Jan. 6, 1925. 1,521,783

A. MENDOZA

FOUNTAIN TOOTHBRUSH

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Fig. 1.

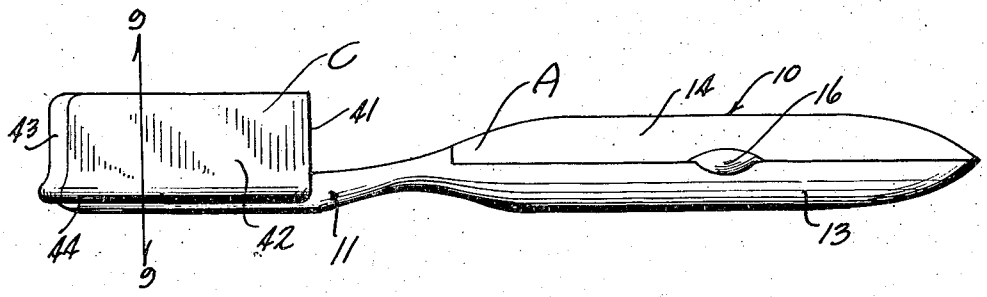


Fig. 2.

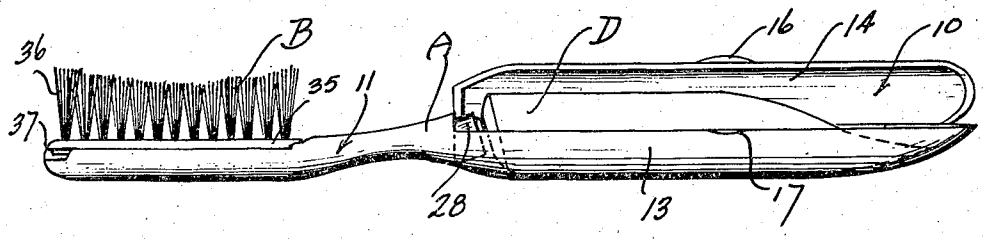
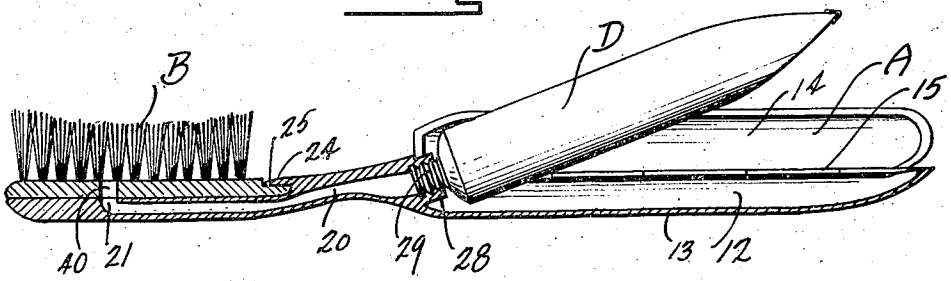


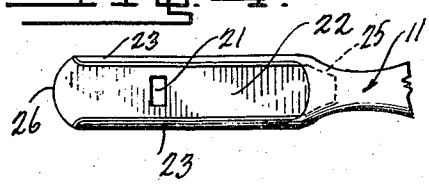
Fig. 3.



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Fig. 4.



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Fig. 5.

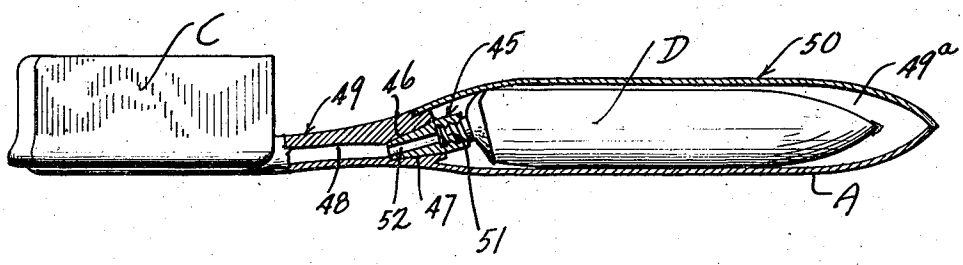


Fig. 6.

