March 5, 1935. H. A. GREEN 1,993,662

ATTACHMENT FOR TOOTHBRUSHES

Filed Sept. 18, 1931

Fig. 1.

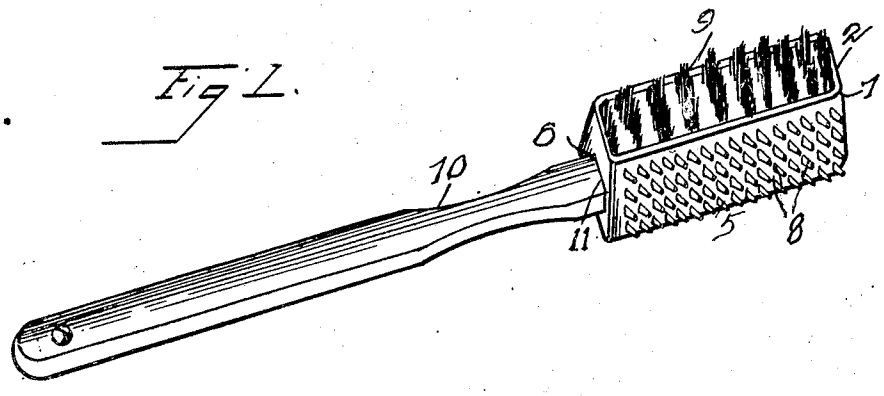



Fig 2.

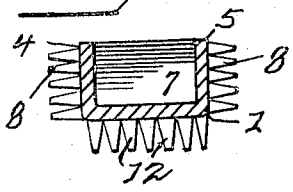



Fig 3.

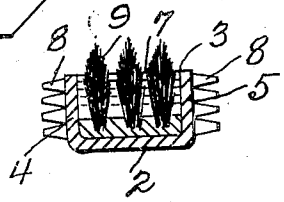



Fig 4.

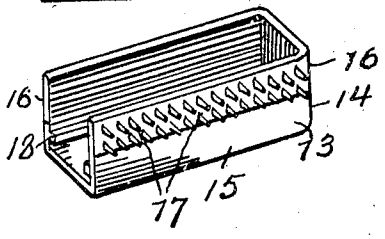
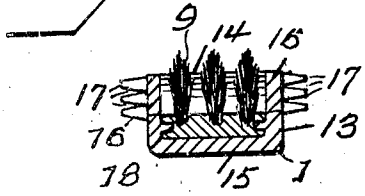



Fig 5.




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# UNITED STATES PATENT OFFICE

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## ATTACHMENT FOR TOOTHBRUSHES

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Application September 18, 1931, Serial No. 563,613

2 Claims. (Cl. 15—110)

This invention is directed to an improvement in toothbrushes, and is more particularly concerned with an attachment for conventional toothbrushes, through the use of which the toothbrush may be conveniently used as a means for massaging the gums, while allowing the full and free use of the toothbrush with the modern approved technique.

Modern dental science condemns the heretofore practiced and conventional method of cleaning the teeth, consisting of a mesiodistal stroke passing at right angles to the long axis of the teeth, for this method not only fails to clean the entire buccal and lingual surfaces, but tends to injury of the marginal and cemental gingiva. The modern method is the use of the toothbrush longitudinally of the teeth, that is, by an up and down or vibratory movement, and in providing for use in connection with the conventional toothbrush a means for massaging and stimulating the blood circulation of the gums, it is important that the massaging implement be particularly arranged to provide for this modern use of the toothbrush proper.

The primary object of the present invention, therefore, is the provision of a massaging device which may be removably connected to a toothbrush and which, when in place, will provide at the proper point or points certain massaging elements so located with respect to the bristles of the toothbrush as to permit the proper and modern use of the toothbrush, while facilitating the easy and conventional proper use of the massaging device.

More specifically considered, the attachment comprises a flexible section to be removably connected to the brush end of the toothbrush, with such section having side portions substantially parallel with and bearing upon the bristles of the brush, with the side portions, provided with massaging projections extending at approximately right angles to the bristles of the brush, and the attachment being open to permit sufficient projection of the ends of the brush bristles beyond the attachment for the proper use of such bristles in the tooth cleaning operation.

The invention is illustrated in the accompanying drawing, wherein:—

Figure 1 is a perspective view showing the preferred form of attachment applied to a toothbrush.

Figure 2 is a transverse section of an attachment provided with bottom projections.

Figure 3 is a transverse section through the attachment and brush of the preferred form.

Figure 4 is a perspective view of the attachment in a modified form.

Figure 5 is a transverse section of same.

The attachment as a whole is, in the preferred form, made up as a shell 1, preferably of thin flexible rubber, closed at the bottom 2 and open at the top 3, such shell presenting spaced side walls 4 and 5, a forward end wall 7, and a rear end wall 6. The exterior of the side walls 4 and 5, and as preferred of the forward end wall 6, is provided with massaging projections, here shown as relatively small, solid projections 8 integral with the shell, that is, of more or less soft rubber or other flexible material, and extending at approximately right or suitable angles to the wall with which they are connected. These massaging projections may be of any conventional or desired form, the sole requisite being that such projections, and more particularly those extending from the side walls 4 and 5, project in a plane at right angles to the surface of said walls.

The attachment is designed for connection with an ordinary toothbrush having bristles, 9 and a handle 10, and for this purpose the rear end wall 6 is formed near the bottom 2 with an opening 11 of a size to snugly receive the handle of the brush. The attachment is applied by forcing the free end of the handle through the opening and continuing the movement until the shell may be passed up at the forward end of the bristles, in which position the forward wall 7 of the attachment is substantially parallel to and bears against the forward end of the bristles, while the side walls 4 and 5 are substantially parallel to and bear on the bristles. In this position, the bottom 2 of the attachment rests squarely against the bottom of the handle portion below the bristles, and the vertical dimension of the side walls is such that the upper open end or top 3 of the attachment, or more particularly the free edges of the side and end walls, terminate at or below the free ends of the bristles 9.

