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S. E. WALLACE

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FOUNTAIN BRUSH

Filed June 8, 1932

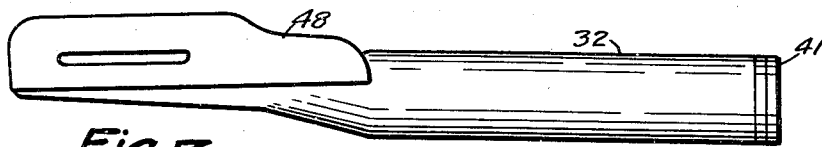
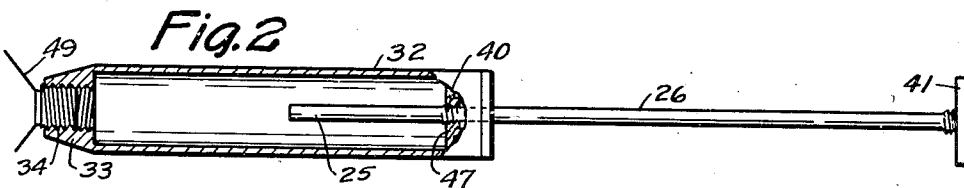
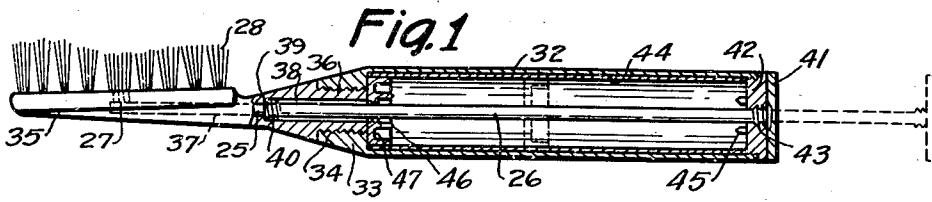


Fig. 3

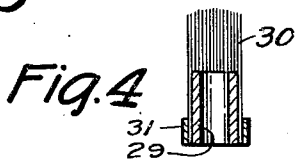


Fig. 4

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## UNITED STATES PATENT OFFICE

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## FOUNTAIN BRUSH

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The invention is an improvement in fountain toothbrushes of the type having a reservoir in the handle in which a plunger in the reservoir may be readily connected or disconnected to a rod by which it may be operated from the exterior of the handle, and the rod may be used for sealing the opening thru which the contents may be ejected, and also in which the contents are ejected thru an opening surrounded by bristles so that they may be supplied to any part of the brush desired.

The object of the invention is to provide a fountain toothbrush in which the opening thru which the substance is fed to the brush may be sealed.

Another object of the invention is to provide a fountain toothbrush in which a substance may be fed thru a tubular bristle to any desired part of the brush.

Another object of the invention is to provide a fountain brush having a reservoir in the handle and a plunger in the reservoir, in which the plunger may readily be connected or disconnected to a rod by which it may be operated.

A further object of the invention is to provide a fountain toothbrush having a reservoir in the handle in which either end of the handle may be opened.

A still further object of the invention is to provide a fountain toothbrush having a reservoir in the handle in which the brush is held to the handle by a threaded sleeve similar to the threaded nipple of a paste tube so that the brush may be removed and the paste tube screwed into the same opening to fill the reservoir in the handle.

And a still further object of the invention is to provide a fountain toothbrush having a reservoir in the handle and positive means for sealing the opening between the reservoir and brush, which is of a simple and economical construction.

With these ends in view the invention embodies a fountain toothbrush having a reservoir in the handle and an opening from the reservoir to the brush, and a plunger in the reservoir by which a substance therein may be forced into the brush, in which the

plunger may readily be connected or disconnected to a rod by which it may be operated from the exterior of the brush.

Other features and advantages of the invention will appear from the following description taken in connection with the drawing, wherein:—

Figure 1 is a view showing a toothbrush with part of the handle broken away showing the brush in the closed position and the piston at the end of the reservoir, or in the empty position.

Figure 2 is a view showing the method of filling the handle of the toothbrush.

Figure 3 is a view showing the toothbrush in the closed position.

Figure 4 is a detail showing a cross section thru the tubular bristles thru which the substance is supplied to the brush.

In the drawing the device is shown as it would be made and it will be noted that the brush and handle may be of any type, shape or design. The handle is formed with a reservoir and a small opening leads from the reservoir to the brush, and a plunger forces material thru the opening to the brush. The plunger is mounted on a rod and the end of the rod, which is indicated by the numeral 26, is extended to form a closure for and to seal the opening thru which the material may be forced to the bristles of the brush 28 thru the tubular sleeve 29 formed inside of the bristles 30 which may be cemented to the outer surface of the sleeve 29 and held by a band 31, as shown in Figure 4. It will be noted that this tubular bristle, or group of bristles, may be formed in any manner, may be of any shape or design and may be located at any position in the brush, instead of in the center, as shown in Figure 1.

