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DISPOSABLE HEAD TOOTH BRUSH

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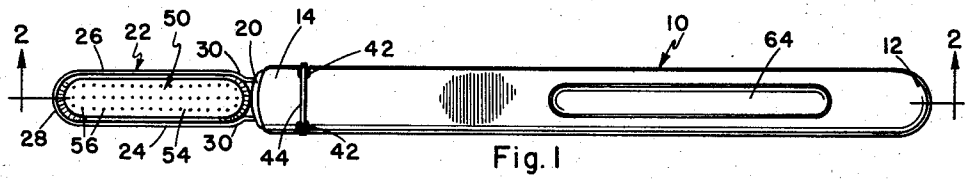


Fig. 1

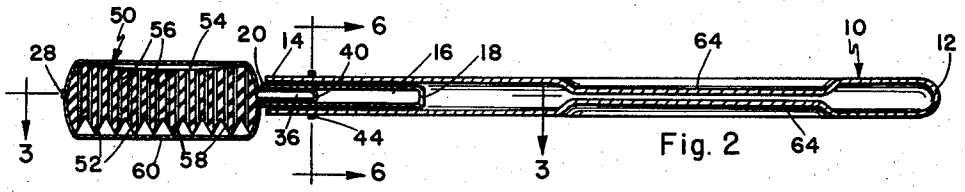


Fig. 2

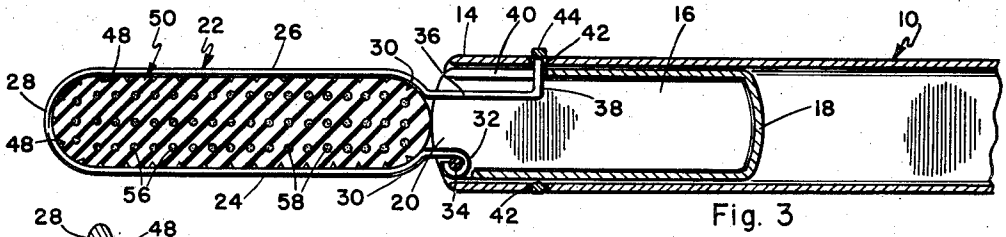


Fig. 3



Fig. 7

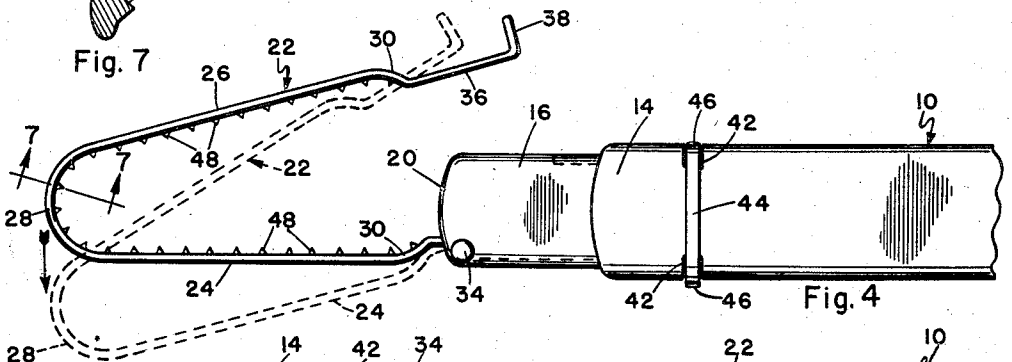


Fig. 4

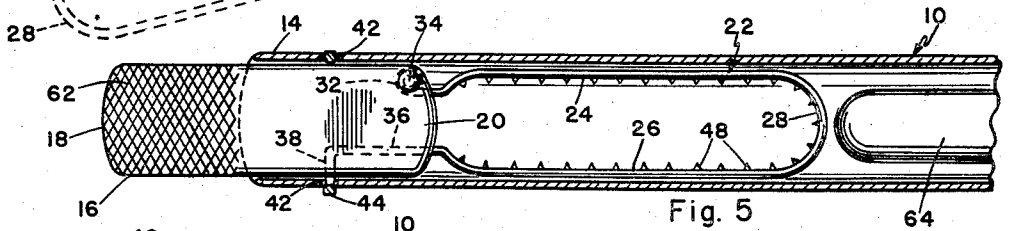


Fig. 5

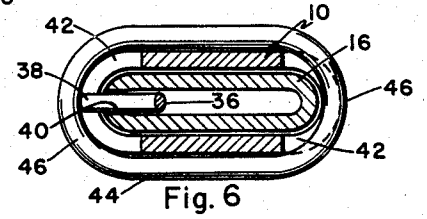


Fig. 6

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DISPOSABLE HEAD TOOTH BRUSH

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8 Claims. (Cl. 15—123)

The present invention relates generally to toilet articles and more particularly to a disposable head tooth brush.

