

Nov. 18, 1941.

F. E. WOLCOTT

2,262,982

TOOTHBRUSH

Filed Aug. 24, 1938

Fig. 1.

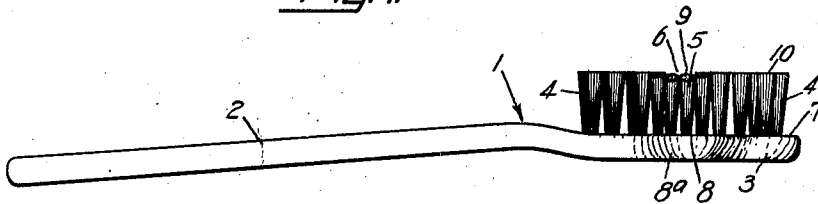


Fig. 2.

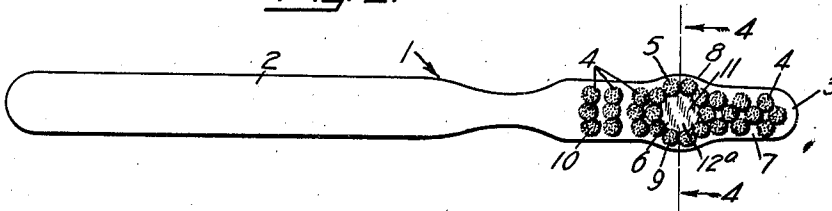


Fig. 3.

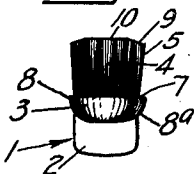


Fig. 4.

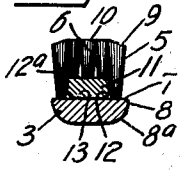


Fig. 7.

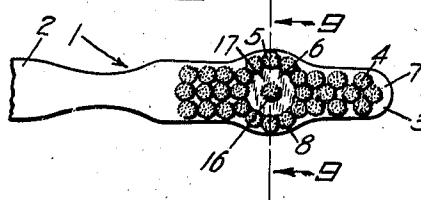


Fig. 5.

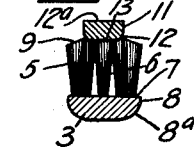


Fig. 6.

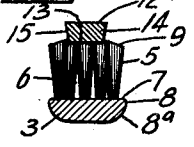


Fig. 8.

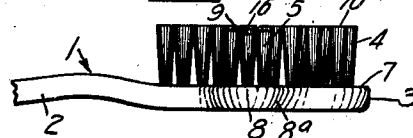


Fig. 10.

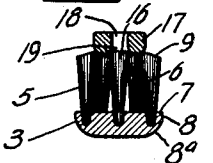


Fig. 11.

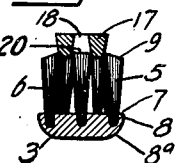
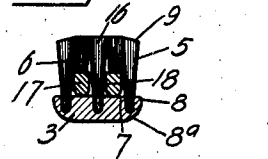
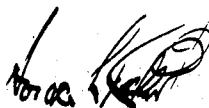


Fig. 9.



INVENTOR
Frank E. Wolcott

By 
ATTORNEY

UNITED STATES PATENT OFFICE

2,262,982

TOOTHBRUSH

Frank E. Wolcott, West Hartford, Conn.

Application August 24, 1938, Serial No. 226,601

14 Claims. (Cl. 15-167)

My invention relates to toothbrushes.

It has among its objects to provide an improved toothbrush, and, more particularly, an improved construction whereby, while using the same as an ordinary toothbrush, the gums are massaged in such manner as to promote the maintenance of a healthy mouth. A further object of my invention is to provide an improved construction wherein improved gum massaging bristle means are incorporated in the brush in such manner that at the same time that the teeth are brushed, the gums are effectively massaged without requiring a separate massaging operation. A still further object of my invention is to provide an improved construction wherein, while obtaining the above advantages, it is also made possible to dispose the supplementary bristles and the other bristles of the brush in an improved manner to provide an improved pocket for receiving a dentifrice pellet whereby the process of applying the dentifrice to the brush is materially facilitated at the same time that waste of dentifrice is avoided, and the dentifrice of the pellet is effectively utilized in both the cleansing of the teeth and the massaging of the gums. Still further objects of my invention are to provide an improved dentifrice pellet having improved means adapted to cooperate with my improved brush and to be readily inserted in and subsequently positioned in, said dentifrice receiving pocket, and to provide an improved construction and arrangement of bristles and pocket whereby the dentifrice pellet, while readily inserted, is effectively maintained against accidental separation from the brush. My invention in certain of its phases also includes improved supplementary bristle means disposed in the pellet aperture and also cooperating in an improved manner with an improved form of pellet during insertion of the latter and brushing of the teeth. These and other objects and advantages of my improved construction will, however, hereinafter more fully appear.

In the accompanying drawing, I have shown for purposes of illustration certain embodiments which my invention may assume in practice.

