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O. C. ZAEBST

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TOOTH BRUSH

Original Filed Nov. 14, 1933

Fig. 1.

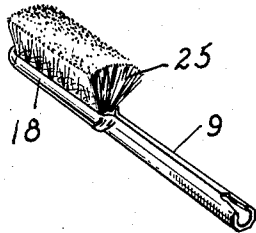
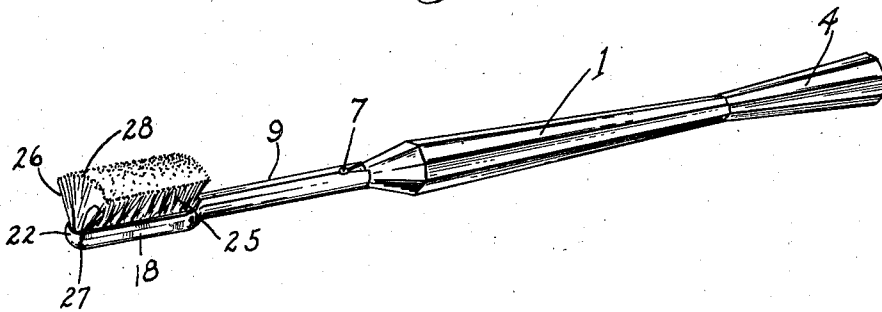


Fig. 2.

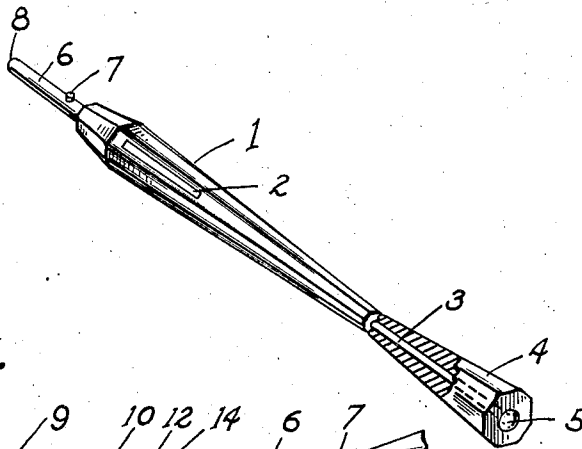
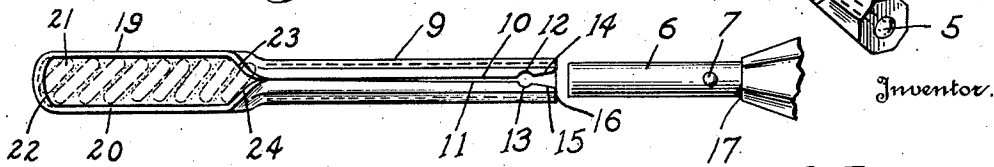


Fig. 3.



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UNITED STATES PATENT OFFICE

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TOOTH BRUSH

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9 Claims. (Cl. 15-167)

For many years toothbrushes have been made with various contours as to their brushing surfaces, but these toothbrushes for the most part embodied brush bases of substantially greater width than the width of the brush tuft. The use of these brushes in the manner now prescribed by modern oral hygiene is both painful and difficult and in some instances it is impossible to obtain a correct brushing action on certain teeth such as the wisdom teeth.

Brushes of the prior art are further characterized by being unwieldy as well as expensive. It is therefore a desire of the present invention to provide a brush which is small, neat and compact.

It is also an object of the present invention to provide a brush which is capable of oscillating movement over the teeth in order to clean the teeth in a manner now approved by practically all dentists. This manner of cleaning requires an outward brushing action from the base of the teeth and also a different action upon the gums beyond the teeth. The gums should receive a brushing action which is brought about by a very slight movement of the brush handle, as the brush itself remains almost stationary, which is done in order to keep the gums in a healthy condition. The outward brushing action dislodges any particles of food that may be between adjacent teeth, and provides the normal cleaning action necessary to cleanse the surfaces of the teeth.