The primary object of this invention is to provide a tooth brush which is particularly suitable for carrying in the pocket and utilizes a disposable head containing its own supply of dentifrice, the head being packaged in a sanitary wrapper.

Another object of this invention is to provide a tooth brush in which the disposable head may be inserted while still wrapped, the head holding portion having means for perforating the wrapper to facilitate its removal, thus eliminating the necessity of handling the unwrapped head.

Another object of this invention is to provide a tooth brush having a head retaining clamp which is positively engaged in the handle and has easily actuated release means to facilitate its extension and opening for inserting the head.

Still another object of this invention is to provide a tooth brush in which the head holding portion may be reversed in the handle for storage so that the portion which enters the mouth is fully enclosed and protected.

Another object of this invention is to provide a tooth brush which is adapted for fabrication from many different materials, so that the choice of material can be according to the dictates of availability and price considerations, the exact sizes and proportions being matters easily determined to suit particular conditions and needs.

Another object of this invention is to provide a tooth brush which is practicable and inexpensive to manufacture.

Finally, it is an object to provide a tooth brush which is simple, safe and convenient to use and which will give generally efficient and durable service.

With these and other objects definitely in view, this invention consists in the novel construction, combination and arrangement of elements and portions, as will be hereinafter fully described in the specification, particularly pointed out in the claims, and illustrated in the drawing which forms a material part of this disclosure, and in which:

Figure 1 is a top plan view of the tooth brush;

Figure 2 is a sectional view taken on the line 2—2 of Figure 1;

Figure 3 is an enlarged fragmentary sectional view taken on the line 3—3 of Figure 2;

Figure 4 is an enlarged fragmentary top plan view of the tooth brush with the head holder extended and opened;

Figure 5 is a sectional view similar to Figure 3, but with the head removed and the head holder, which is shown in full, reversed;

Figure 6 is an enlarged sectional view taken on the line 6—6 of Figure 2 with the part hereinafter designated the release ring shown in elevation; and

Figure 7 is an enlarged sectional view taken on the line 7—7 of Figure 4.

Similar characters of reference indicate similar or identical elements and portions throughout the specification and throughout the views of the drawing.

Referring now to the drawing in detail, the tooth brush comprises a handle 10 which may be of flattened tubular construction and having a closed end 12 and an open end 14. Fitted into the open end 14 is a head holder assembly comprising a casing 16 having a closed end 18 and an open end 20, with a resilient wire loop 22 mounted in said open end. The loop 22 comprises a pair of normally parallel arms 24 and 26 joined at one end by an arcuate end portion 28, the other ends of said arms having inwardly turned portions 30. The free end of the arm 24 has a ring element 32 formed therein and is pivotally secured by means of this ring element on a rivet 34, or the like, which is fixed through the open end 20 of the casing 16 adjacent one side thereof. The free end of the arm 26 has a longitudinally extending bar 36 at the end of which is an outwardly turned prong 38, the side of the casing 16 opposite the rivet 34 having a longitudinal slot 40 to permit said bar to swing into and out of the casing.

