaled in a bearing 25 secured to the bottom wall of the housing.

The opposite end of the shaft 24 has fixed there-to a gear 26 meshing with one of the gears 12 whereby the shafts 11 are rotated in opposite directions. Secured to the shaft 15 on each side of the disk 14 is a sleeve 27 and interposed between the sleeves 27 and the disk 14 are arms 28 of a yoke 29. The arms are provided with apertures through which the shaft 15 passes and rotates relative thereto and said arms embrace the disk 14. Mounted about the shaft 15 between the sleeves 27, arms 28 and disk 14 are coil springs 30 which normally maintain the disk 14 spaced between the disk 13 and out of engagement with the latter as clearly illustrated in Figure 1.

The yoke 29 is fashioned with an outwardly extending section equipped with a finger piece 31 and said section is pivoted to the housing as at 32 and extends through a slot 33 formed in the bottom wall thereof as illustrated in Figure 4. Obviously, movement of the finger piece 31 in one direction serves to move the disk 14 in engagement with one of the disks 13 through the medium of one of the springs interposed between the disk 14 and one of the arms 28. Movement of the finger piece in an opposite direction serves to effect engagement of the disk 14 with the other disk 13 thereby imparting clockwise and counter-clockwise rotation to the shaft 15 respectively. The outer end of the shaft 15 is fashioned with a pair of inwardly extending right angularly disposed elongated slots 34 and detachably positioned in one of said slots is a similar shaped end 35 of a tooth brush element shaft 36.

The outer end of the shaft 36 has fixed there-to a tooth brush 37 fashioned with a concave peripheral face. The outer end of the shaft 36 adjacent the tooth brush 37 is journaled in a bearing 38 fashioned on a depending flexible section 39 of a guard 40 overlying and embracing a portion of the brush whereby to protect the cheeks of a user from the action of the brush when in use.

The shaft 36 is provided with a collar 41 adjacent the inner end of the brush for engagement with a depending section 42 of the guard whereby to maintain the brush spaced between the sections 39 and 42. The guard 40 is fashioned with a rearwardly extending arm 43, the rear section of which extends within a bore 44 formed in the housing. The rear end of the arm 43 is fashion-

labeled with a transversely extending slot receiving therein a latch element 45 formed on the lower face of a spring pressed pivoted lever 46 operating within the slot formed in the wall of the housing. The lever 46 is pivoted to the housing as at 47 and one end is engaged by a spring 48 located within the slot in the housing and normally maintain the lever 46 in latched engagement with the arm 43 as clearly illustrated in Figure 1. The rear end of the arm 43 is fashioned with an inclined section 49 to facilitate insertion of the arm within the bore 44 for locking engagement with the lever 46.

When it is desired to replace the tooth brush with another, the lever 46 is operated to compress the spring 48 and thereby permit removal of the arm 43 together with the shaft 36 from engagement with the shaft 15. When the arm 43 and shaft 36 are thus disengaged, the shaft 36 may be moved downwardly relative to the section 42 through a slot 50 formed in the end thereof due to the flexibility of the section 39. When the shaft 36 is thus moved downwardly, the outer end of the same may be readily withdrawn from the bearing 38 and another tooth brush inserted.

From the foregoing it will be apparent that I have provided a simple and efficient rotary tooth brush and that the direction of rotation of the brush is selectively controlled through the medium of the yoke 29 actuating the disk 14.

What I claim is:

1. In a device of the character described, a housing, a pair of parallel drive shafts mounted within said housing and equipped with drive disks, a driven shaft rotatably mounted in said housing between said drive shafts and in paral-

lelism therewith, a drive disk slidably keyed to said driven shaft and operable for selective engagement with said drive disks, a gear fixed on each of said drive shafts and meshing with each other for rotating said drive shafts in opposite directions, sleeves fixed on said driven shaft and on each side of said driven disk, springs sleeved on said driven shaft between said sleeves and said driven disk and normally maintaining said driven disk spaced from said drive disks, and a yoke pivoted to said housing and having arms embracing said driven disk and engaging said springs, said yoke operable for effecting selective engagement of said driven disk with said drive disks through the medium of said springs.

2. In a device of the character described, a housing, a pair of parallel drive shafts mounted within said housing and equipped with drive disks, a driven shaft rotatably mounted in said housing between said drive shafts and in parallelism therewith, a drive disk slidably keyed to said driven shaft and operable for selective engagement with said drive disks, a gear fixed on each of said drive shafts and meshing with each other for rotating said drive shafts in opposite directions, power means connected to one of said gears, sleeves fixed on said driven shaft and on each side of said driven disk, springs sleeved on said driven shaft between said sleeves and said driven disk and normally maintaining said driven disk spaced from said drive disks, and a yoke pivoted to said housing and having arms embracing said driven disk and engaging said springs, said yoke operable for effecting selective engagement of said driven disk with said drive disks through the medium of said springs.

WADE E. SCOTT.