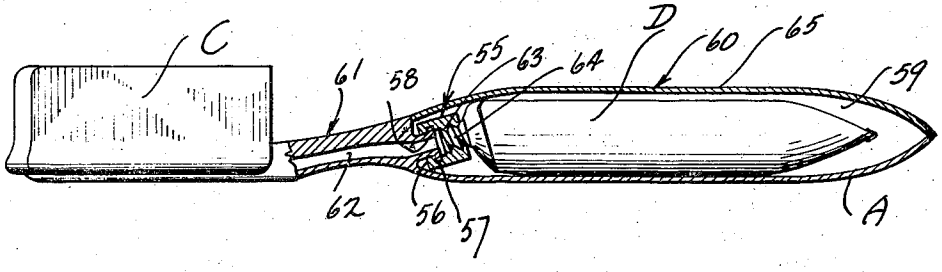


Fig. 7.

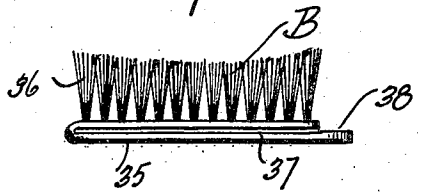


Fig. 8.

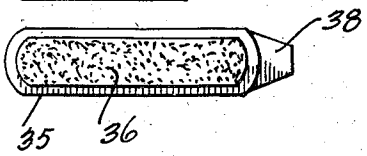
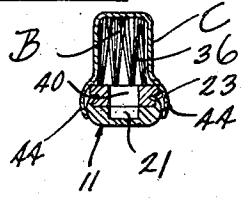


Fig. 9.



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Patented Jan. 6, 1925. 1,521,783

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 April 13, 1921. Serial No. 460,926.

To all whom it may concern:

Be it known that I, ARNULFO MENDOZA, a citizen of the United States of Mexico, residing at 120 Liberty Street, 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 application, Serial No. 426,540, filed November 26, 1920.

The primary object of the improved fountain brush is to provide a practical connection between the improved tooth brush, and a collapsible tooth paste container, whereby said container can easily be assembled to said tooth brush, and conveniently be used as a unitary part thereof.

A further object of the invention is the provision of an improved brush head for detachable connection to a handle structure and shank of the tooth brush, whereby a convenient and sanitary arrangement is provided.

A further object of the invention is the provision of an improved fountain tooth brush of the above described character, which is compact, metal enclosed and protected, and simply constructed of detachable parts to provide a sanitary structure, in which the parts are readily accessible for cleaning purposes.

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 construction in accordance with the present invention.

Figure 2 is a side elevation of the improved tooth brush showing the brush head uncovered and the cover of a handle structure removed.

Figure 3 is a view partly in cross section showing details of construction of the improved fountain tooth brush, and showing the method of attaching a collapsible dentifrice container to said tooth brush.

Figure 4 is a fragmentary plan view of a detail of the fountain tooth brush.

Figure 5 is a view partly in cross section of a modified form of fountain tooth brush.

Figure 6 is a side elevation partly in section of a further modification of the improved fountain tooth brush.

Figure 7 is a side elevation of the tooth brush head embodying a part of the improved device.

Figure 8 is a plan view of the tooth brush head illustrated in Figure 7.

Figure 9 is a cross-sectional view taken on the line 9—9 of Figure 1.

In the drawings, wherein for the purpose of illustration is shown the preferred embodiment of my invention, the letter A designates a supporting casing of the improved tooth brush, detachably receiving a brush head B, and a brush head casing C adapted for positioning over the brush head B for the purposes of protection when not using the tooth brush. The improved fountain tooth brush is adapted for use in connection with a collapsible tube D containing any approved dentifrice, preferably in the form of paste.

The supporting casing A is of any approved material, either flexible or rigid, although said casing is preferably manufactured of some highly polished metal, such as nickel, gold or silver. The casing A simulates somewhat the ordinary tooth brush and includes the hollow handle structure 10, and the brush head receiving shank 11. The hollow casing 10 is preferably oval in cross section to provide a space 12 therein for receiving the collapsible tube D. A lower section 13 of the handle 10 is rigid with the tooth brush head shank 11, while an upper section 14 is hingedly connected at one side 15 to the section 13. The side or cover 14 preferably comprises one half of the handle structure 10, and when closed is provided with a projecting portion 16 adapted for engagement upon a ridge 17 of the section 13.

The brush head shank 11 is preferably integral with the section 13, extending forwardly from the same, and provided with a bore 20 leading from the interior 12 of the casing 10 to communicate upwardly through a discharge port 21 formed on the brush head seating surface 22. The brush

head seating surface 22 is preferably flat, and provided upon the extreme end of shank 11. Arched side flanges 23 are provided upon each side of the seating surface 22, and terminate short of the forward extension of said seating surface substantially as illustrated in Figure 4. The seating surface 22 projects rearwardly into the shank and upon the inner portion thereof is provided with an overhanging projection 24 of the shank 11, to provide an inwardly converging pocket 25 for a purpose to be subsequently set forth. The discharge port 21 may of course, be situated any distance inwardly from the forward end 26.

