

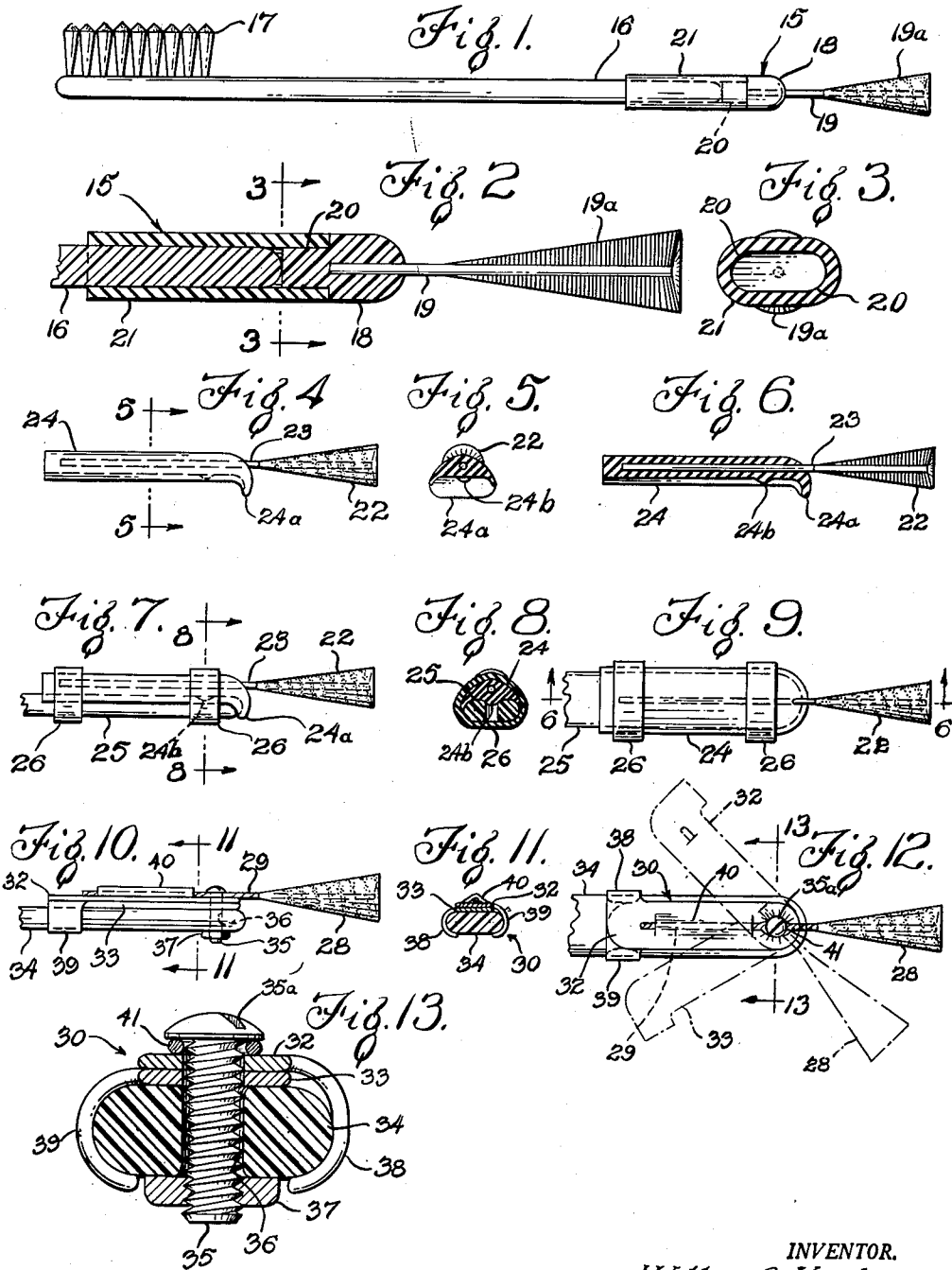
Jan. 6, 1953

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2,624,062

CLEANING ATTACHMENT FOR TOOTHBRUSHES

Filed Aug. 19, 1946



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2,624,062

CLEANING ATTACHMENT FOR TOOTHBRUSHES

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Application August 19, 1946, Serial No. 691,417

6 Claims. (Cl. 15-167)

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This invention relates to toothbrushes, and in particular relates to a cleaning device for attachment to the usual toothbrush.