The handle 10 has a pair of opposed slots 42 adjacent the open end 14, said slots being in each side of the handle and extending through the entire thickness thereof, as shown in Figure 6. These slots 42 are spaced from the open end 14 in such manner that, when the casing 16 is almost entirely enclosed in the handle 10, the prong 38 enters one of said slots and locks the casing against longitudinal displacement, the resiliency of the loop 22 being sufficient to retain the prong firmly in place. To facilitate removal of the casing 16, the handle 10 is provided with a release ring 44 which is shaped to fit around the handle at the slots 42, the arcuate ends 46 of said release ring fitting into said slots. The major inside dimension of the release ring 44 is slightly less than the width of the handle 10, so that said ring has limited lateral movement on the handle but is not removable therefrom, as will be evident from Figure 6. When the prong 38 is engaged in one of the slots 42, the end of the prong bears against the inner face of the release ring 44 and pushes the ring to one side. Thus by pressing the protruding portion of the release ring 44 inwardly, the prong 38 is released from the slot 42 so that the casing 16 may be removed from the handle. The loop 22 is preferably fabricated from wire which is elliptical or ovoid in cross section, as shown in Figure 7, to provide resiliency in the plane of the loop and rigidity normal to the plane for support when using the brush, the inner surface of said loop having a plurality of spaced, inwardly projecting teeth 48.

The tooth brush head 50 comprises a pad of resilient material such as rubber, plastic, or the like and is shaped to fit inside the loop 22 and extend above and below said loop. The lower surface of the head 50 has a plurality of pyramidal serrations 52 corresponding to the bristles of a brush, while the upper surface 54 of the head is substantially smooth. The specific cross sectional shape of the head 50, other than the portions described, is not critical. The head 50 has therein a plurality of tubular perforations or channels 56 extending substantially vertically from the upper surface 54, through the head to the serrations 52, said channels being suitably spaced throughout the head. These perforations or channels 56 are filled with a suitable dentifrice indicated at 58. The head 50 is sealed in a suitable wrapper 60 for sanitary reasons and may be fitted into the loop 22 with the wrapper intact. The loop 22 is first opened as shown in Figure 4, so that the head 50 can be inserted easily, said loop then being closed to clamp said head securely and the casing 16 pushed into the handle 10 until the prong 38 locks into the slot 42. The wrapper

60 is perforated by the teeth 48 on the inside of the loop 22 and is thus easily removed from the head 50 without it being necessary to handle the head directly.

In use, either side of the head 50 may be used, the smooth upper surface 54 for general scrubbing and the serrations 52 for cleaning crevices and inner surfaces of the teeth, or for massaging the gums. It should be noted that the perforations 56 exerted a considerable suction when the head is rubbed firmly over the teeth and aid in loosening food particles adhering to the teeth.

After use, the loop 22 is released by means of the release ring 44 and the casing 16 is removed from the handle 10 for discarding the head 50. For storage the casing 16 is reversed and the loop 22 is inserted into the handle 10 first, said casing being pushed inwardly until the prong 38 locks into one of the slots 42, as shown in Figure 5. The casing 16 is dimensioned so that, in this reversed position, the closed end 18 protrudes, the surface of said closed end being knurled or otherwise roughened, as at 62, to afford a better grip for removal of the casing. To prevent the casing 16 from being inserted too far into the handle 10, the faces of said handle are provided with opposed, inwardly depressed ribs 64, the space between said ribs within the handle being substantially less than the thickness of the yoke 22. The ribs 64 also serve as stiffeners for the handle 10 and provide a means for gripping the handle securely. The loop 22 is completely enclosed and thus protected from soiling or contamination when the tooth brush is carried in the pocket and, together with the individually packaged heads, this structure fulfills all sanitary requirements for such a device.

The operation of this invention will be clearly comprehended from a consideration of the foregoing description of the mechanical details thereof, taken in connection with the drawing and the above recited objects. It will be obvious that all said objects are amply achieved by this invention.

It is understood that minor variation from the form of the invention disclosed herein may be made without departure from the spirit and scope of the invention, and that the specification and drawing are to be considered as merely illustrative rather than limiting.

I claim:

1. A tooth brush comprising: a hollow handle having one open end; a casing removably held in said open end; an elongated loop element secured in said casing and extending longitudinally from said handle; a brush head of resilient material shaped to fit tightly in said loop element and having a rough-surfaced tooth cleaning face; said head having a plurality of dentifrice-containing channels communicating with said cleaning face; a wrapper enclosing said head; said loop element having a plurality of inwardly projecting teeth to perforate said wrapper for easy removal thereof.

2. A tooth brush comprising: a hollow handle having one open end; a casing removably held in said open end; an elongated, substantially resilient loop element having a pair of parallel arms interconnected at one end, the other end of one of said arms being pivotally attached to said casing, the other end of the other arm being releasably engageable with said handle; a brush head of resilient material shaped to fit tightly in said loop element and having a rough-surfaced tooth cleaning face; said head having a plurality of dentifrice-containing channels communicating with said cleaning face; a wrapper enclosing said head; said loop element having a plurality of inwardly projecting teeth to perforate said wrapper for easy removal thereof.

