Oct. 5, 1954 R. G. BACKSTROM 2,690,579

TOOTHBRUSH

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Fig. 1.

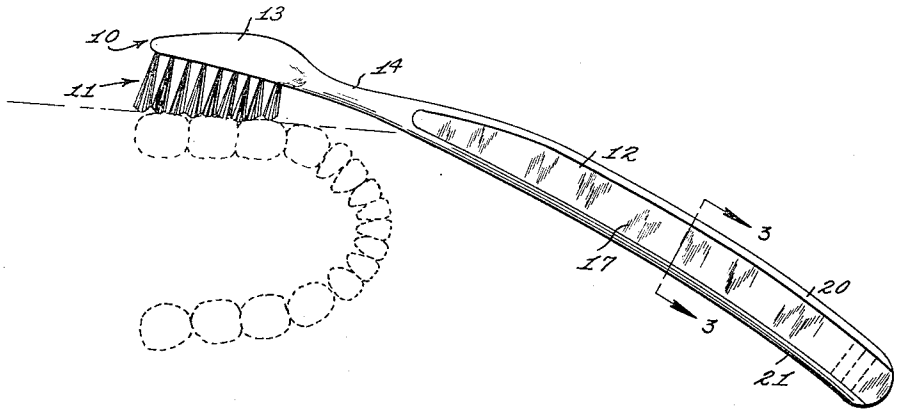


Fig. 2.

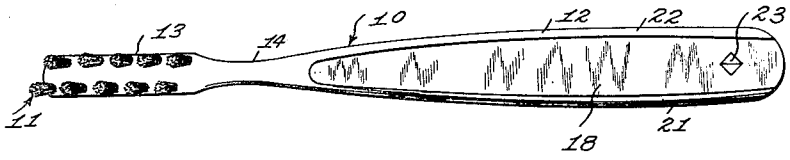
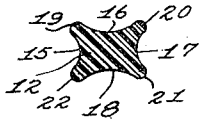


Fig. 3.



INVENTOR.
ROBERT G. BACKSTROM
BY

McMorrow, Berman & Davidson
ATTORNEYS

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TOOTHBRUSH

Robert G. Backstrom, Palm Springs, Calif.

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1 Claim. (Cl. 15—167)

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This invention relates to toothbrushes and more particularly to a toothbrush especially shaped to fit the human dental arch.

It is among the objects of the invention to provide an improved toothbrush especially shaped to fit the human dental arch and apply its bristles to all accessible surfaces of the teeth constituting such an arch; which includes a handle of a size and shape to provide a firm and comfortable grip for a person using the brush; which includes bristle tufts so directed relative to the brush back and handle as to contact all accessible surfaces of the teeth and remove food deposits therefrom during the brushing operation; and which is simple and durable in construction, economical to manufacture, easy to use, and neat and attractive in appearance.

Other objects and advantages will become apparent from a consideration of the following description and the appended claim in conjunction with the accompanying drawing wherein:

Figure 1 is a side elevational view of a toothbrush illustrative of the invention shown in operative association with a human dental arch diagrammatically illustrated in broken lines;

Figure 2 is a bottom plan view of the toothbrush illustrated in Figure 1; and

Figure 3 is a transverse cross sectional view on the line 3—3 of Figure 1.

With continued reference to the drawing, the brush comprises an elongated body, generally indicated at 10, formed of a suitable rigid and preferably slightly resilient material, such as synthetic resin plastic, natural or synthetic rubber or an inorganic material, and bristle tufts, generally indicated at 11, secured each at one end in the body 10 near one end of the latter and projecting from one face or surface of the body in spaced apart relationship to each other.

The body 10 includes a handle 12, a brush back 13 at one end of the handle and a neck 14 disposed between the handle and the brush back and is longitudinally curved on a flat arc with the surface of the brush back 13 from which the bristles extend and the surfaces of the neck 14 and handle 12 at the same side of the body substantially in a common arcuate surface.

The handle 12 is of generally rectangular cross sectional shape and tapers arcuately in a direction toward the neck 14. It has four concave surfaces extending longitudinally thereof, as indicated at 15, 16, 17 and 18 providing therebetween four outwardly projecting, rounded ribs or ridges 19, 20, 21 and 22 which give a firm grip on the handle and prevent the handle from turning in the hand of the user even though the handle is wet. This also provides a structure of maximum rigidity consistent with the weight and size of the handle so that the longitudinally curved shape of the handle will be retained during use of the toothbrush.

