Feb. 6, 1934. R. M. HOFFMAN ET AL 1,946,283

TOOTHBRUSH

Filed Nov. 17, 1932

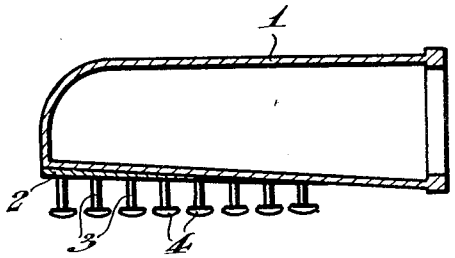

Fig. 1

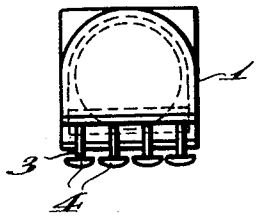

Fig. 2

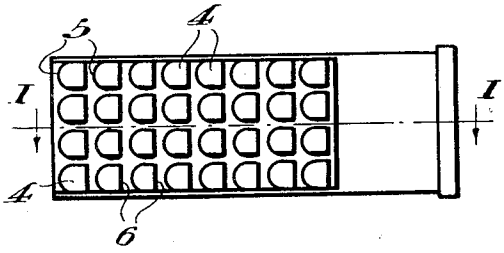

Fig. 3

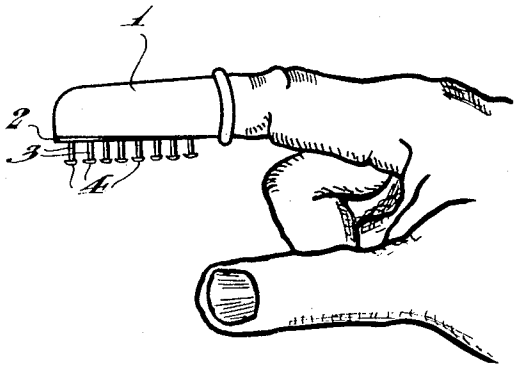

Fig. 4

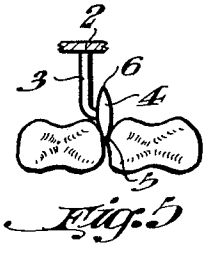

Fig. 5

Witnesses.
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UNITED STATES PATENT OFFICE

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TOOTHBRUSH

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Serial No. 643,036

7 Claims. (Cl. 15—188)

Our invention relates to toothbrushes and particularly to the type adapted to be mounted on the finger of the user.

An object of our invention is to provide a toothbrush of such construction that it is peculiarly adapted to enter the interproximal spaces of the teeth whereby the adjacent surfaces of the teeth are effectually cleaned and polished.

A further object of our invention is to provide a toothbrush of such form and construction that it is adapted for massaging the gums as well as for cleaning and polishing the teeth.

Toothbrushes of the same general character as that of our invention have been provided heretofore but they have in general been defective in that they are not adapted to enter the interproximal spaces of the teeth, and are therefore ineffective to remove particles of food, lactic acid or other substances adapted to cause decay of the teeth at the points at which such decay is likely to occur. Toothbrushes of the type that have been provided are in general adapted for the outer and easily accessible surfaces of the teeth and are not adapted to enter the relatively narrow spaces between the teeth and particularly the contact points at which decay is most likely to occur.

It will be appreciated that as the ordinary toothbrush passes along the row of teeth the bristles divide or separate over the spaces between the teeth and have no tendency to enter therein. We are aware that it has been proposed heretofore to provide toothbrushes having rubber bristles, but these have been of such large cross-sections and of such flexible nature that it is not possible for them to clean the teeth at the points at which such action is most important.

In accordance with our present invention we provide a toothbrush adapted to be mounted upon the finger of the user and which is provided with rubber bristles having at the outer ends thereof members of such construction that they are peculiarly adapted to enter the crevices between the teeth and particularly the interproximal spaces. The rubber bristles of our improved toothbrush have at the outer ends thereof and transverse thereto a thin disc-like member that has been vulcanized to such degree as to be sufficiently rigid to enter the spaces between the teeth when the brush is rotated relatively to the teeth.