The bore 20 leads outwardly through a socket structure 28, which socket structure is internally screw threaded and adapted to receive the nozzle 29 of the container D, and which nozzle is ordinarily provided upon dentifrice containers of the collapsible tube type. In attaching the tube D to the socket 28, when such socket is disposed in parallel alignment with the handle 10, some difficulty is encountered in properly screwing the same in place, due to the fact that the collapsible container D cannot be readily rotated to effect such screwing, when the same is positioned immediately on the handle 10. To facilitate attachment of the container, D, the socket 28 has accordingly been formed upon the supporting casing A having the axis thereof disposed upwardly at an acute angle with respect to the longitudinal axis defining the handle 10. It is preferred that the socket 28 have its opening, and axis facing the cover portion 14 of the handle 10, substantially as illustrated in the drawings. An observation of Figure 3 of the drawings will show the method of attaching the container D in position in the socket structure 28, and the purpose for which such socket structure has been provided. The socket 28 is preferably formed integral with the shank 11 and projects into the handle 10.

The brush head B is of special formation and comprises the base 35 formed of bone, celluloid, hard rubber, or any approved material, said base 35 having the ordinary tufts 36 mounted therein for cleansing the teeth. The base 35 is provided with longitudinal grooves 37, in each side thereof, and preferably centrally of said side; said grooves 37 being provided for the purpose of slidably receiving the arched guide flanges 23 of the shank 11. A reduced and tapered extension 38 is provided, rearwardly upon the base 35 of the brush head B, for the purpose of disposal within the pocket 25 formed in the brush head shank 11. Thus in assembling the brush head B, to the shank 11, the base 35 of the brush head is disposed upon the seating surface 22 and slid rearwardly from the forward end 26 of said shank, with the arcuate guide flanges 23 disposed in the side grooves 37 of the base 35. Said brush head B is manually pushed rearwardly until the extension 38 is disposed within the pocket 25, substantially as illustrated in Figure 3 of the drawings, and thus rigidly and securely connecting the brush head B to the receiving shank 11 of the supporting casing A. An aperture or port 40 is provided in the brush head B, and which aperture 40 aligns with the discharge port 21 when said brush head B is in assembled relation to the supporting casing A.

The brush head casing C is provided for disposal over the brush head B for the purpose of protecting the tufts 36 thereon, when the improved fountain tooth brush is not in use. The casing C is preferably rectangular in formation, having the rear end 41 thereof open to permit ready disposal of said casing C from the forward part of the fountain brush, and over the tufts 36. The sides 42 and forward end 43 of the casing C have their lower edge or marginal portions 44 bent outwardly and inwardly, for attachment to the sides of the shank 11 and the arched guide flanges 23, to prevent disconnection of said casing C.

In operation, when using the improved fountain tooth brush, the cover 14 thereof is swung upon the hinge 15 to open the hollow handle 10, the collapsible tube of dentifrice B is then inserted in axial alignment with the socket 28, and the nozzle 29 of said tube D is then screwed into the socket 28 until the same is in substantially the position illustrated in Figure 3. In this position the user of the tooth brush presses the tube D downwardly into the opening 12 of the rigid section 13 and this necessarily distorts the tube D adjacent its nozzle 29, this distortion being easily effected due to the collapsible nature of such tubes. The tube D now assumes the position as illustrated in Figure 2, and the cover or hinged lid 14 of the handle can then be closed and locked. When a person desires to use the device, the cover C is removed, the section 14 is unhinged, the operator presses down upon the collapsible tube D and the dentifrice contained in said tube is fed forwardly in the bore 20 upwardly through the discharge port 41, out through the aperture 40 in the brush head base 35 and on to the tufts 36.

Due to the fact that different sized tubes D are provided, it will be found expedient to provide a nozzle connection 45 in order to apply tubes of various size to the same fountain tooth brush.

In the form illustrated in Figure 5 of the drawings, the nozzle connection 45 is provided with a tapered snout 46, adapted for reception upon the inwardly tapering seat 17 provided in the bore 48 of shank 49, said

seat 47 being disposed to communicate with the opening 49ª, and provided in the handle structure 50. The nozzle connection 45 is provided with an internally screw threaded bore for a portion of its length to receive the nozzle 51 of the tube D in a detachable manner, said connecting piece 45 having a bore 52 centrally thereof adapted for communication with the bore 48 of the shank 49. In this manner the connecting piece 45 can be used for attaching to a standard size nozzle 51 of a special size of 2 B. Several of the nozzle connections 45 can be furnished with an improved fountain tooth brush, all of said connections having the same sized tapered snout 46, but varying in size as to the internally screw threaded bores for reception of the various nozzles 51 for different sized tubes D. The axis of the tapered seat 47 is disposed at an acute angle to the axis of the handle 50 and consequently the nozzle connection when inserted therein has its axis similarly positioned. In all other respects, the improved fountain tooth brush illustrated in Figure 5 is the same as that above described.

