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E. DOLL

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TOOTHBRUSH

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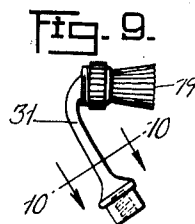
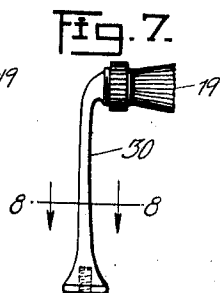
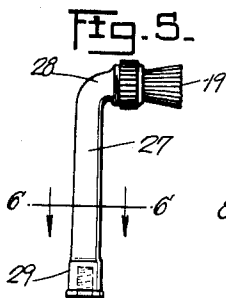
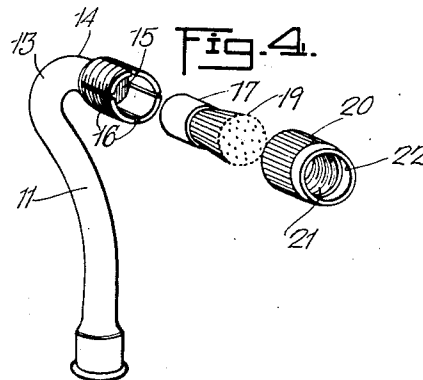
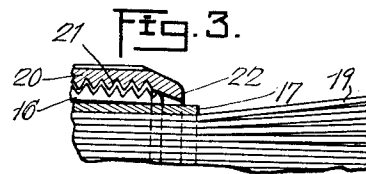
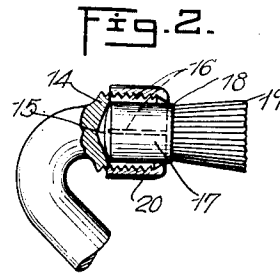
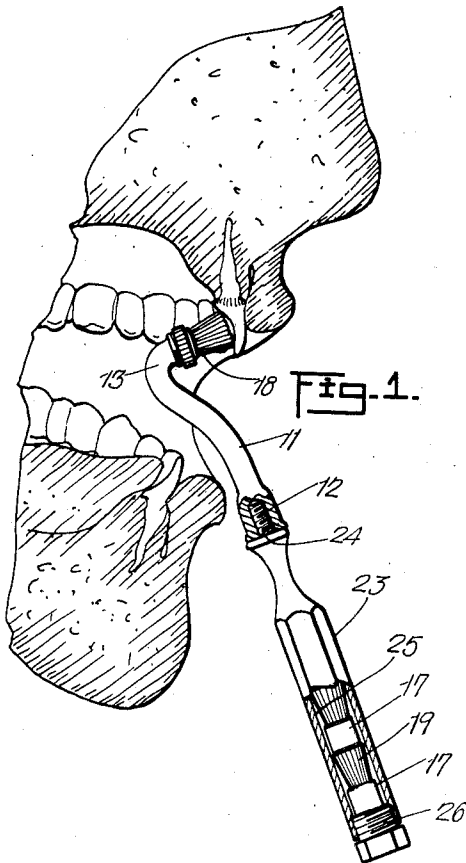
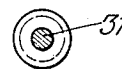
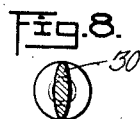
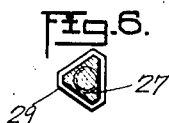


Fig. 10.



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# UNITED STATES PATENT OFFICE

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## TOOTHBRUSH

Application filed October 27, 1931. Serial No. 571,383.

This invention relates to improvements in toothbrushes.

The primary object of the invention resides in a tooth-brush by which the posterior surfaces of the teeth may be thoroughly cleaned as well as the anterior surfaces thereof whereby the teeth may be kept in a clean condition to prevent stain and decay.

Another object of the invention is to provide a tooth-brush in which the handle portion adjacent the brush head is formed with a goose neck to permit of the convenient insertion of the article into the mouth when cleaning the posterior surfaces without the handle coming in contact with the lip or inner walls of the mouth of a user.

A further object is the provision of a tooth-brush in which the bristles or brush elements are detachable from the handle to facilitate the substitution of a fresh or new bristle element for a worn one, and in which the extension handles serve as a sanitary holder for a supply of brush elements for instant use as desired.

A still further object of the invention is to provide a tooth-brush having the above mentioned features which is simple and sanitary of construction, inexpensive of manufacture, and highly efficient for the purpose intended.

With these and other objects in view, the invention resides in the certain novel construction, combination and arrangement of parts, the essential features of which are hereinafter fully described, are particularly pointed out in the appended claim, and are illustrated in the accompanying drawing, in which;

Figure 1 is a side elevational view of the preferred form of my invention with parts broken away in section and showing the same in use for cleaning the posterior surfaces of the teeth,

Figure 2 is an enlarged detail side elevational view of the head end of the tooth-brush with parts broken away in section,

Figure 3 is an enlarged detail vertical sectional view showing the manner in which the brush element is securely clamped in the socket end of the handle member,

Figure 4 is a perspective view with the parts shown in separated condition,

Figure 5 is a side elevational view of a slightly modified form,

Figure 6 is a horizontal sectional view on the line 6—6 of Figure 5,

Figure 7 is a side elevational view of a further modification,

Figure 8 is a horizontal sectional view on the line 8—8 of Figure 7,

Figure 9 is a side elevational view of a still further modified form, and

Figure 10 is a horizontal sectional view on the line 10—10 of Figure 9.

