

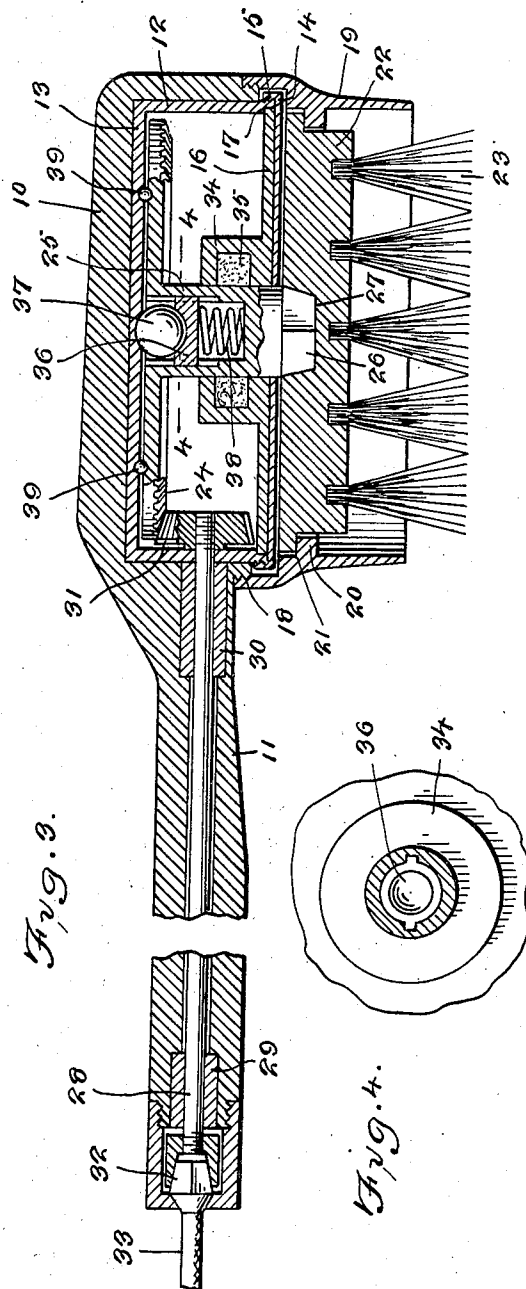
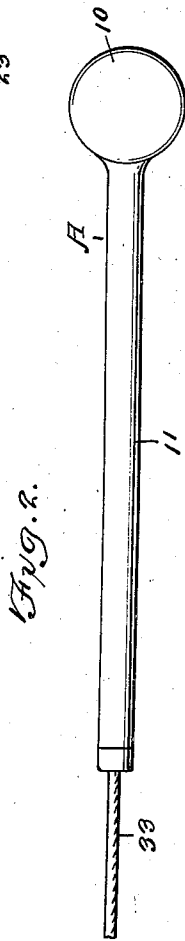
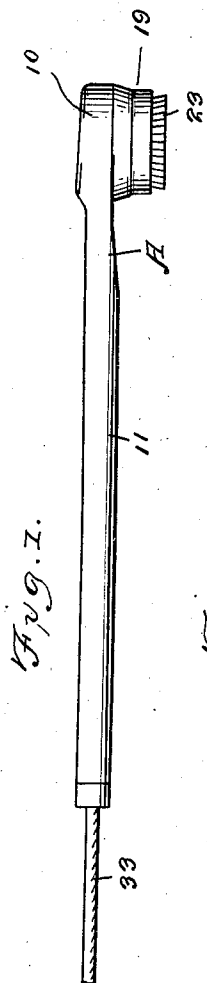
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2,186,520

TOOTH BRUSH

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TOOTH BRUSH

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1 Claim. (Cl. 15—28)

This invention relates to a tooth brush and more especially to a rotary tooth brush.

The primary object of the invention is the provision of a brush of this character, wherein the brush proper is coupled with a driver or gear operated from a power shaft so that rotary motion will be imparted to the brush when in use for the cleaning of the teeth, the brush being readily separable and is coupled with a driver in a novel manner.

Another object of the invention is the provision of a brush of this character, wherein the tufted bristles of the brush are shielded so that only the bristles can have contact with the teeth in the use of said brush when cleaning the same and in this way avoiding injury to such user.

A further object of the invention is the provision of a brush of this character, wherein the parts thereof are novel, both in the structural make-up and in the assembly of the same, and such brush can be readily and conveniently handled by hand and will be power driven.

A further object of the invention is the provision of a brush of this character, which is simple in its construction, thoroughly reliable and efficient in operation, readily and easily handled, being compact and possessed of but few parts yet strong, durable, and inexpensive to manufacture.