As a further modification, a swivel type of nozzle connection 55 can be provided, the same having a forwardly overlapping annular flange 56 adapted to grip an outwardly extending annular flange 57, provided upon a nipple 58 extending into the pocket 59 provided in the handle structure 60. The nipple 58 is preferably formed integral upon the shank 61 of the improved fountain brush, and the bore 62 is provided in said shank 61 which communicates through the nipple 58 into the internally screw threaded bore 63, extending to communicate into the pocket 59. The swivel nozzle connection 55 is adapted to detachably receive the screw threaded nozzle 64 of a collapsible tube D, substantially as illustrated in Figure 6. With this type of connection, the nipple 58 of course, is extended upwardly so that its axis is disposed at an acute angle to the axis of the handle 60, and which is provided for the purpose of facilitating entrance of the tube D in the pocket 59. In using this type of fountain tooth brush, the operator inserts the collapsible tube D through the opening provided by swinging back the cover 65 of the handle 60, and the swivel connection 55 is rotated upon the nipple 58, at the same time applying the nozzle 64 into the socket opening 63 of the swivel 55, and upon rotation of said swivel 55 the nozzle 64 will be secured thereto. The tube D is then bent downwardly, substantially as above described, for the improved form shown in Figure 3. In all other respects the improved fountain brush illustrated in Figure 6 is similar to that above described.

Various changes in the shape, size and arrangement of parts may be made to the forms of the invention herein described and shown, since many types of nozzle connections can be provided, as well as refinements of the valve control, without departing from the spirit of the invention or the scope of the claims.

I claim:

1. In a device of the above described character, a tooth brush including a handle adapted to receive a dentifrice container, and a brush head connected to and in communication with the interior of the handle by means of a bore leading from said handle into said brush head, the axis of the portion of said bore adjacent the handle being disposed at an acute angle to the longitudinal axis of said handle, and a nozzle connection for detachably receiving the feed end of said container and adapted for detachable reception in the portion of the bore of said tooth brush adjacent said handle, the angle of said bore to the axis of the handle being such that the closed end of a container seated by means of said nozzle connection in said bore will project outside the outline of the handle whereby the container may be accessible for manipulating the same.

2. In a device of the above described character, a tooth brush including a handle adapted to receive a dentifrice container and provided with a covered opening in a side thereof, and a brush head connected to and in communication with the interior of the handle by means of a bore leading from said handle into said brush head, said bore adjacent the handle being tapered outwardly to provide a seat, the axis of said seat extending toward the opening in said handle and being disposed at an acute angle to the longitudinal axis of said handle, and a connecting seat for detachably receiving the nozzle of said collapsible container having a tapered extension for detachable reception in the tapered seat of said tooth brush, the angle of the tapered seat to the axis of the handle being such that the closed end of a container seated as above mentioned will project outside the outline of the handle whereby the container may be accessible for manipulating the same.

3. A fountain tooth brush comprising a supporting construction having a hollowed handle at one end thereof adapted to receive a collapsible dentifrice container, said handle including a hinged closure section which swings on an axis substantially parallel with the longitudinal axis of the handle, a brush head carried by said supporting construction, said supporting construction being provided with a port leading from the interior of said hollowed handle to said brush head, the portion of the port terminating in said hollow handle providing a socket for detachably receiving the feed end of a dentifrice

container, said socket being inclined at an acute angle with respect to the longitudinal axis of the hollowed handle and facing in the direction of the opening covered by the closure section of said handle, whereby a dentifrice container may be inserted in said socket at an acute angle to the axis of the hollowed handle and bent downwardly into said hollow handle so that the closure section thereof may be shut.

4. In a device of the above described character a tooth brush including a handle adapted to receive a dentifrice container, and a brush head connected to and in communication with the interior of the handle by means of a bore leading from said handle into said brush head, the axis of the portion of said bore adjacent the handle being disposed at an acute angle to the longitudinal axis of said handle, the angle of said bore to the axis of the handle being such that when the feed end of a container is seated in the portion of the bore adjacent said handle the closed end of the container will project outside the outline of the handle whereby the container may be accessible for manipulating the same.

ARNULFO MENDOZA.