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A. PALIMERI ET AL  
TOOTH BRUSH

2,090,144

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Fig. 1.

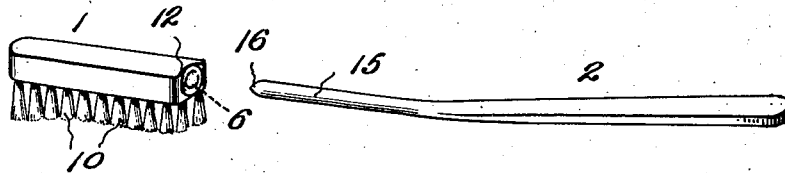


Fig. 2.

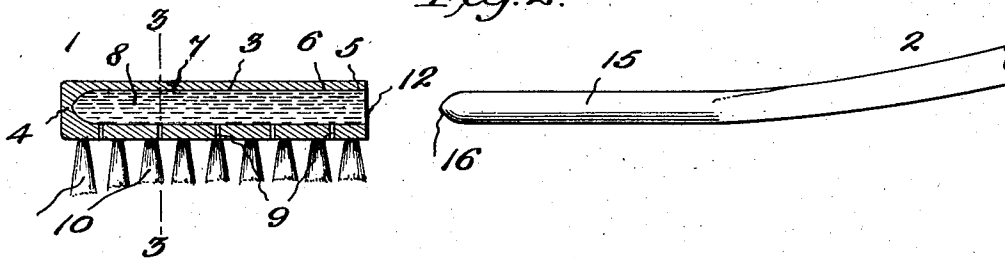


Fig. 3.

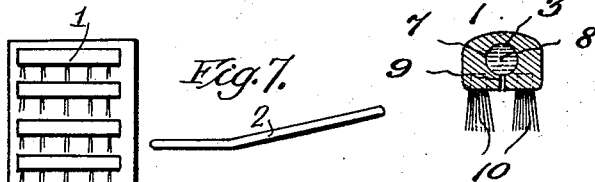


Fig. 7.



Fig. 5.

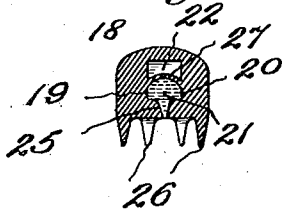


Fig. 4.

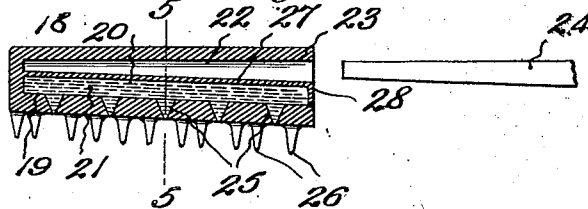
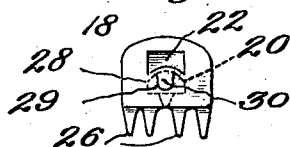


Fig. 6.



INVENTORS  
ANTHONY PALIMERI  
JOHN GUARDINO

BY

Geo. A. Byrne.

ATTORNEY.

## UNITED STATES PATENT OFFICE

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## TOOTH BRUSH

Anthony Palimeri and John Guardino, New York,  
N. Y., assignors to Lawrence H. Nicargi, Brook-  
lyn, N. Y.

Application January 25, 1935, Serial No. 3,397

2 Claims. (Cl. 15-167)

The invention relates to improvements in toothbrushes, in which the head is used as a receptacle for containing a dentifrice.

An object of the invention is to produce a sanitary toothbrush with the dentifrice inserted therein and sealed at the time of manufacture.

A further object of the invention is to provide a sanitary toothbrush with an attachable handle, which when connected to the head of the brush causes the ejection of a dentifrice contained therein.

A still further object of the invention is to provide an inexpensive toothbrush of this type in which a handle and a quantity of heads containing a dentifrice, may be put up and dispensed in a neat and attractive package, and the heads when once used may be immediately discarded.

With these and other objects in view, the invention consists of a toothbrush comprising a head and an attachable handle, the head being hollow to receive a dentifrice and having ducts establishing communication between the bristles and interior of the brush, one end of the head being open for the reception of the handle which, when inserted, in the opening is adapted to force the dentifrice out of the head and to the bristles.

Referring to the drawing,—

Figure 1 is a perspective view of the brush with the handle detached from the head.

Figure 2 is a longitudinal sectional view of the brush head with an end portion of the handle separated therefrom.

Figure 3 is a cross sectional view of the head taken on the line 3—3 of Figure 2.

Figure 4 is a longitudinal sectional view of a modified form of head with an end portion of the handle separated therefrom.

Figure 5 is a cross sectional view of the head taken on the line 5—5 of Figure 4.

Figure 6 is an end elevational view of the brush head shown in Figure 4 and looking toward the left, and

Figure 7 is a diagrammatic illustration of the invention, showing a plurality of brush heads with a common handle therefor.