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The neck 14 is of rounded shape and tapers in a direction away from the handle and in a direction away from the adjacent end of the brush back 13 so that its minimum cross sectional area is intermediate the length thereof but somewhat nearer the brush back than the handle.

The brush back 13 has a substantially flat face or surface from which the bristles 11 extend and is convexly rounded on its opposite side. The brush back tapers in a direction away from the neck 14 and terminates in a rounded formation at its distal end.

The brush back 13 is of sufficient rigidity to hold the bristle tufts in the proper direction relative to the handle, but the neck 14 is somewhat more resilient than either the handle or the brush back so that the brush back can move slightly relative to the handle when subjected to pressure.

The bristle tufts are arranged in two rows disposed one row along each opposite side of the brush back 13 and the tufts in the two rows are preferably staggered relative to each other, as is particularly illustrated in Figure 2. The bristle tufts are inclined slightly in a direction away from the surface of the brush back 13 from which they extend and away from the handle 12 so that the distal ends of the bristles will be forced deeply into the spaces between the teeth as the brush is moved across the surfaces of the teeth, as is particularly illustrated in Figure 1.

The bristles from which the tufts 11 are formed may be either animal bristles or synthetic bristles of known composition or construction and the bristle tufts are received at their small ends in corresponding apertures provided in the brush back and secured in these apertures in a desired or well known manner.

Near its end remote from the neck 14 the handle 12 is provided with a transversely extending aperture 23 which aperture may receive a fixed peg or hook for suspensively supporting the toothbrush, when desired.

It will be noted that the bristle tufts 11 decrease in length in a direction from the tufts at the distal end of the brush back 13 toward the neck 14 so that the outer ends of the tufts are disposed adjacent a plane which intersects

the member 10 substantially at the juncture between the handle 12 and the neck 14 and is disposed at an acute angle to the adjacent surface of the neck. This arrangement also assists in positioning the bristle tufts so that the bristles will be forced deeply into the spaces between the teeth to clean out food deposits in these spaces.

The invention may be embodied in other specific forms without departing from the spirit or essential characteristics thereof. The present embodiment is, therefore, to be considered in all respects as illustrative and not restrictive, the scope of the invention being indicated by the appended claim rather than by the foregoing description, and all changes which come within the meaning and range of equivalency of the claim are, therefore, intended to be embraced therein.

What is claimed is:

In a toothbrush, an elongated body including a handle at one end, a neck intermediate its ends, and a brush back at its other end, said handle being generally rectangular in cross section and tapering arcuately in a direction toward the neck, the several sides of said handle being transversely concaved with the concave surfaces of the handle extending longitudinally thereof for the full length of the handle, said concave surfaces providing therebetween outwardly projecting, rounded ribs extending the length of the handle, said neck being of rounded cross section and tapering in a direction away from the handle and in a direction away from the adjacent end of the brush back to locate the minimum cross sectional area of the neck intermediate thereof, said minimum cross sectional area of the neck being nearer the brush back than the handle, said brush back having a substantially flat bristle face and having its outer face transversely convexed, said brush back decreasing progressively in thickness fully from end to end in the direction of the distal end thereof while remaining constant in width throughout its length, the brush back having its outer surface disposed substantially in a plane arranged at acute angles to the plane of its bristle face; and parallel rows of bristle tufts secured to said back with the tufts of each row extending outwardly from the bristle face of the brush back, said tufts decreasing progressively in length in a direction away from the distal end of the brush back with their outer ends terminating in a plane approximately paralleling that of the outer surface of the brush back and intersecting the body substantially at the juncture between the handle and neck, with said plane of the outer ends of the bristle tufts being disposed at an acute angle to the adjacent surface of said neck, said body being longitudinally curved on a flat arc with said bristle face of the brush back and those surfaces of the handle and neck disposed at the same side of the body as the bristle face lying substantially in a common arcuate surface, the respective bristle tufts being inclined slightly out of perpendicularity to the plane in which the outer ends thereof are disposed with the direction of inclination, when taken from the inner to the outer ends of said tufts, being toward the distal end of the brush back.

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