Aug. 17, 1926. 1,596,365

A. MENDOZA

FOUNTAIN TOOTHBRUSH

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Fig. 1.

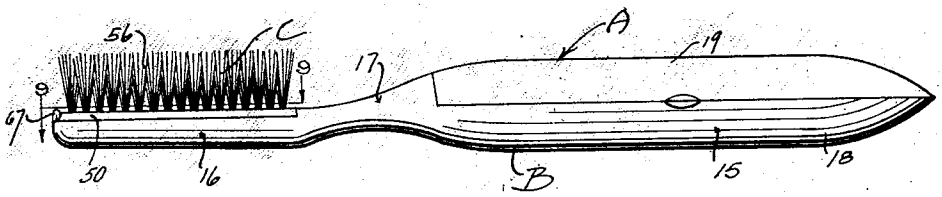


Fig. 2.

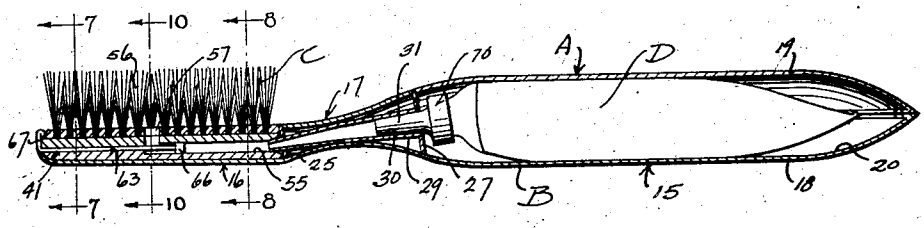


Fig. 3.

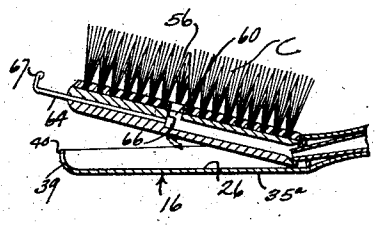
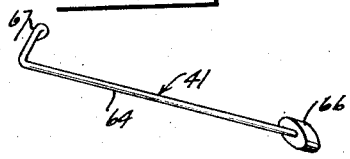


Fig. 4.

Fig. 5.



Inventor

Arnulfo Mendoza

By Lancaster and Allwine

Attorneys

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Fig. 6.

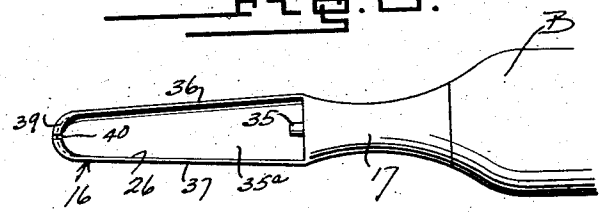


Fig. 7.

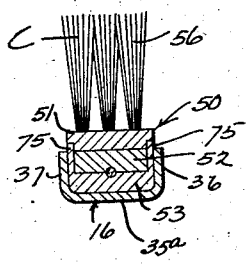


Fig. 8.

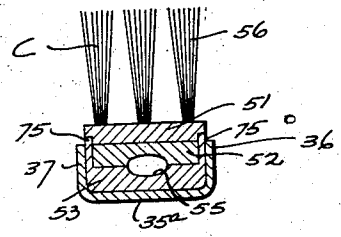


Fig. 9.

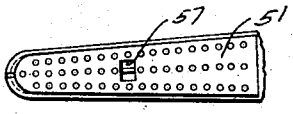


Fig. 10.

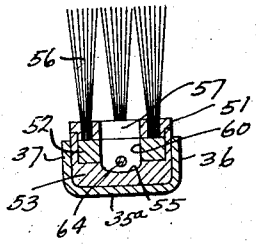
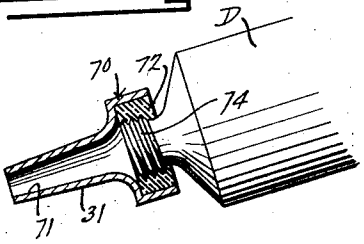


Fig. 11.