The brushes now sold were in almost every instance designed for an entirely different form of brushing action, that is, the purpose of the prior art brushes involved a cross wise or movement transverse to the vertical axis of the teeth. This method of brushing has now been entirely supplanted by the modern method previously described. It will be seen that I am seeking to provide a brush which can be easily placed both on the interior and exterior of the teeth, and which is capable of an oscillating movement from the lips or other portions of the mouth.

To the accomplishment of the foregoing and related ends, said invention, then, consists of the means hereinafter fully described and particularly pointed out in the claims; the annexed drawing and the following description setting forth in detail certain mechanism constituting, however, but one of various applications of the principles of my invention.

In the accompanying drawing:—

Fig. 1 is a perspective view of my preferred form of novel toothbrush; Fig. 2 is a perspective view with one part in section showing the brush clip removed from the brush handle, and Fig. 3 is a detail section plan view of the brush clip.

My improved brush consists of a brush handle which may be circular, or as shown, may con-

sist of a many sided body. The provision of a many sided handle makes grasping of the brush and brushing action therewith easier and this is especially true when the brush is wet.

The sides of the brush may or may not be indented with flutings 2, such construction also making a firmer grip more easily attained. The brush handle body 1 has a shaft 3 projecting from one end about which a base portion 4 pivots, the base being held in assembled relationship by means of a head 5 on the shaft 3. The base 4 has the same general configuration as the body 1, and both of these elements are tapered in order to impart a pleasing appearance and also to reduce the amount of material necessary.

At the opposite end of the body 1 from that just described, a shaft 6 projects which has thereon a pin 7. This shaft 6 is preferably provided with a rounded nose 8 so as to easily engage the tubular brush clip 9. The brush clip 9 preferably consists of a single piece of metal which is formed with a tubular portion wherein the edges 10 and 11 abut. At one end of the clip the edges 10 and 11 are recessed at 12 and 13, respectively, and such edges are then tapered or flared outwardly as shown by edges 14 and 15. This construction makes it very easy to assemble the clip with the brush handle and also makes it possible, because of the split tubular arrangement for the clip, to resiliently grip the shaft 6. The clip is pushed upon the shaft 6 and the end 16 abuts the shoulder 17 on the body 1. This position is shown in Fig. 1, and when the clip is seated in this manner the recesses 12 and 13 will resiliently grip the pin 7. In this manner rotary movement of the clip with respect to the brush handle is prevented and due to the resilient grip the brush and clip function as an integral unit. This is believed to be a novel manner of assembling brush clips with toothbrush handles, as in the prior art the so-called refillable brushes require more or less cumbersome locking devices.

At the opposite end of the clip from that just described the brush is expanded and the edges 10 and 11 instead of abutting extend in substantially parallel planes. In this way a seat for the brush tuft is simply and inexpensively formed and the clip may have a rounded base 18 which will offer very little, if any, resistance in contact with portions of the mouth. The edges 19 and 20 may be bent inwardly slightly to grip the base of the brush tuft 21, or the brush tuft may be held in place by the overhanging edge 22 in combination with the angular edges 23 and 24.

In the preferred form of brush tuft 25 the bristles are held by a twisted wire, but it is to be distinctly understood that I contemplate the use of a molded base or any other similar base that may for particular reasons be more desirable to

the owner of the brush. In either event the brush has a cross section which is substantially in the shape of a truncated cone, bounded by edges 26 and 27 and a rounded top 28. In the preferred form, the top surface of the brush tuft is curved so as to be a segment of the circumference of a circle. This curved or arced outer surface imparts a highly efficient cleansing action because of the pivoted handle construction, as oscillation of the brush is easily obtained. Obviously, the bristles can be forced into the food retaining crevices of the teeth with a simple movement and such food will be readily carried out, thus preventing decay.

It is to be understood that altho I have shown a brush consisting of at least two parts, the brush may be made of one piece construction, and that the body and base portions 1 and 4 may be solid or hollow, and also may be made of one piece.

From the preceding description it will be seen that I have provided a brush that may be oscillated downwardly with respect to the upper teeth and upwardly with respect to the lower teeth with a minimum of effort by the user, and without awkward engagement with certain portions of the mouth, such as the interior lip portions. This is amply demonstrated by a comparison of my brush with an ordinary toothbrush.

