

Dec. 9, 1924.

1,518,341

A. MENDOZA

FOUNTAIN TOOTHBRUSH

Filed July 14, 1921

2 Sheets-Sheet 1

Fig. 1.

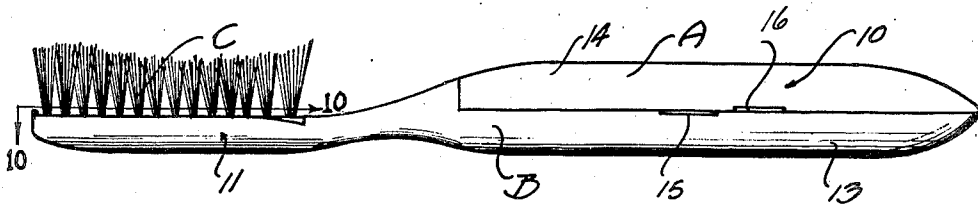


Fig. 2.

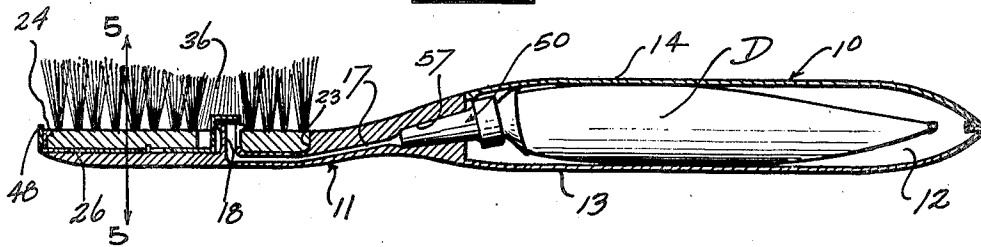


Fig. 3.

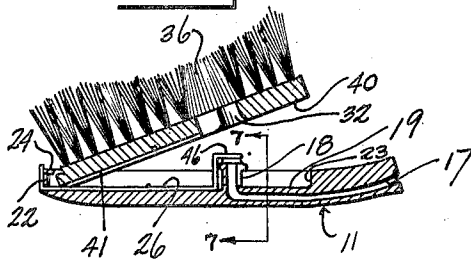


Fig. 4.

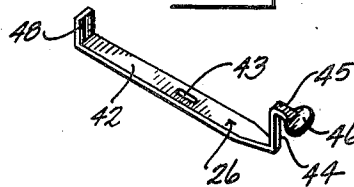
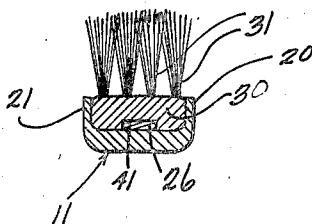


Fig. 5.



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Fig. 6.

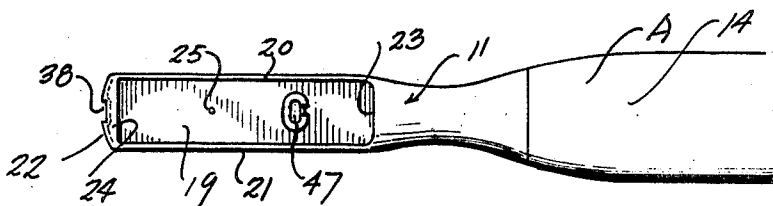


Fig. 8.

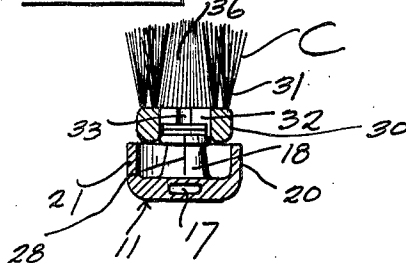


Fig. 7.

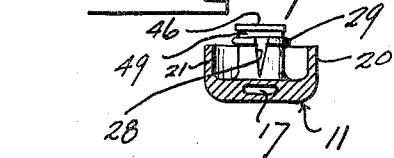


Fig. 9.

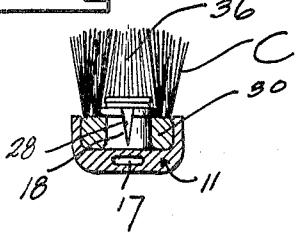


Fig. 10.