Inventor

Arnulfo Mendoza

By Lancaster and Allwine

Attorneys

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UNITED STATES PATENT OFFICE.

ARNULFO MENDOZA, OF BLOOMFIELD, NEW JERSEY.

FOUNTAIN TOOTHBRUSH.

Application filed January 23, 1924. Serial No. 688,018.

This invention relates to improvements in tooth brush constructions.

The primary object of this invention is the provision of a relatively simple type of fountain tooth brush embodying a novel brush head construction and means for controlling the flow of dentifrice thereon.

A further object of this invention is the provision of a fountain tooth brush embodying novel means for detachable connection of a brush head upon its seat.

A further object of this invention is the provision of novel valve control means for fountain tooth brushes.

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

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

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

Fig. 2 is a longitudinal sectional view taken through the improved tooth brush.

Fig. 3 is a cross sectional view taken through the forward end of the tooth brush, showing the manner of assembling the novel brush head in its seat.

Fig. 4 is a fragmentary view, in section, of the enlarged forward end of the brush head and its seat.

Fig. 5 is a perspective view of a novel type of valve member which is preferably used with the fountain tooth brush.

Fig. 6 is a fragmentary plan view of the frame of the tooth brush, showing more particularly the brush head seat thereof.

Figs. 7 and 8 are transverse cross sectional views taken substantially on their respective lines in Figure 2 of the drawings.

Fig. 9 is a bottom view of a section of the brush head, showing certain novel features of construction thereof.

Fig. 10 is a cross sectional view taken substantially on the line 10—10 of Figure 2.

Fig. 11 is a fragmentary view showing a nozzle connection which may be used in connection with the attachment of dentifrice containers in the improved fountain tooth brush.

In the drawings, wherein for the purpose of illustration is shown only the preferred embodiment of this invention, the letter A may generally designate the fountain tooth brush, which may include the supporting frame B, adapted to detachably receive a brush head C; and a dentifrice container D, so that the dentifrice may be fed from the container D onto the bristles of the brush head C.

Referring to the frame B, the same preferably comprises the handle or casing portion 15; brush head seat 16; and the neck 17 which connects the casing or housing 15 with the seat construction 16. The housing 15 preferably is the handle of the tooth brush A, and includes the portion 18 integrally connected with the neck portion 17, and also including a hinged closure 19 which cooperates with the stationary portion 18 to provide a compartment 20 adapted to receive the dentifrice container D in an enclosed relation. The neck portion 17 is preferably hollow, and has a forward wall 25 which faces the pocket 26 of the seat construction 16; and the wall 27 which faces the compartment 20 of the handle-casing 15. A tapered tube 29 is fixedly supported by the walls 25 and 27, and its larger end is supported by the wall 27, providing a tapered opening 30 adapted to receive a tapered nozzle connection spout 31 therein, as will be subsequently mentioned. The smaller or forward part of the tube 29 extends through an opening in the wall 25, and provides a tubular projection 35 which extends into the pocket 26 formed by the frame B. Of course, in lieu of this construction the tapered passageway 30 may be bored through a solid neck of the frame of the tooth brush, but it can readily be understood that by forming the walls 25 and 27 rigid with the frame B, a saving of material is effected, as well as a reduction in weight.

The seating construction 16, as before mentioned, provides the pocket 26, and to this end includes the bottom wall 35ª with upstanding side walls 36 and 37 which taper in converging relation from the rear wall 25 toward the forward end of the frame B, where an arcuate front wall or flange 39 is provided, which is preferably resilient, and at its upper end overhangs slightly into

the pocket 26, so that it will be necessary to flex the same outwardly when placing the tooth brush head C. This wall 39 of the brush head seat construction 16 is preferably provided with a vertical slot 40 therein adapted to receive an end of the brush valve 41, as will be subsequently described.