In the past conventional toothbrushes usually have had a handle terminating in a flattened end from which extended bristles providing a relatively large brush body. The use of such a brush, however, has been generally unsatisfactory for proper cleaning of the teeth in spaces caused by normal separation due, for example, to the loss of a tooth or teeth. Inability properly to brush the teeth in these spaces, with the resultant omission of stimulation gained thereby, has been a most frequent cause of breaking down of healthy gum tissues, which in turn has resulted in formation of pyorrhetic pockets in the affected areas, and the decay thus formed in the neck portions of the teeth has been the primary cause of the loss of additional teeth, as for example, after the removal of a bridge or partial plate has been fitted in the mouth.

One object of the present invention is to provide a toothbrush attachment or cleaning device for use in addition to the conventional toothbrush, by which is made possible thorough cleaning in the spaces between the teeth as described, and which is adapted to stimulate the gum tissue of the affected areas and thereby materially to minimize one of the most frequent causes of tooth decay.

Another object of the invention is to provide a cleaning attachment of the character described which is adapted to be quickly releasably attached to the handle of the usual toothbrush for convenient use.

Other objects of the invention will be manifest from the following brief description and the accompanying drawings.

Of the accompanying drawings:

Figure 1 is a side elevation of the conventional toothbrush having a cleaning device embodying the features of the invention attached thereto.

Figure 2 is a fragmentary longitudinal cross-section of the improved cleaning device shown at the right of Figure 1.

Figure 3 is a cross-section taken substantially on the line 3-3 of Figure 2.

Figure 4 is a side elevation of a modified form of cleaning attachment.

Figure 5 is a cross-section taken on the line 5-5 of Figure 4.

Figure 6 is a longitudinal cross-section through the attachment of Figures 4 and 5.

Figure 7 is a view similar to Figure 4, but illustrating the device attached to a conventional toothbrush handle.

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Figure 8 is a cross-section taken substantially on the line 8-8 of Figure 7.

Figure 9 is a top plan view of Figure 7.

Figure 10 is a view similar to Figure 7, but illustrating another modified form of the invention.

Figure 11 is a cross-section taken substantially on the line 11-11 of Figure 10.

Figure 12 is a top plan view of the device shown in Figure 10.

Figure 13 is a greatly enlarged cross-section, taken substantially on the line 13-13 of Figure 12.

Referring particularly to Figures 1, 2 and 3, there is illustrated an auxiliary cleaning device 15, for attachment to the end of the flat handle 16 of a conventional toothbrush having relatively large brush body 17. The device 15 includes a supporting member 18 of relatively stiff or inflexible material in which is embedded one end portion of an elongated core 19, the other end of the core extending freely outwardly of the supporting member. Core 19 is of relatively small diameter to permit insertion thereof, for example, in the spaces between two teeth caused by loss of a tooth, and may be formed of twisted wire or other suitable material from which extends short helically or otherwise arranged bristles providing a relatively small conically shaped brush body 19a of outwardly diverging form. The other end of the supporting member 18 may be reduced in cross-section at 20 to have secured thereto, as by means of cement or other adhesive means, a tubular extension 21 of vulcanized rubber or like elastic or expansible material, this extension being adapted to be yieldingly received over the free end of brush handle 16.

The cleaning or brushing attachment 15 is adapted to be sold as a separate unit for ready attachment to a conventional brush, by expanding the tubular part 21 over the end of the handle 16 of said brush. In use, the relatively small size of the attachment brush body 19a permits the same to be freely inserted between relatively closely spaced teeth for cleaning the same and also for stimulating the gum tissues. Because of the outwardly diverging form of brush body 19a it is particularly adaptable for reaching the comparatively inaccessible back portions of the teeth, whereby the attachment brush is further effective for maintaining the gum tissues in healthy condition and consequently for preventing tooth decay caused by formation of pyorrhetic pockets and accumulation of food particles at the necks of the teeth. In the form of