3. A tooth brush comprising: a hollow handle having one open end; a casing removably held in said open end; an elongated loop element secured in said casing and extending longitudinally from said handle; a brush head of resilient material shaped to fit tightly in said loop element; said head having a serrated face and a smooth face opposed thereto, and a plurality of dentifrice-containing channels communicating with both of said faces.

4. A tooth brush comprising: a hollow handle having one open end; a casing removably held in said open end; and elongated loop element secured in said casing and extending longitudinally from said handle; a brush head of resilient material shaped to fit tightly in said loop element; said head having a serrated face and a smooth face opposed thereto, and a plurality of dentifrice-containing channels communicating with both of said faces; a wrapper enclosing said head; said loop element having a plurality of inwardly projecting teeth for linearly perforating said wrapper for easy removal thereof.

5. A tooth brush comprising: a hollow handle having one open end; a casing removably held in said open end; an elongated, substantially resilient loop element having a pair of parallel arms interconnected at one end, the other end of one of said arms being pivotally attached to said casing, the other end of the other of said arms having an outwardly turned prong integral therewith; said handle having a slot to receive said prong, whereby said casing is locked against shifting longitudinally in the handle; and means for releasing said prong from said slot; a brush head of resilient material shaped to fit tightly in said loop element and having a rough-surfaced tooth cleaning face; said head having a plurality of dentifrice-containing channels communicating with said cleaning face; a wrapper enclosing said head; said loop element having a plurality of inwardly projecting teeth to perforate said wrapper for easy removal thereof.

6. A tooth brush comprising: a hollow handle having one open end; a casing removably held in said open end; an elongated, substantially resilient loop element having a pair of parallel arms interconnected at one end, the other end of one of said arms being pivotally attached to said casing, the other end of the other of said arms having an outwardly turned prong integral therewith; said handle having a slot to receive said prong, whereby said casing is locked against shifting longitudinally in the handle; a ring element mounted on said handle and shiftable laterally thereon, said ring element being positioned to enter said slot and depress said prong to release the prong from the slot; a brush head of resilient material shaped to fit tightly in said loop element and having a rough-surfaced tooth cleaning face; said head having a plurality of dentifrice-containing channels communicating with said cleaning face; a wrapper enclosing said head; said loop element having a plurality of inwardly projecting teeth to perforate said wrapper for easy removal thereof.

7. A tooth brush comprising: a hollow handle having one open end; a casing removably held in said open end; an elongated, substantially resilient loop element having a pair of parallel arms interconnected at one end, the other end of one of said arms being pivotally attached to said casing, the other end of the other of said arms having an outwardly turned prong integral therewith; said handle having at least one slot adjacent said open end to receive said prong, whereby said casing is locked selectively in two positions against shifting longitudinally in said handle with said loop element extending from the handle in one position and with the loop element enclosed in the handle in a reversed position; a ring element mounted on said handle and shiftable laterally thereon, said ring element being positioned to enter said slot and depress said prong to release the prong from the slot; a brush head of resilient material shaped to fit tightly in said loop element and having a rough-surfaced tooth cleaning face; said head having a plurality of dentifrice-containing channels communicating with said cleaning face; a wrapper enclosing said head; said loop element having a plurality of inwardly projecting teeth to perforate said wrapper for easy removal thereof.

8. A tooth brush comprising: a hollow handle having one open end; a casing removably held in said open end;

an elongated, substantially resilient loop element having a pair of parallel arms interconnected at one end, the other end of one of said arms being pivotally attached to said casing, the other end of the other of said arms having an outwardly turned prong integral therewith; said handle having at least one slot adjacent said open end to receive said prong, whereby said casing is locked selectively in two positions against shifting longitudinally in said handle with said loop element extending from the handle in one position and with the loop element enclosed in the handle in a reversed position; a ring element mounted on said handle and shiftable laterally thereon, said ring element being positioned to enter said slot and depress

said prong to release the prong from the slot; a brush head of resilient material shaped to fit tightly in said loop element and having a rough-surfaced tooth cleaning face.

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