The details of our invention will be described in connection with the accompanying drawing in which Fig. 1 is a view in central longitudinal section on line I—I of Fig. 3; Fig. 2 is a view in front elevation; Fig. 3 is a plan view of the brush of Fig. 1; Fig. 4 is a perspective view of the brush in position upon a person's finger; Fig. 5 is an enlarged detailed view of one of the bristles in a flexed position.

Referring to the drawing a toothbrush constructed in accordance with our invention comprises a hollow case 1 of rubber that is sufficiently flexible that it is adapted to fit fingers of various sizes. Case 1 is provided upon its lower side, as viewed in Fig. 1, with a base 2 also of rubber that supports a series of rubber bristles 3 extending transversely therefrom.

Each of these bristles which is of relatively soft rubber has connected thereto at its outer end a relatively thin disc-like member 4 of rubber that has been vulcanized to a greater degree than the bristles 3 whereby the material of the discs 4 is slightly more rigid than that of the bristles 3. Each disc 4 has a slightly tapered curved edge 5 upon the front and sides thereof while the tapered back edge 6 is substantially straight.

The brush is adapted to be mounted upon the finger of the user substantially in the manner shown in Fig. 4. The supporting means for the bristles is sufficiently flexible that the finger may be curved to adapt the brush to the outer contour of the teeth in order that the major portion of the brush may be in contact with the teeth at any given time.

When the brush is pressed towards the teeth and rotated back and forth by the finger the edges of the discs 4 and particularly the curved edges 5 enter the interproximal spaces and penetrate to such depth that they effectually remove any deposits of foreign substances therefrom and at the same time polish the teeth by reason of their relative movement. This operation may be continued until the brush has operated to cleanse and polish the surfaces of the teeth effectually in these spaces which have hitherto been substantially inaccessive to toothbrushes.

The toothbrush of our invention may be readily cleansed since the bristles and the members at the outer ends thereof are accessible to the cleansing action of water and particularly if the bristles be bent somewhat in order that water may reach the apex of each of the discs 4.

The bristles and their associated parts are sufficiently flexible that the brush may be used to massage the gums and thus relieve disorders of the latter such, for example, as gingivitis, Vincents angina, and the like.

The advantages of the toothbrush of our invention are that it is of such construction that it will operate to effectually cleanse the surfaces of the teeth in the interproximal spaces and will polish the surfaces in these spaces which have hitherto been practically inaccessible to the bristles of toothbrushes. The brush may be used as a massaging implement for treating various disorders of the gums. The brush is extremely sanitary in operation because of the ease with which it may be thoroughly cleaned.

The foregoing and other advantages will be apparent to those skilled in the art of the care and preservation of the teeth.

We claim:

1. A toothbrush comprising a plurality of bristles each having at its outer end thereof a disc-like member in a plane at right angles to the bristle and having a relatively thin flat portion adapted to enter spaces between closely adjacent teeth.

2. A toothbrush comprising a plurality of bristles each having at its outer end thereof and in a plane at right angles thereto a thin flat member adapted to enter relatively narrow spaces between adjacent teeth.

3. A toothbrush comprising a base, a plurality of flexible rubber bristles on said base, said bristles being provided with disc-like members having relatively thin flat portions of such degree of hardness greater than that of said bristles as to cause them to enter narrow spaces between teeth.

4. A toothbrush comprising a base, a plurality of flexible rubber bristles on said base, said bristles being provided with relatively thin flat members, the plane of which is transverse thereto and being of lesser flexibility than said bristles whereby they are adapted, upon the flexing of said bristles, to be actuated into spaces between adjacent teeth.

5. A toothbrush comprising a base, a plurality of rubber bristles supported thereon, each of said bristles having at its outer end and extending transverse thereto a disc-like member of rubber and with relatively thin edges, said members being vulcanized to a greater degree than said bristles whereby they are flexibly mounted to adapt them to conform to the contour of the teeth and are sufficiently rigid to enter the spaces therebetween.

6. A toothbrush comprising a plurality of bristles each having at its outer end thereof and in a plane substantially at right angles thereto a relatively thin flat portion adapted, when the bristle is bent, to enter spaces between closely adjacent teeth, and a support for said bristles adapted to be secured to the finger of the user.

7. A toothbrush comprising a plurality of flexible bristles each having at its outer end thereof and in a plane transverse thereto a thin flat member adapted, when the bristle is flexed, to enter relatively narrow spaces between adjacent teeth, and means comprising a case for a finger for supporting said bristles.

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