In the drawing:

Figure 1 is a side elevation of a complete brush equipped with one form of my improvement;

Fig. 2 is a top plan view of the brush;

Fig. 3 is an end elevation of the bristle carrying end of the brush;

Fig. 4 is a section on line 4-4 of Figure 2, one improved form of pellet being shown in position in the pocket in the bristles;

Fig. 5 is a view similar to Figure 4, but showing the pellet in process of being inserted in the pocket;

Fig. 6 is a view similar to Figure 5, but showing a modified form of pellet in the same position;

Fig. 7 is a plan view of the bristle carrying end of a modified form of brush;

Fig. 8 is a side elevation of the construction shown in Figure 7;

Fig. 9 is a section on line 9-9 of Figure 7, showing a modified form of pellet disposed in the pellet pocket in the bristles;

Fig. 10 is a view similar to Figure 9, showing such a pellet in process of being inserted in the pocket, and

Fig. 11 is a view similar to Figure 10, but showing a further modified form of pellet in process of being inserted.

Referring first to the illustrative form of my invention shown in Figures 1 to 5, it will be noted that I have shown a toothbrush, generally indicated at 1, and having a handle 2 and bristle carrying, or back, portion 3 carrying usual bristles 4; the cleansing portion of the brush being of an improved construction, as hereinafter described.

Referring first to the bristles, it will be noted that the back 3 has at its front and rear ends, bristles 4 which may be disposed in any usual manner; for example, the bristles at the front end of the brush preferably being narrow and closer together than those at the rear end, as in a usual construction. However, it will be observed that, intermediate the bristles 4 at the front and rear ends, bristles 5 are provided which, while similarly seated in the back 3, are disposed in an improved manner laterally with respect to the other bristles in the brush, i. e. so that they extend beyond the sides of the bristles 4. Herein, these bristles 5 are arranged around a central pellet recess 6 which is free from bristles and adapted to receive a dentifrice pellet, as hereinafter described, so that the latter may bottom on the usual flat surface 7 of the bristle carrying portion 3 from which all bristles project. If desired, more than one series or row of bristles 5 may be provided at each side of the pellet recess 6, but in a preferred construction only a single row of such bristles is provided. Further, it will be understood that these bristles 5 may be spaced somewhat farther apart than illustrated, but the same are preferably disposed relatively close together and in such manner that, with the adjacent bristles 4, bristles extend clear around the pellet recess 6, in such manner as thereby effect-

ally to retain a pellet in said recess. While, if desired, the bristle carrying portion 3 of the brush may be so wide as to be without lateral projections, I preferably provide curved or arcuate lateral projections 8 intermediate the ends of this portion 3 and in which the laterally located bristles 5 are embedded in a usual manner, these portions 8 also preferably having sloping faces 8a leading to flat surfaces thereon forming a continuation of the flat surface 7 heretofore described. Attention is further directed to the fact that the bristles 5 at the opposite sides are also preferably cut or sloped off downwardly toward their outer sides, as shown at 9, while the tops 10 of these bristles 4 immediately in front and rear of the side bristles 5, are preferably cut off horizontally.

Cooperating with the brush structure thus provided, is a dentifrice pellet, or disc, 11, adapted to be inserted in the recess 6. This pellet may be formed of any of various different dentifrices in powdered form, or even of hardened or enclosed tooth paste, but it will be understood that irrespective of the material used, it is adapted to break down relatively quickly when wet and when subjected to the rubbing action incident to the use of the toothbrush in the mouth. In a preferred construction, this pellet is also provided with a reduced or rounded periphery 12 on its bottom face in such manner that when the pellet is placed over the recess 6, this portion 12 will engage with the ends of the adjacent bristles in such manner as to deflect those ends outward and thereby facilitate the insertion of the pellet in the recess. Further, it will be noted that the pellet herein has a substantially flat center, or bottom, 13, surrounded by the rounded edge 12 and adapted to rest upon the flat surface 7 of the bristle carrying portion 3 which also forms the bottom of the recess 6, while the top of the illustrative pellet is also flat and of increased diameter, as at 12a, so that it is disposed close to the bristles in the expanding tufts. Thus, when the pellet is inserted in that recess, it is definitely located therein, due to the location and resiliency of the bristles, which latter causes them to swing back to reduce the size of the mouth of the recess 6 after the insertion of the pellet, and further due to the engagement of the wider portion 12a of the pellet with the sides of the expanding bristles in the adjacent tufts, and to the engagement of the flat surface 13 on the pellet with the flat top 7 of the brush portion 3.