Referring to the construction of the brush head C; the same preferably includes a base 50 formed of a plurality of sections to compactly and economically locate the valve 41 therein for effective operation. This base construction 50 includes upper, intermediate, and lower sections 51, 52 and 53 respectively. The base 50 of the brush head C may be formed of hard rubber, gutta-percha, or pyroxyline, and the sections 51, 52 and 53 are vulcanized or welded into a non-detachable relation to form the dentifrice duct or conduit 55 in the base 50. The upper section 51 of the base 50 has the tufts of bristles 56 formed therein in any approved manner, and substantially midway of the ends of this section 51 a port 57 is transversely provided through the section 51. The intermediate and lower sections 52 and 53 respectively are provided with grooves extending longitudinally thereof in their facing surfaces, so that when said sections are fused together, these grooves will be in facing relation to provide the port 55 which is substantially oval in cross section, and which extends from the rear end of the base 50 to a point about midway of the ends of said base, where said duct right angles, as at 60, and is adapted for axial alignment with the port 57 when the sections of the base are assembled, and as is illustrated in the drawings. Rearwardly of the duct 55, a reduced passageway 63 is provided, within which the shank 64 of the valve 41 is slidably disposed; said shank 64 preferably extending longitudinally of the brush base 50, and at its rear end providing a valve head 66 which is oval in cross section, and which is slidably disposed in the duct 55 for regulating the exit of dentifrice with respect to the bristles of the brush. This passageway 63 outlets on the forward end of the brush, so that the shank 64 extends outwardly from the forward end of the brush head C, and is provided with a right angled finger engaging extension 67.

Referring to the operation and assemblage of the improved tooth brush, a nozzle connection 70 is provided, which as above mentioned has the tapered spout 31 thereon having the way 71 therethrough. A resilient connecting ring 72 is preferably provided in the nozzle connection 70, which is adapted to receive the screw threaded nozzle 74 of the dentifrice container D; being of such nature that the same may receive nozzles 74 of varying sizes. The dentifrice container D is placed in the compartment 20 of the handle-casing 15, the spout 31 inserted into the bore or passageway 30 of the neck tube 29. The brush head C is assembled in a resilient and detachable relation within its seat pocket 26 first by tipping the same into the seat so that the rear end of the brush head duct 55 receives the projecting portion 35 of the tube 29 therein, substantially as is illustrated in Figure 3 of the drawings. The forward end of the brush head is then snapped down into the pocket 26, and the resilient flange 39 flexes, substantially as is illustrated in dotted and full lines in Figure 4 of the drawings, so that the brush head is held both at its forward and rear ends in the pocket 26, against liability of accidental displacement. The valve shank 64 at its rear end is received in the recess 40 of the seat construction 16, substantially as is illustrated in Figure 2 of the drawings. In this position the head 66 of the valve is disposed in the duct 55, rearwardly of the port 57 which communicates on the bristles 56, so that dentifrice cannot flow through the port 55 onto the bristles. However, when it is desired to use the brush the person with his finger or finger nail may draw the valve 41 forwardly of the brush head, so that the oval shaped head 66 slides in the duct 55 until the same partially passes the duct end 60, so that dentifrice may flow through the duct and through the port 57 when the container D is compressed.

A very novel feature of the construction of the brush head base 50 is the fact that the lower section 53 is provided with upstanding walls 75 at the sides thereof, which receives therebetween the intermediate section 52, and part of the upper section 51, so that the side walls assist in welding or vulcanizing the sections together to provide a rigid base 50 for the bristles 56. These walls 75 assist in the proper positioning of the sections of the base 50, so that there is no liability of lateral displacement during the fusing operation.

From the foregoing description of this invention it is apparent that a fountain tooth brush has been provided which is compact, and which controls the dentifrice in a sanitary manner so that flow onto the bristles is prevented except when desired. The brush head construction is readily assembled upon its seat, and may be readily detached therefrom merely by forwardly withdrawing the valve stem 64, and lifting upwardly thereon so that the forward end of the brush head snaps past the resilient flange or wall 39 and it may be readily withdrawn from its seat construction 16, as can be understood.

