May 27, 1941. V. J. RESH 2,243,774

DISPENSING DEVICE

Filed Dec. 22, 1939

Fig. 1.

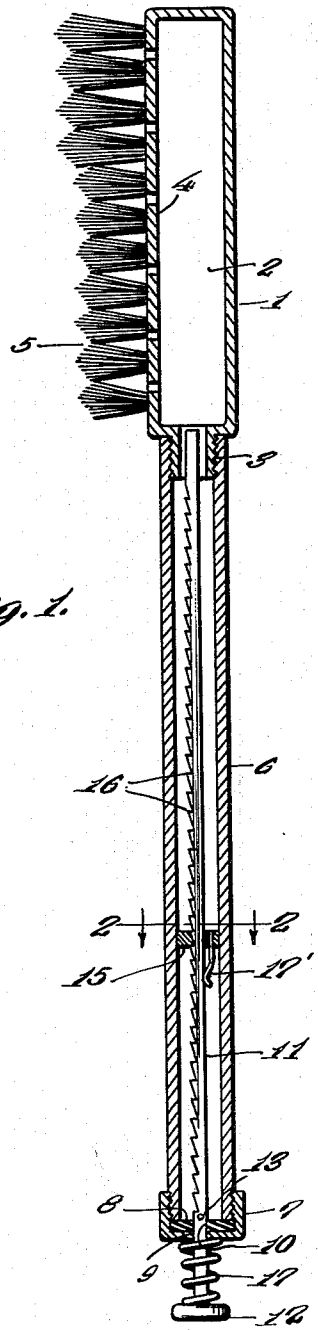


Fig. 2.

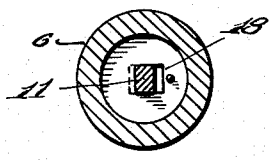


Fig. 3.

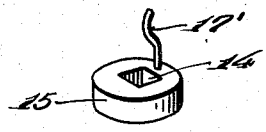
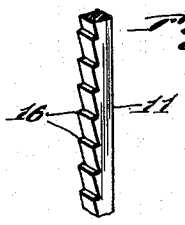


Fig. 4.



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DISPENSING DEVICE

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Application December 22, 1939, Serial No. 310,646

2 Claims. (Cl. 221—78)

My invention relates to improvements in toothbrushes of the so-called fountain type and the principal object in view is to provide an inexpensive, efficient brush of this character adapted for easy and quick operation to supply to the bristles a measured amount of dentifrice at will.

To the accomplishment of the above, and subordinate objects presently appearing, a preferred embodiment of my invention is illustrated in the accompanying drawing, set forth in detail in the succeeding description, and defined in the claims appended hereto.

In said drawing:

Figure 1 is a view in longitudinal section of a preferred embodiment of my invention.

Figure 2 is a view in transverse section taken on the line 2—2 of Figure 1 looking in the direction indicated by the arrows, and drawn to an enlarged scale.

Figure 3 is a view in perspective of the piston, and

Figure 4 is a fragmentary view in perspective of the feed rod.

Referring to the drawing by numerals, in the preferred embodiment thereof, the toothbrush of my invention comprises an elongated rectangular head 1 of hollow construction forming a distributing chamber 2 for dentifrice of the paste type and provided at one end thereof with an externally threaded nipple 3. The head 1 has a perforated front face 4 to which the usual tufts of bristles 5 are secured in any suitable manner.

An elongated tubular handle 6 is provided for said head 1 and which is detachably secured at one end to said head by threading onto said nipple 3, said handle forming a storage container for the dentifrice. The outer end of said handle 6 has threaded thereon a closure cap 7 with a resilient gasket 8 interposed between the same and said end. The cap 7 and gasket 8 are apertured centrally as at 9 and 10, respectively.

Means are provided for ejecting measured quantities of the dentifrice from the handle 6 as follows.