In the design shown in Figure 1 the handle is formed with a tubular casing 32 having a head 33 at one end in the center of which is a threaded opening 34 so that the threaded nipple of a paste tube may be screwed therein to fill the handle. The brush is held in a base 35 having a threaded shank 36 that may be screwed into the threads of the opening 34 and inside of the

head is an opening 37 having an enlarged portion 38 extending from a point 39 to the outer end of the shank 36 and it will be noted that threads 40 on the rod 26 may pass thru the opening 38 when the rod 26 is moved all of the way thru the handle so that the end 25 will seal the opening 27. In this position a head 41 at the outer end of the handle will be against a cap 42 at the end of the handle, as shown in Figure 1, and threads 43 on the rod will be screwed into the cap 42. In this design the handle may also be provided with an internal sleeve 44 and pins 45 and 46 may be provided on the cap 42 and plunger, which is indicated by the numeral 47, to prevent the plunger rotating when it is desired to screw the threads 40 of the rod 26 into the plunger, with the plunger at this end of the handle. The brush may be provided with a cap 48 to form a closure for the bristles, as shown in Figure 3.

It will be understood that the handle may also be made of any other description and the parts connecting the handle to the brush may be changed to accommodate the type of brush used.

It will be understood that other changes may be made in the device without departing from the spirit of the invention. One of which changes may be in the design or shape of the plunger, another may be in the use of other means for operating the plunger, and still another may be in the use of other means for connecting the plunger to the operating means.

The construction will be readily understood from the foregoing description. In use the device may be provided in either of the designs shown and it will be noted that normally the rod will be placed all of the way thru the handle with the head 41 against the end of the handle, as shown in Figure 1, and with the handle full of paste or the like, the rod may be unscrewed from the cap 42 at the end of the handle by turning the head 41 at the end of the rod, and then drawn outward so that the threads 40 at the opposite end of the rod will engage the plunger. The rod may then be rotated until the threads 40 thereof screw into the threads of the plunger and then as it is forced inward it will take the plunger with it and force some of the paste into the brush at the opposite end. When a sufficient amount of paste has been forced into the brush the rod may be unscrewed from the plunger and then moved all of the way into the handle and secured therein by the threads inside of the head.

When it is desired to refill the handle the brush is removed and a paste tube 49 screwed into the threads 34 in the head of the handle. The plunger may then be withdrawn to the opposite end, as shown in Figure 2, and as

the tube is squeezed the contents thereof will pass into the interior of the handle, until the handle is filled. The paste tube may then be removed and the brush replaced by screwing it into the same threads into which the paste tube was screwed. It will be noted that the ends of the handle may readily be removed so that it may be readily cleaned and sterilized. It will also be noted that by providing means for readily connecting and disconnecting the plunger to the rod it is possible to use the same rod to operate the plunger and seal the opening at the end of the handle, and by providing a tubular shaped bristle it is possible to supply the paste to any desired part of the brush. It is also possible to clean the brush and reservoir by holding the brush in water and drawing the plunger backward and forward, as the suction created by the plunger will draw water into the reservoir and then expel it as it moves inward.

Having thus fully described the invention what I claim as new and desire to secure by Letters Patent, is:—

1. A fountain tooth brush comprising a hollow handle providing a cylinder, a stem mounted axially in the cylinder and being of greater length than the cylinder and adapted to project through the opposite ends thereof, a brush head having a shank at one end for detachable connection with the handle and provided in said shank with a feed passage leading directly therethrough to the brush head in axial alinement with said cylinder for receiving the end of the stem when projected through the cylinder, said feed passage and stem being relatively proportioned to completely fill the feed passage by said stem, and a plunger detachably mounted on said stem and disposed in said cylinder for operation by said stem when retracted from said feed passage.

2. A fountain tooth brush comprising a hollow handle providing a cylinder, a brush head having a shank connected to one end of the handle and having a feed passage therein leading to the brush head in axial alinement with said cylinder, a plunger in said cylinder for ejecting tooth paste into said shank and brush head, and a slidable stem mounted in said handle in coaxial relation with the cylinder and the feed opening of said shank, said stem being proportioned as to length and diameter as to completely fill said feed passage in the shank and eject accumulations of paste normally left therein, said stem and said plunger having detachable connecting means whereby said stem when withdrawn from the shank may be connected to said plunger for operating the latter.

3. A fountain tooth brush, comprising a brush head, and a hollow handle therefor providing a cylinder for tooth paste, said

head having a passage therethrough in axial  
 alinement with the cylinder and opening  
 into one end of the same, a plunger in the  
 cylinder, a stem in the cylinder having de-  
 5 tachable engagement with the plunger for  
 operating the latter to eject the paste into  
 the passage, the end of said stem providing  
 a second plunger for engagement in the  
 passage when the stem is freed from the  
 10 first plunger to eject the paste from the  
 passage into the brush head.

4. A fountain tooth brush, comprising a  
 brush head and a handle therefor, said han-  
 dle having a longitudinal cylinder therein  
 15 for tooth paste and an axial feed passage  
 leading from one end of the cylinder to the

brush head, a plunger slidable in the cyl-  
 20 nder, an axial stem extending through the  
 cylinder and into said passage and having  
 detachable engagement with the plunger  
 for operation of the latter by the stem to  
 25 eject a desired amount of the tooth paste  
 from the cylinder into said passage, the end  
 of said stem providing a second plunger for  
 movement into the passage when the stem  
 30 is released from the first plunger to eject  
 the tooth paste from the passage into the  
 brush head and prevent escape of the paste  
 from the handle and maintain the passage  
 clear of the paste for subsequent operation.

In testimony whereof I affix my signature. 80  
 SADYE E. WALLACE.

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