Referring to the drawing in detail, the brush comprises a head portion 1 and a handle portion 2, which is adapted to be connected to the head when the brush is to be used.

The head portion of the brush may be formed of any material suitably adapted for the purpose and is provided with a central longitudinal cavity 3, closed at its forward end 4 and open at its rear end 5, to provide a port 6 through which one end of the handle is inserted, when connected to

the head. The cavity 3 is formed in the head to provide a reservoir 7, adapted to be filled with a dentifrice or medicament 8. A plurality of ducts 9 are provided in the head and extend from the reservoir 7 to a region adjacent the bristles 10, for the discharge of the dentifrice to the bristles. After the reservoir has been filled with a suitable dentifrice through the port 6, the open end of cavity is then closed and sealed by means of a small label 12, secured by adhesive, to the end of the brush head as shown. The label is preferably made of thin suitable paper which may be readily punctured by the end of the handle when being connected to the head.

The handle 2 may be made in any suitable shape and is reduced at one end portion, as at 15, to a size and shape that will readily and snugly fit within the cavity 3 of the head 1. The end portion 15 is solid in cross section and is tapered at its outer end to a point 16 to facilitate the breaking of the seal 12 and to guide the handle into the reservoir 7.

When the handle is being attached to the head it is obvious that, as the end of the handle enters the port 6 and is forced into the cavity 3, displacement of the dentifrice contained therein will occur and the dentifrice will be ejected through the ducts 9 to the bristles 10.

In the form of toothbrush shown in Figures 4 to 6, a somewhat modified form of structure is employed.

An important feature of this type of brush is the provision of means whereby the degree of application of a dentifrice or medicament to the teeth may be controlled by the handle and also, by the degree of pressure of the brush against the teeth or gums.

In this type of toothbrush the head 18 is preferably molded from resilient vulcanized rubber and is provided with a lower longitudinal closed cavity 19, providing a reservoir 20, adapted to be filled with a dentifrice or suitable medicament 21 and an upper longitudinal tapered cavity 22 closed at its forward or small end and open at its rear or large end 23, to provide a port into which the tapered end of the handle 24 is inserted, when connected to the head. A plurality of V shaped ducts 25 are provided in the head and extend from the reservoir 20 to a region adjacent the elongated projections providing rubber bristles for the discharge of the dentifrice thereto.

The upper and lower cavities are separated by a thin flexible wall 27 and the inner end wall 28, of the reservoir 20, is provided with a U-shaped cut portion 29, to provide a flap valve 30, which

is adapted to be opened inwardly by means of a suitable implement used for filling the reservoir with dentifrice. After the filling implement has been withdrawn from the valve opening, the flap 5 will close, and thus provide a seal for the reservoir 20.

When the handle 24 is attached to the head 18, its tapered end enters the cavity 22 and exerts a pressure on the flexible wall 27, which 10 forces a portion of the dentifrice out of the reservoir 20 and through the ducts 25 to the rubber bristles 26. When pressure of the brush is exerted against the teeth, or against the gums as during a massaging operation, the walls of the 15 brush head will yield, due to their elasticity, and also force a quantity of the dentifrice out of the reservoir and through the ducts 25 to the rubber bristles 26.

While we have shown and described two forms 20 of the invention, it will be understood that we do not wish to be limited thereto, since various changes may be made therein without departing from the invention within the scope of the claims.

25 What we claim is:

1. A toothbrush comprising a bristle head adapted to be applied to the handle by the user, said bristle head being provided with a cavity constituting a receptacle for dentifrice and a socket 30 for the handle, said cavity extending longitudinally of the bristle head and being greater in length than width, one end of said cavity being

fully open to permit the forward portion of the handle to be inserted therein and the other end of said cavity being closed, said bristle head having a port near the closed end of said cavity through which port the dentifrice is forced to the bristles by the handle during the application 5 of the head to the handle, the top, bottom and sides of said bristle head being rigid to prevent their distortion during the application of said bristle head to said handle, and said cavity being of such width as to snugly receive said handle. 10

2. A toothbrush comprising a bristle head adapted to be applied to the handle by the user, said bristle head being provided with a cavity constituting a receptacle for dentifrice and a 15 socket for the handle, said cavity extending longitudinally of the bristle head and being greater in length than width, one end of said cavity being fully open to permit the forward portion of the handle to be inserted therein and the other 20 end of said cavity being closed, said bristle head having a port near the closed end of said cavity through which port the dentifrice is forced to the bristles by the handle during the application of the head to the handle, and said cavity being 25 of such width as to snugly receive said handle, and a closure for the open end of said cavity, said closure being frangible so that said handle may be inserted into said socket without first removing said closure. 30

ANTHONY PALIMERI.  
JOHN GUARDINO.