Various changes in the shape, size, and arrangement of parts may be made to the form of the improved fountain tooth brush

herein shown and described, without departing from the spirit of the invention or the scope of the claims.

I claim:

1. As an article of manufacture a brush head comprising a section having bristles thereon and a transverse port therein, a pair of sections having grooves in the facing surfaces thereof, said sections being connected together so that the grooves of said pair of sections face each other to provide a duct having an outlet from the brush head at one end thereof and opening through the port of said first mentioned section onto the bristles of said brush.

2. As an article of manufacture a brush head for fountain tooth brushes comprising a base formed of an upper section, and intermediate and lower grooved sections welded together with the grooves facing to provide a duct extending longitudinally therethrough oval shaped in cross section, bristles upon said upper section, and a valve non-rotatably mounted upon the base of said brush head and operating within said duct for controlling the flow of dentifrice therethrough with respect to the bristles of the brush.

3. As an article of manufacture a brush head comprising bristles, and, a base construction including a top section supporting said bristles, an intermediate section, and a bottom section, said top section having a port transversely therethrough outletting upon said bristles, and said intermediate and lower sections providing facing grooves to provide a port which aligns at one end with said port of the top section, said bottom section having upstanding walls thereon for receiving therebetween the intermediate and top sections to accurately locate them with respect to the bottom section.

4. In a fountain tooth brush the combination of a frame providing a seat having a pocket therein with a tubular feed projection extending in said pocket at the rear end thereof, and a brush head including a base and bristles, said base providing a duct therethrough, opening at one end at the rear end of the base and on the bristles at its other end, said brush head adapted to be assembled in the pocket of said seat with the tubular feed projection extending into the rear end of said duct.

5. In a fountain tooth brush the combination of a frame providing a seat having a pocket therein with a resilient wall at the forward end thereof and a tubular feed projection extending into said pocket at the rear end thereof, and a brush head including a base and bristles, said base providing a duct therethrough opening at the rear end of the base and on the bristles at the other end of said duct, said brush head adapted to be assembled in the pocket of said seat with the tubular feed projection extending into the rear end of said duct and with the resilient wall of said seat engaging the forward end of said base to hold the same in said pocket.

6. As an article of manufacture a fountain tooth brush frame including a seat providing a rear wall having a tubular dentifrice feed projection extending therethrough, side walls extending in converging relation from said rear wall, and a resilient front wall, said rear wall, side wall, and resilient front wall providing a pocket.

7. In a fountain tooth brush the combination of a frame including an elongated seat providing a recess therein and having an upstanding resilient wall at an end thereof, a brush head including bristles and a base, said base having an elongated opening extending therethrough and a port communicating with said opening and outletting upon said brush bristles, said upstanding resilient wall of the frame having a slot extending downwardly therein from the upper edge thereof adapted to align with the opening of the brush head when the latter is seated in the frame recess, said base being adapted for detachable seating in said recess by snapping the same in place so that the resilient wall is flexed to hold the brush head in the recess of the base, and a valve slidable in the elongated opening of the brush head for controlling the flow of dentifrice thru the port of the brush head, said valve including a stem extending outwardly from the opening of the brush head and thru the slot of the resilient flange exteriorly of the frame.

8. As an article of manufacture a tooth brush comprising a brush head including bristles and a base formed of a plurality of sections grooved inwardly of the facing surfaces thereof, said sections being connected at their facing surfaces with the grooves in relation to provide a duct which is oval-shaped in transverse section, said duct having a transverse port leading through one of said sections to said bristles, and a valve member slidable in said duct in snug fitting relation therein, the same being oval-shaped in cross section to prevent rotation thereof, to regulate feeding of dentifrice through the duct with respect to said port.

ARNULFO MENDOZA.