With these and other objects in view, the invention consists in the features of construction, combination and arrangement of parts as will be hereinafter more fully described, illustrated in the accompanying drawing, which discloses the preferred embodiment of the invention and pointed out in the claim hereunto appended.

In the accompanying drawing:

Figure 1 is a side elevation of a brush constructed in accordance with the invention.

Figure 2 is a plan view thereof.

Figure 3 is an enlarged fragmentary vertical longitudinal sectional view through the brush.

Figure 4 is a detail sectional view taken on the line 4—4 of Figure 3.

Similar reference characters indicate corresponding parts throughout the several views in the drawing.

Referring to the drawing in detail, A designates generally a brush in its entirety constructed in accordance with the invention and comprises a head 10 from which extends a handle 11, the head being preferably circular in contour and has provided therein a recess 12 opening through

one side of the same while within this recess is fitted a gear housing 13 having a removable cover 14 at the open side of the recess in the head 10, being threaded at 15 to said housing so that the cover can be readily removed when the occasion requires. At the side with which the cover plate 14 is fitted is arranged a disk-like cheek piece 16 counterseated at 17 in the side wall of the housing 12 and being inwardly next to the cover 14.

Externally threaded with the head 10 as at 18 on the side of said head to which the recess 12 opens is a collar-like shield 19 having an internal shoulder 20 against which works an annular flange 21 on a bristle stock 22 being of disk form and having tufted therein bristles 23 effecting a brush. These bristles 23 protrude through the collar-like shield 19, which concentrically aprons the group of tufted bristles 23 carried by said stock 22 so that contact of the stock with the teeth or the skin within the mouth or gums of a user of the brush will be avoided while the bristles 23 will act upon the teeth for the cleaning thereof. This stock 22 is rotatably held separably fitted with the head 10 as will be apparent from Figure 3 of the drawing. The shoulder 20, which is annular, affords a track for the flange 21 of the stock 22, being movable upon this shoulder.

Confined within the housing 13 is a driving gear 24 having a central hollow axle stud 25 formed externally with a flat faced clutching terminal or tip 26 which is removably seated in a correspondingly shaped socket 27 formed centrally in the stock 22 so that when the gear 24 is rotated such motion will be imparted to the said stock.

Passed through the handle 11 is a driven shaft 28 having fitting with bearings 29 and 30, respectively, mounted within said handle and this shaft at its inner end, which projects into the housing 13, has detachably fitted therewith a pinion 31 meshing with the gear 24. The handle 11 at its outer end accommodates a coupling connection 32 between the shaft 28 and a flexible driving shaft 33, being operated from any suitable power unit source, preferably an electric motor.

Built on the cheek piece 16 concentrically about the stud axle 25 is an oiling gland 34 having a lubricant chamber 35 for lubrication of the stud axle 25 in the working of the gear 24.

Slidably keyed within the hollow stud axle 25 is a follower 36 having between it and the wall adjacent thereto of the housing 13 a bearing ball

37 while this follower 36 is acted upon by a coiled expansion spring 38 fitted within the hollow stud axle and this bearing ball 37 constantly urges the gear 24 in meshing engagement with the pinion 31 while also located between the said gear 24 and the wall of the housing 13 next thereto are antifriction bearings 39, being conventionally arranged for minimizing friction in the rotation of the gear 24.

10 When the gear 24 is rotated, being driven by the shaft 28 which receives its power from the shaft 33, will cause the rotation of the bristle stock 22 and under rotation thereof the bristles 23 can play upon the teeth of a user of the brush 15 for cleaning purposes, the stock 22 being shielded from contact with the teeth, the gums and the skin of a user by the shield 19, as before stated.

On removal of the shield 19 from engagement with the head 10, the stock 22 can be uncoupled from the stud axle 25 and by the removal of the cover 14 from the housing 13 access may be had to the interior of said housing for the removal of the gears 24 and 31 from within the same should the occasion require.

25 By the coupling 32 the shaft 28 can be sep-

arated from the shaft 33, the said shaft 28 being confined within the handle 11.

What is claimed is:

A brush of the kind described comprising a head having a recess opening through one side thereof, a gear housing fitting said recess and accessible through the open side of the same, a removable cover plate for said housing, a collar-like shield detachably joined with the head at the open side of the recess therein and having an annular internal shoulder, a circular bristle stock next to the removable cover and peripherally engaged with the said shoulder for rotatable trackage thereon, bristles carried by said stock and extending through and beyond the collar-like shield, a driving gear rotatably fitting within the housing and having a central stud axle separably coupled in the bristle stock and extending through the removable cover, a driven pinion within the housing and meshing with said gear, and means within the stud axle and active upon the housing to maintain tensioned meshing engagement between the gear and said pinion.

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