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G. E. HADDEN

2,161,349

TOOTH BRUSH

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Fig. 1.

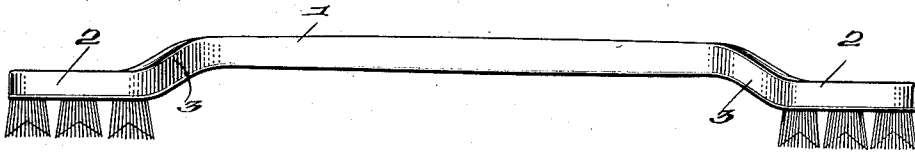


Fig. 2.

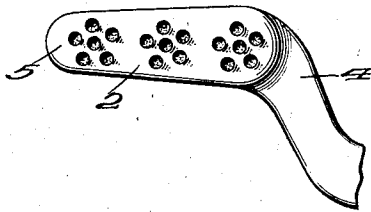


Fig. 3.

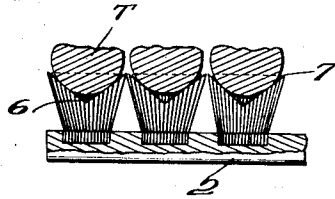


Fig. 4.

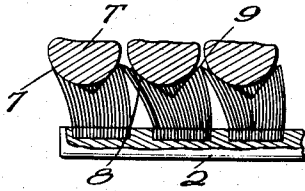


Fig. 5.

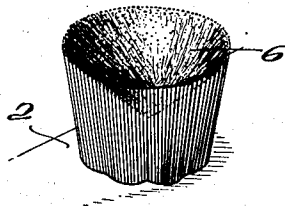
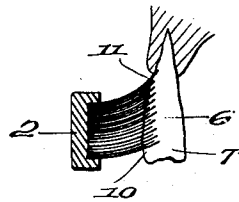


Fig. 6.

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TOOTH BRUSH

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2 Claims. (Cl. 15—167)

This invention relates to brushes particularly designed for cleaning the teeth and the object of the invention is to provide a brush in which the bristles are so arranged that the teeth of the user will be effectively cleaned when the scrubbing action takes place in any direction whatsoever.

Another object of the invention is to provide a brush for cleaning the teeth wherein the bristles are so arranged that the interproximal spaces and the gum margins of the teeth will be effectively cleaned.

Another object of the invention is to provide a tooth brush wherein the entire surfaces of the teeth including the inner surfaces as well as the outer surfaces will be effectively cleaned by its use.

It is a well known fact that the tooth brushes in common use have a tendency to push the food between the teeth instead of removing it, thus causing decay and the formation of pyorrhea pockets. Therefore, it is the purpose of my invention to eliminate the defects of former tooth brushes and to accomplish the afore-mentioned objects by means of the construction shown in the accompanying drawing, in which:

Figure 1 is a perspective of a tooth brush embodying my invention;

Figure 2 is a bottom plan of a brush head embodying my invention;

Figure 3 is a vertical section of a brush head embodying my invention showing the same in use when a slight pressure has been applied thereto;

Figure 4 is a vertical section illustrating the position of the bristles when a sweeping backward and forward motion has been applied to the brush;

Figure 5 is a section illustrating the position of the bristles when an up and down motion has been applied to the brush; and

Figure 6 is a perspective of a group of bristle tufts embodying my invention secured in a single socket.

On the drawing, in which like reference characters indicate like parts on the views thereof, 1 indicates the brush handle herein shown as provided with two brush heads 2 which are laterally offset and also curved outwardly away from the handle, as is shown at 3 and 4, Figures 1 and 2, for a purpose which will later appear.

In Figure 2, I have shown the brush head as provided with three groups of bristle tufts 5, shown therein as consisting of six tufts each secured in separate sockets. It is to be understood that a single group of tufts would be sufficient for a

small brush, or a greater number than three groups might be employed if desired. Likewise, the number of tufts constituting a group might be greater or less than six without departing from the spirit of my invention.

As is shown in the drawing, the free outer face of a tuft group is so formed that it provides a cavity 6 which is substantially the form of an inverted cone with the periphery of the cone base consisting of a thin line of bristles 7, which in use enter the interproximal spaces and remove any food particles which may have lodged there.

