Dec. 23, 1952

F. E. CHAUVIN

2,622,259

TOOTHBRUSH HAVING SEPARATE ROWS OF LONG BRISTLES AND SHORT BRISTLES

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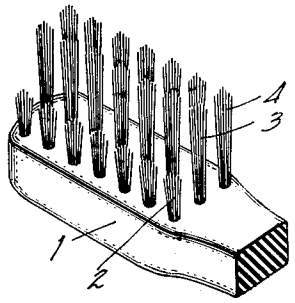


FIG. 1

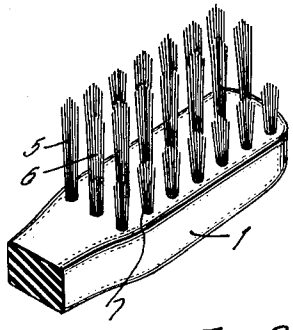


FIG. 2

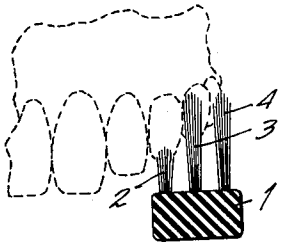


FIG. 3

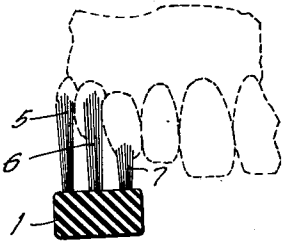


FIG. 4

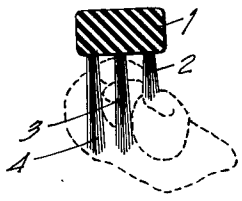


FIG. 5

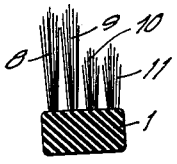


FIG. 10

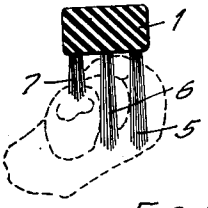


FIG. 6

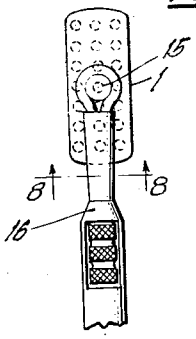


FIG. 7

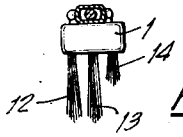


FIG. 8

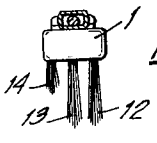


FIG. 9

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TOOTHBRUSH HAVING SEPARATE ROWS OF LONG BRISTLES AND SHORT BRISTLES

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Application July 11, 1947, Serial No. 760,200

7 Claims. (Cl. 15—167)

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Toothbrushes of the present type are not well adapted for properly cleaning the human teeth. Such brushes are, in the majority of cases, applied to the teeth either with a more or less circular scrubbing motion or else the brush is moved back and forth along the tops and sides of the teeth.

In order properly to clean the teeth and thoroughly to remove particles of food from between the teeth, the sides of the teeth should be cleaned with a sweeping motion from the gums towards the grinding or biting surfaces while the grinding surfaces should be cleaned with transverse sweeping movements of the brush. When used in this manner, the bristles not only sweep and clean all the surfaces of the teeth but also remove particles of food from between them.

The principal object of my invention is to provide an improved type of toothbrush whereby all the surfaces of the teeth, namely the grinding surfaces, the sides, areas between the sides, and particularly the surfaces between the teeth may be properly and substantially simultaneously cleaned by sweeping movements of the brush as described above.

I accomplish this object by means of the brush described below and illustrated in the accompanying drawing in which—

Fig. 1 is a fragmentary perspective view of my brush;

Fig. 2 is a fragmentary perspective view of a brush similar to that shown in Fig. 1 but in which a short row of bristles is on the opposite side of the brush from that shown in Fig. 1;

Fig. 3 is a transverse section of the brush shown in Fig. 1 illustrating how it may be used to clean the grinding, the outer side surfaces, and the surfaces between the upper teeth on the left side of the mouth;

Fig. 4 is a transverse section of the brush shown in Fig. 2 illustrating how it may be used to clean the grinding, the outer side surfaces, and the surfaces between the upper teeth on the right side of the mouth;

Fig. 5 is an inverted, transverse section of the brush shown in Fig. 1 illustrating how it may be used to clean the grinding, the outer side surfaces, and the surfaces between the lower teeth on the right side of the mouth;

Fig. 6 is an inverted, transverse section of the brush shown in Fig. 2 illustrating how it may be used to clean the grinding, the outer side surfaces, and the surfaces between the lower teeth on the left side of the mouth;

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Fig. 7 is a fragmentary back view of a brush in which the bristled portion of the brush is pivotally secured to a handle;

Fig. 8 is a section of Fig. 7 in the plane 8—8 showing the brush turned in one position;

Fig. 9 is a section similar to Fig. 8 showing the brush turned 180° about its pivotal connection to the handle; and

Fig. 10 is a cross section of a modified type of brush.

Referring to the drawings—

1 represents the bristle-holding portion of the toothbrush. As illustrated in Fig. 1, there are three longitudinally-extending rows of bristle tufts 2, 3 and 4, of which the rows 3 and 4 are of the same height and the row 2 is approximately half the height of the tufts in the other two rows.

The brush shown in Fig. 2 is identical with the brush shown in Fig. 1 except that the row of shorter bristle tufts is on the right hand side rather than on the left hand side. As illustrated in Fig. 2, the brush has three longitudinally-extending rows of bristle tufts 5, 6 and 7 set therein, of which the tufts in row 7 are approximately half the height of the tufts in rows 5 and 6. In each case, however, it will be noted that the free ends of the bristle tufts are tapered so that the longer bristles are in the center of the tufts. The tapering of the tufts is essential in order properly to remove particles of food from between the teeth.

