April 19, 1938. P. WARSAW 2,114,947

TOOTH BRUSH

Filed Sept. 3, 1935

Fig. 1.

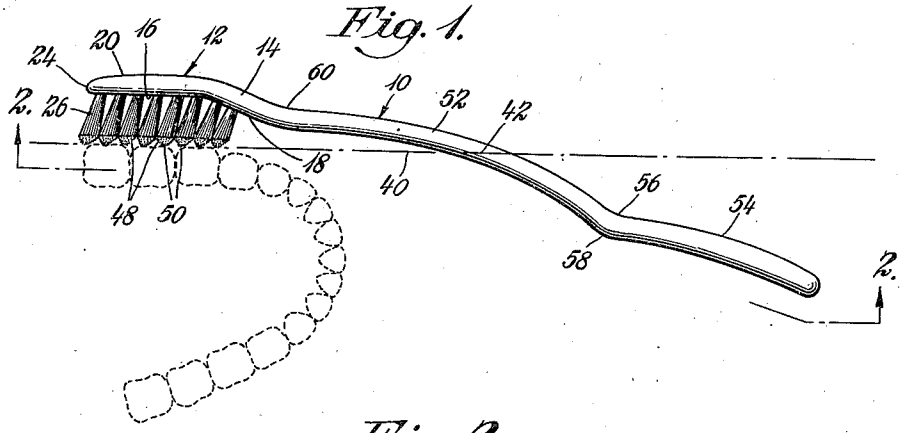


Fig. 2.

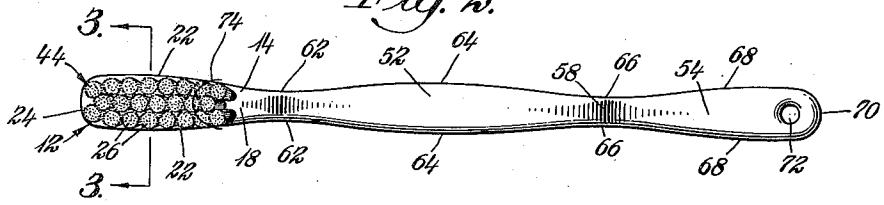


Fig. 4.

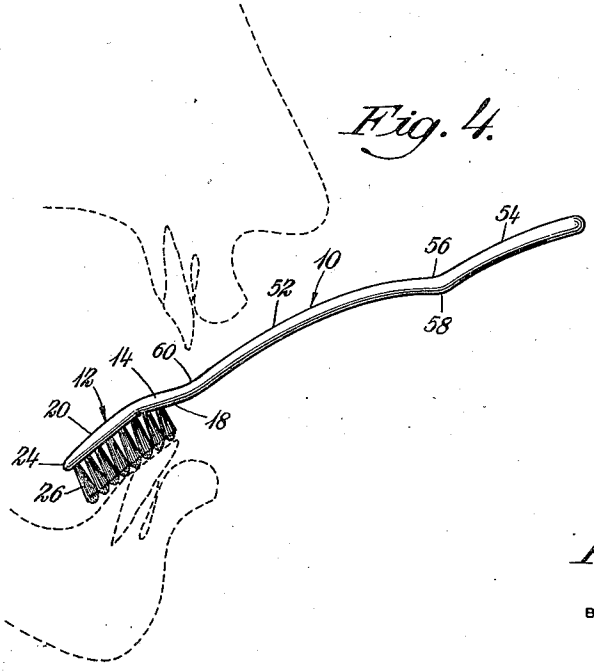


Fig. 3.

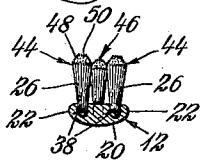
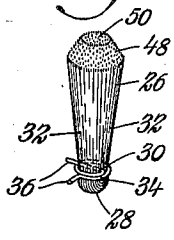


Fig. 5.



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TOOTH BRUSH

Philip Warsaw, Chicago, Ill.

Application September 3, 1935, Serial No. 39,051

2 Claims. (Cl. 15—167)

My invention relates to dental equipment, and has among its objects and advantages the provision of an improved tooth brush.

In the accompanying drawing:

Fig. 1 is a side elevation of my brush showing its application to the outer tooth surfaces of a human mouth;

Fig. 2 is a plan view of the bristle side;

Fig. 3 is a sectional view along the line 3—3 of Fig. 2;

Fig. 4 is a side elevation of the brush showing its application to the inner tooth surfaces, with the brush positioned in parallel alignment with the teeth; and

Fig. 5 is a perspective view of a tuft of bristles illustrating my novel means for anchoring the tufts.

In the embodiment selected to illustrate my invention, I make use of a handle 10 of any suitable material. One end of this handle constitutes the bristle retaining head 12. This head terminates in a neck 14 merging with the handle 10. The inner surface 16 of the head 12 is straight, which is also true of the inner surface 18 of the neck 14. These surfaces are arranged at an obtuse angle to each other. In cross section, the head 12 and the neck 14 are shaped to provide a gentle curvature about the outer face 20 and the sides 22, while the end 24 of the head 12 is rounded.