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the invention illustrated in Figures 4 to 9, a brush 22, similar to brush 19a, has its core 23 securely embedded in a relatively thin, elongated body 24 of rubber or other material, shaped to conform snugly to one flat side of a conventional toothbrush handle 25, spaced bands 26, 26 of elastic or resilient material, such as rubber, being expandible over the handle to secure body 24 thereon (see Figures 7, 8 and 9). As best shown in Figures 5 and 6 the body 24 has skirt portions along opposite side edges thereof and extending outwardly of the flat underside of body 24 (see Figure 8). To aid firm attachment of the body 24 to the handle it may have an end intumed at 24a for engagement with the end portion of handle 25, and in addition an integral projection 24b may be provided on the inner face of the body 24 for non-slip reception in the usual hole provided in the end of handle 25 for hanging the toothbrush on a nail or hook. The expansible bands 26 may be either separate from the body 24 or integral therewith. The use or operation of the device described is otherwise substantially as previously described in connection with Figures 1 to 3.

Referring now to the particular embodiment of the invention of Figures 10 to 13, there is illustrated a brush body 28 formed of bristles extending from one end of an elongated core 29 as before, the other end of the core being secured to a device 30 which is releasably attachable to a conventional toothbrush handle 34, as will be described. The attaching device may comprise a pair of elongated, relatively thin plates 32 and 33, metal, plastic, or other somewhat rigid material, and these plates are adapted to be secured in superposed relation to one flat side of toothbrush handle 34, as by means of a bolt 35 received through aligned apertures at the outer ends of the plates and through the usual hole 36 provided in the outer end of the handle, and nut 37 is threaded on the bolt end projected through hole 36 for clamping the plates to the handle. The plates 32 and 33 preferably are slightly narrower than the handle 34, and each is provided adjacent its inner end with an extension 38 and 39 constituting opposite inwardly curved or hooked prongs adapted to embrace opposite side edges of handle 34. That is, when the bolt and nut are tightened the prongs will additionally retain the device 30 on the handle. The core 29 may be secured to device 30 as by reception of the inner end of the same through an elongated indentation 40 formed in the outermost plate 32, and the core may be additionally secured by provision of an integral eyelet 41 therein for reception of bolt 35, so that the eyelet will be clamped between the head 35a of the bolt and outer plate 32.

The last mentioned form of the invention is readily applicable to the handles 34 of conventional toothbrushes of a wide range of sizes and shapes, the device 30 being attached substantially in the manner best illustrated in chain-dotted and full lines in Figure 12. The use of the brush 28 of the device 30 is otherwise as previously described.

Modifications of the invention may be resorted to without departing from the spirit thereof or the scope of the appended claims.

What is claimed is:

1. A tooth cleaning device of the character described, comprising a relatively rigid supporting member of substantial length and having the

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greater portion of one face of substantially flat broad lateral area for fitting flatly against a corresponding flat face of the handle of the usual toothbrush, an elongated core secured to one end of said member to extend freely therefrom and having bristles extending radially therefrom to provide a brush body adapted to be received in the space between two teeth caused by loss of a tooth, said member having an off-set portion at said one end thereof to provide a shoulder engageable with the free end of a toothbrush handle resting against said flat face of the member, and spaced bands of elastic material yieldingly expanded over said member for releasably attaching the member to the toothbrush handle.

2. A tooth cleaning device as set forth in claim 1, said member having skirt portions extending outwardly of said flat face portion along opposite side edges of the member.

3. A tooth cleaning device as set forth in claim 2, said member having an integral projection on said flat face thereof adjacent said one end for non-slip reception in the usual hole provided in the toothbrush handle.

4. A tooth cleaning device as set forth in claim 1, said member having skirt portions extending outwardly of said flat face portion along opposite side edges of the member, said member having an integral projection on said flat side thereof adjacent said one end for non-slip reception in the usual hole provided in the toothbrush handle.

5. A tooth cleaning device of the character described, comprising a relatively rigid supporting member of substantial length and having one face of broad lateral area outwardly unobstructed in the direction normal to said face for fitting snugly against a correspondingly shaped face of the handle of the usual toothbrush, an elongated core secured to one end of said member to extend freely therefrom and having bristles extending radially therefrom to provide a brush body adapted to be received in the space between two teeth caused by loss of a tooth, said member having an off-set portion at said one end thereof to provide a shoulder engageable with the free end of a toothbrush handle resting against said unobstructed face of the member, and spaced bands of elastic material yieldingly expanded over said member for releasably attaching the member to the toothbrush handle.

6. A tooth cleaning device as set forth in claim 5, said member having skirt portions extending outwardly of said one face along opposite side edges of the member.

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