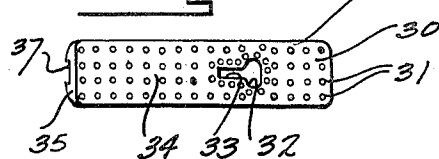
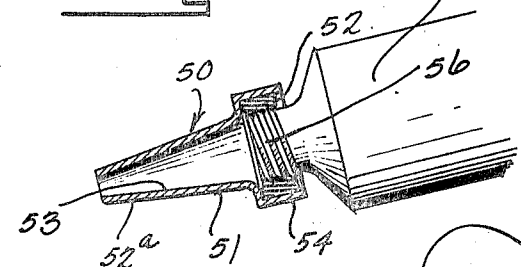


Fig. 11.



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UNITED STATES PATENT OFFICE.

ARNULFO MENDOZA, OF NEW YORK, N. Y., ASSIGNOR TO F. R. A. G. CORPORATION,
OF NEWARK, NEW JERSEY, A CORPORATION OF DELAWARE.

FOUNTAIN TOOTHBRUSH.

Application filed July 14, 1921. Serial No. 484,749.

To all whom it may concern:

Be it known that I, ARNULFO MENDOZA, a citizen of Mexico, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Fountain Toothbrushes, of which the following is a specification.

My present invention relates to improvements in fountain tooth brushes, such as set forth in my co-pending applications, Serial No. 426,540, filed Nov. 26, 1920; and Serial No. 460,926, filed April 13, 1921.

The primary object of this invention, is to provide a tooth brush including a supporting handle, a brush head, and convenient means, of a novel nature, for detachably maintaining the brush head in detachable association with the supporting handle.

A further object of the improved fountain tooth brush, is the provision of means for feeding a dentifrice on to the bristles of a brush head in a simple but accurate manner; and differentiating in this particular from difficulty heretofore experienced with fountain tooth brushes.

A further object of the invention is the provision of a fountain brush of the above described character, which includes a novel regulating valve means.

A further object of the invention is the provision of a nozzle connection, for use with the improved tooth brush, and for receiving dentifrice containers of various sizes.

Other objects and advantages will be apparent during the course of the following detailed description.

In the accompanying drawings, forming a part of this specification, and in which similar reference characters designate corresponding parts throughout the several views,

Figure 1 is a side elevation of the improved tooth brush.

Figure 2 is a longitudinal cross sectional view through the improved fountain tooth brush, showing the details of construction.

Figure 3 is a fragmentary view of a portion of the tooth brush, showing the manner in which the brush head is assembled thereto.

Figure 4 is a perspective view of a regulating valve.

Figure 5 is a cross sectional view taken on the line 5—5 of Figure 2.

Figure 6 is a fragmentary plan view of the fountain tooth brush, showing the brush head removed.

Figure 7 is a transverse cross section through a portion of the improved tooth brush, showing details of construction.

Figure 8 is a transverse cross section of the improved tooth brush, showing the manner in which the brush head is assembled thereto.

Figure 9 is a section similar to that of Figure 8, showing a brush head in assembled relation upon its seat.

Figure 10 is a cross sectional view through the brush head taken on the line 10—10 of Figure 1.

Figure 11 is a cross sectional view through a nozzle connection, showing a container attached thereto.

In the drawings, wherein for the purpose of illustration is shown the preferred embodiment of my invention, the letter A designates the improved tooth brush, which includes the supporting casing B, and brush head C. A dentifrice container D is provided for use with the improved tooth brush, and in a manner to be subsequently set forth.

The casing B is of that type, specifically set forth in my application Serial No. 460,926, filed April 13, 1921, simulating somewhat the ordinary tooth brush and including the hollow handle structure 10, and the brush head receiving shank 11. A space 12 is provided in the handle 10 for receiving the dentifrice container D. The lower section 13 of the handle structure 10, is preferably rigid with the shank 11 and the upper section 14 being hingedly connected to the rigid section 13. A pair of projecting lugs 15 and 16, are provided on the lower and upper sections of the hollow handle structure 10, to facilitate the opening of the upper section 14, the same in reality being the cover of the hollow handle structure.

The brush head shank 11 is preferably rigid with the section 13, extending forwardly from the same, and provided with a channel 17, leading from the inside 12 of the casing 10, to communicate upwardly through a discharge port projection 18.

The shank 11 is provided with a seating surface 19, for receiving the brush head C, the same having side walls 20 and 21, a forward end wall 22, and a rear wall 23, surrounding the same to provide a pocket for reception of the body portion of the brush head C. The side walls 20 and 21 are straight, the same being arranged preferably at right angles to the flat seating surface 19. An overhanging lip 24 is provided on the forward wall 22, and extending over a short portion of the seating surface 19, for a purpose to be subsequently set forth. A pin 25 projects upwardly from the plane of the seating surface 19, to serve as a guide for a valve structure 26 used for cooperation with the discharge port 18.