Along the surfaces 16 and 18, tufts of bristles 26 are inserted and anchored in the manner illustrated in Figs. 3 and 5. In Fig. 5, the tuft 26 comprises a group of bristles bent back upon themselves at 28, with a wire 30 positioned between the two groups 32 of the bristles. With the wire 30 positioned between the folded bristles, the wire is wound about the folded bristles to define a convolution 34 which binds the two groups 32 into assembled relation as a unit group. The ends of the wire project beyond the tuft as at 36 to provide anchoring means which are imbedded in the material of the head 12 and neck 14, as indicated at 38, in Fig. 3.

In Fig. 1, I illustrate the handle 10 as being arranged generally at an angle to the head 12. This angularity conforms generally to the obtuse angle between the neck 14 and the head 12. I prefer to shape the tufts 26 so that the tips of the tufts lie in a straight line 40 intersecting the handle 10 at 42.

In Fig. 2, I illustrate the tufts 26 as being arranged in three rows 44 aligned in parallel relation with the longitudinal axis of the handle 10. The tufts in the rows 44 are grouped in curved rows of three tufts with respect to the transverse axis of the head 12 and the neck 14. I find that the curved rows perform an effective cleansing action. In addition, the tufts are arranged in such relation that the bristles of each tuft are braced by the bristles in an adjacent tuft.

Referring to Fig. 3, the tufts 26 in the central row 44 are slightly shorter than the tufts in the two outside rows, whereby a groove-like formation 46 is provided which facilitates the holding of powder or other cleansing materials applied to the bristles. Each tuft is tapered at 48, which taper terminates in a flat end 50 so that the tapered part takes the form of a truncated cone.

My handle 10 is shaped to provide two curved reaches 52 and 54, which reaches are separated by a depression 56 resulting in a hump 58 projecting from the inner side of the handle. The neck 14 and the adjoining end of the curved part 52 define a depression 60.

In viewing the handle 10 according to Fig. 2, the handle and neck are narrowed at 62 in the vicinity of the depression 60, while the curved part 52 bulges laterally at 64. The handle is narrowed at 66 in the vicinity of the depression 56, while the curved part 54 is bulged at 68 with its end rounded at 70 and provided with an opening 72 for the reception of a supporting pin or hook.

In Fig. 1, the tufts 26 are arranged with their longitudinal axis at an angle to the face 16. This angularity substantially defines a right angle with respect to the general longitudinal axis of the handle 10. It will be noted that the end tufts of the head 12 and the tufts anchored in the neck 14 are inclined inwardly so as to perform a bracing function for the other tufts.

In operation, my handle is shaped to facilitate an effective grip thereon. The handle may be gripped in different ways, but the construction is such as to compel the user to apply a proper adjustment of the fingers. In manipulating the brush while grasped at the outer end of the handle 10, two fingers may be passed over the outerside of the curved part 54, with the thumb positioned underneath the handle in abutting relation with the grip 58. A second type of grip consists in passing three fingers over the curved part 54, with the thumb positioned beyond the hump 58. In cases where the handle is supported in the palm of the hand, four fingers pass over the curved parts 52 and 54, with the thumb positioned in the concavity of the reach

52. Regardless of the type of grip employed, a firm grasp is attained.

In Fig. 4, I illustrate the significance of one phase of my brush construction. In brushing the teeth according to the illustration, the depression 60 provides accommodation for the upper teeth, while the angularity of the handle 10 is such as to facilitate manipulation of the bristles without interference. The angularity of the bristle tufts with respect to the handle is such as to provide accessibility to the inner faces of the teeth.

Fig. 1 shows the relation of the brush handle to the curvature of the teeth. The angularity of the handle with respect to the tufts of the bristles is such that the brush may be manipulated freely without obstruction and with no widening of the mouth.

In inclining the tufts, I provide a bristle construction which is less severe on the gums than in cases where the bristles are positioned at right angles to the inner face of the brush head, and the angularity of the bristle tufts with respect to the brush handle makes for accessibility to all surfaces of the teeth. I have found that tufts arranged according to the curved lines 74, of Fig. 2, provide an effective cleansing action, particularly in cases where the bristle assembly is oscillated about a short radius.

The bulges 64 and 68 facilitate an effective grip, in addition to the formation of the handle when viewed according to Fig. 1. The head 12, when viewed according to Fig. 2, tapers gently in the direction of the neck 14. All parts of the brush when viewed in cross section are shaped to provide a gentle curvature.

In addition to providing a trough for the reception of cleansing material, the groove-like formation 46 provides a bristle configuration which performs an effective cleansing action on convex surfaces.

Without further elaboration, the foregoing will so fully explain my invention that others may, by applying current knowledge, readily adapt the same for use under various conditions of service.

I claim:

1. A tooth brush comprising a bristle supporting head, a handle and a neck connecting the handle with the head, said handle and neck being arranged at an angle to the bristle supporting head, the general angularity of the handle conforming to the angularity of the neck with respect to the head, tufts of bristles anchored in the head and said neck, said tufts being inclined longitudinally with respect to the head, said handle being shaped to provide two bowed reaches bowed in the same direction, and each side edge of said handle being shaped to provide two reaches bowed in the same direction.

2. In a tooth brush, a head, tufts of bristles anchored to the head in oblique alignment longitudinally therewith, the free ends of the tufts being shaped to define truncated cones with the tops and bases of the cones arranged in parallel relation with the head.

PHILIP WARSAW.