Referring to the drawing by reference characters and especially to Figures 1 to 4 inclusive, the numeral 10 designates my improved tooth-brush in its entirety which includes a curved handle section 11, one end of which is provided with an internally screw threaded socket 12, while the opposite end is formed into a goose neck or elbow 13 and terminates in an externally screw threaded head 14, the said head being provided with a socket 15, the recess of which is normally substantially uniform throughout its length the walls of which are slit or slotted as at 16. The head and socket are round in cross section and the axis of the same is substantially at right angles to the axis of the end of the handle section 11 which is formed with the threaded socket 12.

Insertable into the socket 15 is the cylindrical head 17 of a brush element 18, the said head 17 having one of the ends of bristle tufts 19 secured therein. The cylindrical head 17 of the brush element is freely insertable into the socket 15 but is clamped therein by the resilient walls of the socket formed by this slot 16.

After the brush element has been inserted into the socket 15, a clamping element or collar 20 which is internally screw threaded as at 21 is threaded on to the threaded head 14, the exterior surface of the collar being milled to facilitate the screwing of the collar upon and off of the head 14. The outer end of the collar 20 interiorly thereof is provided with an inwardly beveled face 22, which face is adapted to wedge into engagement with the

ends of the slit walls of the socket 15, when the said collar has been screwed home upon the head 14. By reference to Figure 3 of the drawing, it will be seen that as the beveled face 22 engages the end of the socket 15, the walls of the socket will be compressed or forced into clamping engagement with the cylindrical head 17 of the brush member 18. This clamping action also tends to compress the head 17 to prevent accidental dropping out of the bristles 19 during use. By unscrewing the collar 20, the wedging action between the walls of the socket and the head 17 will be released whereupon the brush element 18 may be removed when worn and a fresh one substituted therefor.

In Figure 1 of the drawing there is shown an extension handle section 23 associated with the handle section 11 and which may be in the form of the type commonly used in connection with safety razors. By utilizing such a handle, the parts previously explained may be purchased separately and a safety razor handle used in connection therewith. The handle section 23 includes a threaded stud 24 at one end thereof which threads into the socket 12 and the handle section is of a hollow or tubular construction to provide a compartment 25 which opens through the outer end thereof and which is closed by a threaded cap or plug 26. A supply of fresh brush elements 18 may be stored within the compartment 25 for use when needed.

From the foregoing description, it will be seen that I have provided a tooth-brush in which the brush element is disposed at an angle with respect to the handle which permits the insertion of the brush end into the mouth of the user for cleaning the posterior surfaces of the teeth and by forming an elbow at the head end of the brush, the same may be manipulated without causing the handle to come in contact with the lip or walls of the mouth of the user. In addition to thoroughly cleaning the posterior surfaces of the teeth, it will be appreciated that the anterior surfaces may be likewise cleaned whereby the surfaces of the teeth may be kept free of any particles which might tend to cause premature decay.

In Figure 5 of the drawing I have illustrated a slightly modified form wherein the parts are substantially identical with those shown in the preferred form with the exception that the handle section 27 is of substantially triangular shape in cross section and the head end is provided with an elbow 28 instead of a goose neck. The opposite end of the handle is formed with an enlargement 29 in which an internally screw threaded socket is formed for receiving the stud of the extension handle section.

In Figures 7 and 8, I have shown a still further modified form wherein the handle section 30 is of oval configuration in cross

section as shown in Figure 8. Otherwise the parts are the same as shown in the previous figures.

In Figure 9, I have illustrated the handle section 31 at an acute angle with respect to the bristle end of the brush and which handle section is round in cross section as best seen in Figure 10 of the drawing.

I have not specifically stated of what materials the various parts of the article may be constructed, as I may employ various metals, bakelite, or other similar compositions.

While I have shown and described what I deem to be the most desirable embodiments of my invention, I wish it to be understood that various other changes as come within the scope of the appended claim may be resorted to if desired.

Having thus described the invention, what is claimed as new and what it is desired to secure by Letters Patent of the United States, is:

A tooth-brush comprising a handle member having an externally screw threaded socket at one end thereof, the recess in said socket being normally uniform throughout its length and the walls thereof split inwardly from the free ends, a brush element including a head and bristles extending therefrom, the head of said brush element being receivable in said socket, and an internally screw threaded sleeve threadedly engaging said externally screw threaded split socket, the inner wall of said sleeve at the outer end thereof being beveled for wedging engagement with the outer end of said split socket to cause the walls of said split socket to be compressed into clamping engagement with said head when said sleeve is screwed home upon said socket portion, said sleeve being movable over the bristles during the screwing and unscrewing of the same upon the socket.

In testimony whereof I affix my signature.  
EMIL DOLL.