When thus arranged, the attachment provides flexible walls carrying massaging projections at each side of the bristles, with such massaging projections extending at right angles to the bristles and the walls bearing upon the bristles of the brush. If desired, the massaging projections may also extend from the bottom 2 of the attachment as well as from the side walls, such construction being shown in Figure 2, wherein the bottom 2 of the shell is provided with massaging projections 12.

Furthermore, the shell need not necessarily be

integral or provided with the rear wall 6, as such attachment may be fashioned as shown in Figure 4, wherein the lower portions of the side walls, here indicated at 13, as well as the corresponding portion of the front wall, here indicated at 14, and also the bottom, here indicated at 15, may be of more rigid material, with the upper portions of the side walls and end wall, here indicated at 16, of flexible rubber, with the massaging projections 17 provided on this flexible portion and extending at right angles to the surface of the walls from which they project.

Obviously, in this form the flexible upper sections of the walls may be connected in any desired manner to the inflexible lower section, or the attachment may be constructed integrally with the lower section of hard rubber and the upper sections of the walls of soft, flexible rubber. In this form, the end wall 6 is omitted and the toothbrush handle throughout the bristle area and the rigid section of the attachment may be formed with cooperating projections and channels, indicated at 18, for slidably connecting the attachment and toothbrush. Of course, any cooperation between the attachment and toothbrush must be such as to frictionally hold the attachment in place against casual displacement during the massaging use of the attachment.

The primary object sought by the various forms is the provision of an attachment for toothbrushes which exposes an operative brush area and which provides at right angles to such brush area a series of massaging devices, cushioned in use on the bristles. In the use of this combination of massaging attachment and brush proper under the modern method of cleaning the teeth, the brush is arranged in the mouth alongside of the gum, with the brush bristles pointing upward for massaging the upper gums or downward for massaging the lower gums. In this position, the massaging attachment at either side of the brush will rest against the gums, the gums are then alternately compressed and released by inward and outward movement of the rubber projections, a vibratory motion is then established without moving the rubber projections from contact with the gums by circular movement of the brush head, or the gums may be brushed, producing massaging action, and following an appropriate massaging action, the brush by a quarter turn is arranged so that the bristle portion of the brush is against the crowns of the teeth. The vibratory motion is then repeated, with the toothbrush bristles against the teeth. The opposite side of the teeth and gums are then treated in a similar way, and following a movement of the brush bristles across the biting surfaces of the teeth, the cleaning operation is concluded.

It is to be noted that the massaging projections cover a relatively large gum area, and incidental to the flexibility of these massaging projections, the gums dipping inwardly at the embrasures would be directly acted on and stimulated.

It is to be particularly noted that the walls having the projections or nipples terminate short of the free ends of the bristles to expose a portion of the sides of the bristles, as well as the free ends of such bristles. This is important in connection with the use of the brush with the attachment, as will now be made clear.

The accepted method of cleaning or brushing the teeth is agreed upon by a number of authorities, such for example as Clinical Periodontia by Stillman and McCall, published in 1927, in which the accepted method and reasons therefor are set forth on pages 220 to 225 and particularly pages 222 and 224. The present brush attachment is designed to carry out that method, the particular correlation of the parts materially assisting the user in practicing the method. In actual practice the improved brush and attachment are inserted in the mouth between the cheek and outer gum surface, with the bristles pointed downwardly if the lower teeth are to be cleaned, and pointed upwardly if the upper teeth are to be cleaned. In this position the nipples are against the gums and the latter may be massaged by movement of the brush head, as previously described. On completion of the massage, the brush head is given a quarter turn toward the teeth. In this movement the exposed sides of the bristles beyond the flexible walls carrying the nipples are wiped across the gums and teeth for a massage of the gums at the necks of the teeth, and in the continued movement the free ends of the bristles are moved over and between the teeth. This operation is of course repeated until a proper cleaning is had, it being apparent that from the cooperative relation of the parts of the attachment and brush head, the proper application of the brush head and nipples to permit the massaging operation, positions the brush bristles to carry out the accepted method of cleaning by a mere quarter turn of the brush handle. Furthermore, the exposure of the sides of the bristles and their free ends permits effective cleaning according to the accepted method, without interference from the massaging nipples.

I claim:—

1. A toothbrush having a head and bristles extending therefrom, flexible walls carried by the head and extending parallel to and adjacent the bristles and resiliently supported thereby, independent flexible nipples carried by and extending from the walls in a direction away from and substantially transverse the bristles, the walls and nipples being sufficiently below the free ends of the bristles to fully expose such free ends and a portion of the sides of the bristles below such ends, whereby following massage action by the nipples, the brush may be given a quarter turn to first bring the exposed sides of the bristles in wiping action against the gums and teeth and then wipe the ends of the bristles over and between the teeth for cleaning.

2. A massage attachment for toothbrushes including a flexible and contractible shell stretched over the brush head and having walls extending parallel to and adjacent the bristles of the brush, the edges of the walls terminating short of the free ends of the bristles to expose a portion of the sides and the ends of the bristles, the walls of the attachment overlying the sides of the bristles being formed with a plurality of wholly independent flexible nipples extending in a direction away from and substantially transverse to the bristles of the brush, whereby following massage action by the nipples, the brush may be given a quarter turn to bring the exposed sides of the bristles in wiping action against the gums and teeth followed by the wiping of the ends of the bristles over and between the teeth.

HARRY A. GREEN. [L. S.]