The discharge port projection 18 is of novel formation, the same extending upwardly from the flat seating surface 19, preferably adjacent the vertical rear wall 23, of the pocket which receives the brush head C. The projection 18, is preferably elliptical in cross section, and may be provided with a V-shaped slot 28, extending vertically through a side thereof, the apex of the slot 28 terminating just above the seating surface 19. A bead 29 is formed about the upper marginal edge of the projection 18, extending outwardly from the side defining the projection.

The brush head C is formed principally of the supporting body portion 30 and the bristles thereupon, arranged in tufts 31. The body portion 30 may be formed of bone, celluloid, hard rubber or any approved material, and is provided with an elliptical shaped aperture 32 therethrough, having a slot 33 likewise extending therethrough and opening into the aperture 32. By this arrangement, an opening is provided through the tuft support 30 resembling a key hole in formation. The aperture 32 and slot 33 are however, positioned within the supporting base 30, to cooperate with the placement of the discharge port 18, as will be more specifically described. The upper surface 34 of the base 30 is provided adjacent its forward end with a recess 35, adapted for placement beneath the overhanging lip 24, when the brush head C is positioned upon the seating surface 19. The tufts 31 which immediately surround the aperture 32 and slot 33 are disposed as close as possible to the margin defining the aperture and slot 32 and 33, and as near to each other as is possible. By this arrangement, the bristles forming the tufts 31 are crowded together in such manner as to provide a passageway 36, for exit of the dentifrice from the discharge port 18, upwardly therethrough and to the top of the bristles in the brush head C. The preferred arrangement of the tufts with the respect to the opening through the base 30 is shown

in Figure 10 of the drawings. As clearly illustrated in this view, the extreme forward end below the recess 35, is sharply recessed as at 37, to compensate for an indentation 38 in the front wall 22 of the shank 11, the indentation 38 being arranged to receive a portion of the valve 26. The bottom surface 40 of the base 30 is provided with a groove 41 extending from the aperture 32 forwardly to the recess 37.

The valve 26, is formed of a strip of approved material, and is adapted to slide upon the surface 19, and in the groove 41 of the brush head C. The portion 42 of the valve 26, which is disposed upon the seating surface 19, is provided centrally and longitudinally with a slot 43, adapted for receiving the projecting pin 25, to define the closed and open positions of the valve 26. A portion 44 extends upwardly at right angles to the guiding portion 42, and is provided with a right angled stem 45, arranged parallel to the portion 42, and provided upon the extreme end thereof with a head 46, adapted for overlying the exit opening 47, from the discharge port 18. A piece of cork 49 or other sealing material, is disposed upon the bottom of the head 46, for closure of the exit opening 47. A finger nail engaging stem 48 is provided upon the body portion 42 of the valve 26, and opposite that portion from which the head portion 46 is arranged, the same extending upwardly from the same side of the portion 42 as the stem 44. An aperture is provided in the rear wall 22 of the stem 11 to receive the portion 42 of valve 26; the nail engaging stem 48 thus being disposed exteriorly of the shank 11, and arranged to seat within the depression or indentation 38, when the valve 26 is closed on the exit opening of the discharge port 18.

The nozzle connection 50, is provided for that purpose set forth in my improved fountain tooth brush, Serial No. 460,926, filed April 13, 1921. The same includes a metal casing 51, and a resilient retaining ring 52. The casing 51, is provided with a tapering snout 52^a, having an aperture or tapered opening 53 therethrough, and opening out into the enlarged circular portion 54 of the casing 51; in which is disposed the resilient ring 52, in any preferred manner, such as by gluing, friction, or the like. This type of connection 50 has been provided to accommodate various sized dentifrice containers D.

In operation, the nozzle 56 of the dentifrice container or collapsible tube D is pushed or screwed into the material of the resilient band 52, and due to the resiliency of this material, the nozzle 56 does not necessarily have to be of a standard size and can vary considerable in dimension. The tapered snout 52 of the connection 50 is next

inserted into the tapered opening 57, forming the entrance to the paste channel 17, opening from the pocket 12 into the brush head passageway 36. The tapered entrance 57 is preferably inclined at an acute angle to the longitudinal pocket 12, and as clearly described in my copending application, Serial No. 460,926. This arrangement has been provided to facilitate disposition of the tube D in the hollow casing 10, although the entrance 57 may be axially disposed in alignment with handle 10.