An ejector or feed rod 11 is slidably mounted in the cap 7 and gasket 8 for endwise reciprocation in the handle 6 inwardly and outwardly of the same and axially thereof, said rod being of the requisite length to extend from the nipple 3, through said handle 6, and out of said cap for a short distance. A thumb button 12 is suitably secured to the outer end of the feed rod 11. A stop pin 13 extended through the feed rod 11 for engagement with the gasket 8 limits outward movement of said rod. A coil spring 17 surrounding said rod 11 between the button 12 and the cap 7 urges said rod into its outward limit of movement. The feed rod 11 is preferably square transversely and extends with a sliding fit through a square aperture 14 in a disk piston 15 of rubber, or other flexible material, slidably fitting in the handle 6. One side of the feed rod 11 is formed with ratchet teeth 16 arranged so that under outward movement of said rod the teeth will slide through the aperture 14 in the piston 15 without moving the same, whereas, under inward movement of said rod, said teeth will pick up the piston and force the same inwardly of the handle toward the head 2. A leaf spring 17' suitably anchored at one end in the piston 15 with a free end thereof bearing against a smooth side of said rod 11 provides for flexing the piston into snug engagement with the teeth 16 of said rod. As will be understood, under this condition the resilient character of the piston 15 provides for the teeth 16 wiping idly past the same under outward movement of the feed rod 11. In this connection, the aperture 14 in piston 15 is slightly enlarged in the proper direction, as indicated at 18, to provide a clearance between the same and said rod 11 facilitating flexing of the piston 14 under outward movement of the teeth 16 with the rod 11.

Referring now to the use and operation of the invention, the handle 6 is filled with dentifrice with the piston 14 shoved to the outer end of said handle 6 and then attached to the nipple 13. The feed rod 11 is manipulated inwardly in opposition to the spring 17 to feed the dentifrice from the handle 6 into the distributing chamber 2, the inward limit of movement being established by the spring 17 as will be clear. Under each stroke of said rod 11, the piston 14 is picked up, in the manner already described, by the rod 11, and moved in correspondence therewith to feed, or eject, an amount of dentifrice from the handle 6 measured, as will be clear, by the degree of inward movement of said rod. Upon release of the feed rod 11, the spring 17 will react to turn the rod to its outward limit of movement, the teeth 16 idling in the manner already described, past the piston 14 and thus leaving the same in the position in which it was formerly moved. As will be clear, under repeated inward movement of the feed rod 11, the same operations will occur and the same amount of dentifrice fed from the handle 6 at each repeat operation. The dentifrice in the head 1 is, as

will be manifest, forced out of the same through the front plate 4 into the bristles 5 if the head is packed full. On the other hand, if the head is not packed full, a requisite amount of the contents thereof may be applied to the bristles 5 by wetting the latter and shaking the brush in the proper direction.

The foregoing will, it is believed, suffice to impart a clear understanding of my invention without further explanation.

Manifestly the invention, as described, is susceptible of modification without departing from the inventive concept and right is herein reserved to such modifications as fall within the scope of the subjoined claims.

What I claim is:

1. Pressure feeding means for use in a fountain toothbrush having a hollow handle, said means comprising a disk type piston of flexible material adapted to fit frictionally in said handle for sliding movement therein and having a central bore, and a piston rod adapted to be reciprocated in said handle and extending through said bore, said rod having ratchet teeth on one side thereof, and said teeth being constructed and arranged to pick up the marginal edge of said bore under movement of the rod in one direction and to wipe over said marginal edge under movement of the rod in the opposite direction, whereby a one way step-by-step movement is imparted to said piston under reciprocation of said rod.

2. Pressure feeding means for use in a fountain toothbrush having a hollow handle, said means comprising a disk type piston of flexible material adapted to fit frictionally in said handle for sliding movement therein and having a central bore, and a piston rod adapted to be reciprocated in said handle and extending through said bore, said rod having ratchet teeth on one side thereof, and said teeth being constructed and arranged to pick up the marginal edge of said bore under movement of the rod in one direction and to wipe over said marginal edge under movement of the rod in the opposite direction, whereby a one-way step-by-step movement is imparted to said piston under reciprocation of said rod, and a leaf spring fixed to said piston and bearing against said rod to yieldingly urge said piston into engagement with the toothed side of the rod to take up wear on said marginal edge.

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