In the conventional brush the base is at least as wide as the brush tuft and in order to reach the base of the teeth and upper gum portions it is necessary to push the wide base with considerable force against the lips.

The lips normally lie close to the teeth and gums and it is almost impossible to obtain a correct oscillating brushing action with a brush having a wide base because there is not sufficient room between the teeth and inner lip portion of the mouth in which to oscillate the brush.

In sharp distinction to this, my brush can be rotated about a center slightly removed from the center of the clip 9 and without forcing the base 18 of the clip up against the lips. Even if it should be necessary to force this base portion up against the lips the same can be easily and painlessly accomplished because of the reduced cross section of the clip.

The provision of a pivoted handle base 4 makes it possible to securely anchor the base with the little finger, while the forefingers can easily oscillate the body 1. In this way the user can brush his teeth in the manner now specified by practically all oral hygienists and he can accomplish this without having to push his lip outwardly and without contacting the roof of his mouth. Furthermore, the rounded nose 22 of the brush clip 9 makes it possible to impart a thorough brushing action to the wisdom teeth, and it is to be particularly noted that this is utterly impossible with conventional toothbrushes.

A further advantage of the two piece construction is that the brushes may be collapsed and carried in an exceedingly small container.

It is recognized that oscillating brushes have been provided heretofore but these brushes as far as I am aware usually embodied one or more springs, and in order to brush one's teeth it has been necessary to overcome the tension of the spring before power could be applied to brush the teeth. It will be noted that in the present construction it is not necessary to overcome any spring tension and that an oscillating movement is obtained with the greatest facility.

Finally, the brush is inexpensive, small, neat

and light and can be made of either metal, wood, rubber, Celluloid, or a phenolic condensation product so that it will last indefinitely.

Other modes of applying the principle of my invention may be employed instead of the one explained, change being made as regards the mechanism herein disclosed, provided the means stated by any of the following claims or the equivalent of such stated means be employed.

I, therefore, particularly point out and distinctly claim as my invention:—

1. An article of the character described comprising a brush handle, a shaft on one end of said handle, a freely pivoted base portion on said shaft, and a toothbrush mounted on the other end of said handle.

2. An article of the character described comprising a brush handle, a shaft on one end of said handle, a pivoted base portion on said shaft, and a brush clip removably engaged with said handle, said handle having a many-sided exterior surface and said clip secured by resilient means to said handle.

3. A brush clip comprising a closed hollow tubular portion and a channelled portion integral therewith, said closed tubular portion having a flared recess in the wall thereof.

4. An article of the character described comprising a removable part of a toothbrush having a closed tubular portion and a channelled portion integral therewith, said closed tubular portion having a flared recess therein, said recess terminating in a partial circle the diameter of which is greater than the smallest width of said flared recess.

5. An article of the character described comprising a brush handle, a shaft fixedly mounted on one end of said handle and a base portion revolvably mounted on said shaft, so as to be freely pivotal and means for mounting a brushing member on the other end of said handle.

6. An article of the character described comprising a brush handle, a shaft fixedly mounted on one end of said handle and a base portion pivotally mounted on said shaft, the handle and base portions having elongated tapering configurations and means for mounting a brushing member on the other end of said handle.

7. An article of the character described comprising a brush handle, a shaft fixedly mounted on one end of said handle and a base portion pivotally mounted on said shaft, the handle and base portions having elongated tapering configurations, means on said handle to promote easy finger-gripping and means for mounting a brushing member on the other end of said handle.

8. An article of the character described comprising an elongated brush handle and a gripping base portion pivotally mounted at one end of said handle, said handle decreasingly tapering in thickness toward said base portion and means for mounting a brushing member on the other end of said handle.

9. An article of the character described comprising an elongated brush handle and a gripping base portion pivotally mounted at one end of said handle, said handle decreasingly tapering in thickness toward said base portion, and said base portion decreasingly tapering in thickness toward said handle and means for mounting a brushing member on the other end of said handle.

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