The brush head C is detachable in the shank 11, the same being tipped into place over the plane seat 19, until that portion of the brush head base 30, immediately below the recess 35 is placed beneath the overhanging lip 24. The brush head C is then pushed downwardly over the bead 29 of the discharge port projection 18. The valve 26 of course will have to be closed before the brush head C can assume its proper position in the shank 11. The exterior dimension or circumference of the head 29 is greater than the dimension of the aperture 32 or slot 33. However, due to the V-shaped slot 28, the extension or projection 18 is resilient to the extent that the sides of the extension 18 can be pressed in to close the slot 28, as is clearly shown in Figure 8. The brush head C can be pushed down over the bead portion 29 of the supporting section 18. When the bottom surface 40 of the base 30 abuts the plane of the seating surface 19, the resiliency of the projection 18 will exert itself, and the bead 29 will snap into position to overlie the upper surface 34 of the base 30, to maintain the rear end of the brush head C in position on the shank 11, and preventing the forward end from riding upwardly past the overhanging lip 24.

The valve 26 as before explained, is reciprocable in the brush head C and shank 11; the upwardly extending head 44 of the valve 26 riding back and forth in the slot 33, to permit the head 46 to open and close the exit opening 47 of the port extension 18. The V-shaped slot 48 is closed, as an exit of dentifrice, due to the fact that the same closely abuts an inside wall of the aperture 32.

A user, desiring to cleanse teeth engages the external stem 48 with a fingernail or a finger, and pulls the same outwardly from the indentation 38, thus removing the head 46 to open the exit 47 of the discharge port 18. By depressing the collapsible tube D, the dentifrice therein is fed to the paste channel 17, and upwardly through the port opening in the extension 18; through the passageway 36 defined by the closely positioned bristles in the brush head C, and upwardly upon the top of the tooth brush bristles. The brush head C may be easily removed, as by merely grasping a few tufts of the bristles, adjacent the rear end of the

brush head C, and exerting an upward pull, to dislodge the bead 29 from engagement over the upper surface of the base 30.

Various changes in the shape, size and arrangement of parts, may be made to the form of the invention herein shown and described, without departing from the spirit of the invention or the scope of the claims.

I claim:

1. A fountain tooth brush, comprising in combination a supporting casing having a seat thereon, a brush head for said seat, a resilient member providing a discharge port projecting from said seat including a bead for engagement with said brush head to detachably maintain the same on said supporting casing, and means in said supporting casing in communication with said discharge port for containing dentifrice to be fed through said discharge port.

2. A fountain tooth brush, comprising in combination a supporting casing having a pocket therein, an overhanging lip provided above a portion of said pocket, and a resilient discharge port member projecting upwardly from the pocket in said supporting casing and having a substantially V-shaped slot therein, said discharge port member having a bead thereon for engaging over a brush head to maintain the same in releasable position.

3. A fountain tooth brush comprising in combination a supporting casing having a pocket portion thereon, an overhanging lip on said casing projecting over a portion of said pocket, a discharge port member projecting upwardly through said pocket remote from said overhanging lip provided with a V-shaped slot therein and having a bead upwardly of the marginal edge thereof, a brush head having an aperture therethrough adapted for disposition in the pocket of said supporting casing to dispose a portion beneath said overhanging lip, the aperture thereof being adapted to receive the projecting discharge port member, whereby the bead of the latter engages the upper surface of said brush head to releasably maintain the brush head on said supporting casing, and dentifrice containing means in communication with said discharge port.

4. A fountain tooth brush comprising a supporting casing having a seat thereon, and being provided with a laterally expandible tubular projection extending upwardly from said seat and providing a discharge port, a brush head having a transverse opening therethrough adapted to receive the laterally expandible projection whereby the brush head is held upon said seat, and dentifrice containing means in said supporting casing in communication with said discharge port.

5. A fountain tooth brush comprising in

combination a supporting casing having a pocket thereon, a brush head disposed within said pocket, said brush head being provided with a perforation, a tubular member providing a discharge port projecting upwardly from said pocket through the perforation in the brush head, said member being split vertically to provide for contraction of the same and provided upon its upper marginal edge with a bead for engagement over the top of said brush head to detachably maintain said brush head in the pocket of said supporting casing, and dentifrice containing means in said supporting casing in communication with said discharge port.

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