In Figure 3, I have shown the position of the bristles when applied to the teeth, the teeth T being illustrated diagrammatically, and a slight pressure exerted; it will be seen that the cavity in the bristle tuft group is of such form that the bristles will bear against substantially the entire outer surface of the teeth with the peripheral edge of the tuft group entering the interproximal spaces, thereby forcing out any particles which may have lodged there. When a circular motion is applied to the brush, it is apparent that a thorough cleaning, not only of the outer surface of the teeth, but of the spaces between adjacent teeth will take place.

In cleaning the outer surfaces of the teeth on the right hand side of the upper jaw, the brush is held in such position that the head extends upwardly and inwardly toward the oral cavity, the inclination of the brush head relatively to the handle aiding materially in holding the bristles in close engagement with the surface of the teeth.

While I have shown the bristles as applied to the outer surfaces of the teeth, it is apparent that a thorough cleaning of the inner surfaces of the teeth will take place when the brush is applied thereto.

The various positions in which the brush can be held and the inclination of the brush head to the handle facilitate its use, as is readily apparent, and the effectiveness of the the cleaning action is partly due to the fact that it may be readily positioned to reach the teeth which are not readily accessible for cleaning by the ordinary type of brush now in common use. The fact that the brush heads are offset from the handle is of advantage since, when in use, the handle will tend to hold the cheek away from the teeth and thus facilitate cleaning.

In Figure 4 I have shown the action of the bristles when the brush head is given the ordinary back and forth sweeping motion for cleaning the teeth. It will be seen that during such a motion the parts 9 of the bristles are forced into the in-

terproximal spaces on one side of the tooth and push out any food or particles that are lodged there, while another portion 8 of the bristles sweeps out the interproximal space on the other side of the tooth. When the direction of motion of the brush is reversed, the portion which did the pushing action will then do the sweeping action and the portion which did the sweeping action will do the pushing action.

10 In Figure 5, I have shown the position of the bristles when an up and down action is applied to the brush head. When moving downward to clean the teeth of the upper jaw, the part marked 10 will be pushed back and spread while the part 11 effects a sweeping action, thus cleaning the gum margins. When the direction of motion is reversed, that is when an upward motion is applied to the brush head to clean the teeth in the lower jaw, the action of the bristles parts 10 and 11 will be reversed but the cleaning result will be the same.

25 Since the three motions of the brush employed by persons in brushing their teeth are the circular motion, the backward and forward motion and the upward and downward motion, it is apparent that my brush is so constructed that, under all conditions of use, the teeth will be effectively cleaned and all debris removed from the interproximal spaces and from the gingival or free marginal spaces of the gum.

30 It is to be noted that while in Figure 2 the bristle tufts are shown as secured in separate sockets, in Figure 6 and sectional views they are all shown as secured in a single socket, it being understood that the same result is obtained in both cases.

It is likewise to be understood that while I

have illustrated a brush having two brush heads, my invention is equally applicable to a brush employing only one brush head.

I am aware that brushes have previously been designed wherein the center of the bristle tuft is shorter than the outer edges but these bristle tufts were not of such form as to provide a cavity into which the inner or outer surface of the tooth will rest with a thin peripheral line of bristles acting to clean the interproximal spaces and the gum margins of the teeth.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. An implement for cleaning the tooth of a human being comprising a brush head having a group of bristles secured thereto, the free end of said bristle group being recessed to form a cone shaped cavity the wall of which is substantially continuous and of substantially the size and shape of one face of a single tooth, the periphery of the base of the cone being constituted by a thin line of bristles to engage the base of the tooth and to extend into the adjacent interproximal spaces.

2. An implement for cleaning the teeth of a human being comprising a brush head having a plurality of separated groups of bristle tufts secured thereto, each of said groups of tufts having its unsecured end recessed to form a cone shaped cavity of a size and shape to conform substantially to and engage one entire face only of a tooth to be cleaned, the periphery of the base of the cone being constituted by a thin line of bristles to engage the base of the tooth and to extend into adjacent interproximal spaces.

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