The brush shown in Fig. 1 may be used to clean the following tooth surfaces:

The grinding, the outer side surfaces, and the surfaces between the upper teeth on the left hand side of the mouth, as shown in Fig. 3; the grinding, the inner side surfaces, and the surfaces between the lower teeth on the left hand side of the mouth; the grinding, the inner side surfaces, and the surfaces between the upper teeth on the right hand side of the mouth; and the grinding, the outer side surfaces, and the surfaces between the lower teeth on the right hand side of the mouth, as shown in Fig. 5.

The brush shown in Fig. 2 may be used to clean all of the remaining surfaces of the teeth. Thus, while the brush shown in Fig. 1 may be used to clean the grinding and inner side surfaces of the upper teeth on the left hand side of the mouth, the brush shown in Fig. 2 may be used to clean the grinding surfaces and the outer side surfaces of these teeth, as shown in Fig. 4; and also the grinding surfaces and the outer side surfaces of the lower teeth on the

left hand side of the mouth, as shown in Fig 6.

In Fig. 10, I have shown the cross section of a brush similar to that shown in Fig. 2 except that it has four rows 8, 9, 10 and 11 of the bristle tufts in which two of the rows, 10 and 11, are approximately one-half the height of the tufts in the rows 8 and 9 of the other side of the brush. Although I have shown but one section of a brush having four rows of bristles, it is to be understood that the short tufts may be on either side of the brush.

With brushes of the type shown in Figs. 1 to 6, inclusive, and Fig. 10, two separate brushes are necessary in order properly to clean the teeth and it is intended that such brushes will be sold in pairs. However, since each of the brushes in a pair is used only for cleaning one-half of the tooth surfaces cleaned with the ordinary brush, the wear thereon is only one-half of the wear on the ordinary brush and the expense is, therefore, no greater since each of my brushes will last twice as long as the ordinary brush.

In Figs. 7, 8 and 9, I have shown a brush in which the bristled portion is provided with three longitudinally-extending rows of bristle tufts 12, 13 and 14, of which the tufts in row 14 are approximately half the height of the tufts in rows 12 and 13. Here, the bristled portion 1 is separate from the handle 16 but is pivotally attached thereto at 15, so that it may be turned 180° from the position shown in Fig. 7, thus making it possible to position the short row of bristles on either side of the brush so that only one brush is necessary to clean all the teeth.

In order properly to clean all surfaces of the teeth including the areas between the teeth, at least two rows of long bristles are absolutely necessary and either one or two short rows on the outside of these brushes approximately half the height of the other two long rows are also necessary.

From the foregoing it will be apparent that my brush is especially designed for brushing the teeth by a transverse rotating or sweeping movement thereof across the rows of teeth rather than by the scrubbing, circular movements commonly used with brushes of the present types. This is the so-called Charter method of cleaning teeth which is recommended by the New York State Dental Association and the American Dental Association. By using my brush, a person quickly acquires the proper technique of cleaning the teeth by this method.

The short row of bristle tufts of my brush performs three definite functions in the proper cleaning of teeth:

1. It allows closer application of the brush to the sides of the teeth from the gum to the biting edge, or throughout the length or height of the tooth structure to be cleaned.

2. The row of short bristle tufts, which are preferably approximately one-half the height of the longer tufts, automatically effects the application above mentioned. The shorter tufts act as a shoulder lever or fulcrum to make possible the rotation or sweeping of the brush from the gums upwardly when used on the teeth of the lower jaw and from the gums downwardly when used on the teeth of the upper jaw.

3. The row of short bristle tufts also makes possible a sweeping pressure against the teeth which cannot be attained with the conventional brushes having three or four rows of bristle tufts of equal height.

The term "toothbrush" as used in the claims is intended definitely to limit the scope thereof to brushes of the type suitable for use in cleaning the teeth.

What I claim is—

1. A toothbrush comprising a handle; a single bristled portion only thereon having the bristles disposed in a plurality of laterally-spaced, longitudinally-extending, parallel rows of tufts perpendicularly set therein; the tufts forming the two outermost rows on one side of said bristled portion being of uniform length, and the remaining tufts of bristles in said bristled portion also being of uniform length but substantially shorter than the tufts forming said two outermost rows; whereby the sides of the teeth may be cleaned and particles of food removed from between the teeth by initially positioning said shorter bristles against the grinding surfaces of the teeth with the longer bristles lying along the sides of the teeth, and thereafter sweeping the sides of said teeth from the gums towards the grinding edges with said longer bristles.

2. The structure set forth in claim 1 in which the free ends of the bristle tufts in said two outermost rows are tapered.

3. The structure set forth in claim 1 in which the shorter bristle tufts are about one-half the lenth of the longer bristle tufts.

4. The structure set forth in claim 1 in which the free ends of the bristle tufts in said two outermost rows are tapered and the shorter bristle tufts are about one-half the length of the longer bristle tufts.

5. The structure set forth in claim 1 in which said remaining tufts of bristles are disposed in a single row.

6. The structure set forth in claim 1 in which said remaining tufts of bristles are disposed in two rows.

7. The structure set forth in claim 1 wherein there are means pivotally connecting said bristled portion to said handle; the axis of said pivotal connecting means being substantially normal to the axis of said handle and parallel to said tufts of bristles; whereby said bristled portion may be turned end for end to position said two outermost rows of bristles on either side of said brush.

FRANCIS E. CHAUVIN.

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