In the use of my improved brush, it will be understood that, instead of pouring powder into the palm of the hand and applying it to a brush, or applying powder or tooth paste directly onto the brush, the user, instead, inserts a dentifrice pellet 11 into the recess 6, preferably, though not necessarily, before the brush is wet. As the pellet moves downward into the recess, the surfaces 12 on the pellet spring apart the bristles surrounding the recess, and these bristles then spring back in such manner as to securely position the pellet at the bottom of the recess, as shown in Figure 4. Then, preferably, the brush is wet and used in a usual manner. However, during use, it will be observed that the bristles 5 perform the new function of massaging the gums as the ordinary bristles 4 cleanse the teeth, the bristles 5 being so disposed and shaped as to act on the gums in a manner wholly impossible with a brush of ordinary construction, due not only to the improved lateral location of these

bristles 5, but also to their sloping ends 9. Herein, these bristles 5 also act to cooperate with the other adjacent bristles 4 in preventing loss of the pellet. For example, should the brush be accidentally inverted before inserting in the mouth, the pellet will still remain in its recess, its portion 12a then engaging the wider expanded tuft portions or moving into engagement herewith. It will also be evident that the action of all of the bristles during use, cooperating with the water applied to the brush, in breaking down the pellet and in distributing the dentifrice therein uniformly and effectively throughout the bristle covered area of the brush and to the teeth and gums. Moreover, when the brushing operation is completed, the pellet then being completely dissolved, the entire brush may be cleansed in water even more readily than an ordinary brush, while the arrangement of the bristles relative to a recessed aperture larger than the space ordinarily provided between adjacent tufts, is such as to permit quick drying and thereby insure that the brush will be thoroughly dried before it is again used.

As a result of my improved construction, it is made possible very effectively to massage the gums in such manner as thereby to promote the health of the mouth, as recommended by the dental profession. Further, it is made possible to do this as a mere incident to the brushing of the teeth, and, accordingly, in such manner that the gums will be massaged by the average person, whereas very few persons will follow the directions of their dentist as to massaging the gums as a separate operation. When it is desired also to use a dentifrice, as a result of my improved arrangement of the gum massaging bristles to produce a dentifrice recess, it is also made possible to eliminate all need for soiling the hands or wasting dentifrice during brushing the teeth, the pellet being firm while being handled and readily popped into the recess; if desired, directly from the receptacle containing the pellet. Further, by reason of the special shape of the pellet, it will also be observed that the insertion of the same in the correct manner in the recess is also facilitated, while the improved shape of the pellet is such as, through the provision of the enlargement at the top of the pellet, to insure that the latter will be securely located in the recess, thereby eliminating the care heretofore necessary to avoid washing off of the powder or of the tooth paste when the brush carrying the same is placed under running water. These and other advantages of my improved construction will, however, be clearly apparent to those skilled in the art.

In Figure 6, I have shown a modified construction which may be used, if desired. In this construction, the brush per se is of the construction described in Figures 1 to 5, but it will be noted that the pellet 11, instead of being provided with the curved lower periphery 12 previously described, is frusto-conical in shape and provided with a corresponding side wall 14 which obviously will spread the bristles during insertion of the pellet in the recess, while also providing the desired enlarged top portion on the pellet which acts to prevent subsequent loss of the pellet from the recess. In this construction, it will also be noted that a flat surface 15 is provided on the bottom, enabling the pellet to engage and be further positioned by the flat surface 7 of the brush back, in such manner as thereby also more advantageously to position the pellet through

contact with a substantial portion of the base, as distinguished from a point of contact at the back of the brush obtainable when a spherical pill or pellet is used. Here also it will be evident that either form of pellet may be of varying depth, as desired.

In Figures 7 to 11, I have shown a modified form of bristle structure and modified forms of pellets adapted to cooperate therewith. In this construction, the brush is similar to that heretofore described, save that a central tuft 16 is provided axially of the pellet recess 6 and spaced from the surrounding tufts. While this tuft may be of any desired height, it preferably is of the same height as the bristles 4 and likewise preferably has its top cut off at right angles. Further, it will be noted that the pellet 17 used in this construction is provided with an axial aperture 18 adapted to receive this tuft 16 and cooperate therewith in confining and directing the bristles through the pellet and in positioning the pellet both during insertion of the same in the recess, and, subsequently, during use of the brush. In one form of this axial recess 18, shown in Figure 10, the same is bell-mouthed toward its bottom, as shown at 19, in such manner as thereby to facilitate the insertion of the pellet on the central tuft by directing the bristles in the latter into the aperture 18; while in the other form thereof, shown in Figure 11, the axial aperture is uniformly tapered, as shown at 20, from a point of maximum diameter upward to a point of minimum diameter at the top of the aperture and pellet. Here note also that the pellet shown in Figure 10 corresponds externally to that shown in Figures 4 and 5, while that shown in Figure 11 corresponds externally to that shown in Figure 6.

As a result of these modified constructions of brush and pellet, it will be evident that an additional tuft is provided in the tuftless area of my previous construction. Further, the new central tuft acts also to position and locate the pellet even more securely in the pellet recess. Moreover, due to the use of the axial tuft and axial recess in the pellet, it will be evident that the pellet may be caused to break down even more readily and quickly than a solid pellet, this being due not only to the exposure of a larger area of the pellet to the water, but to the fact that the additional exposed area completely surrounds the axis of the pellet, as well as to the fact that the movements of the tuft 16 during use of the brush, act further to expedite the breaking down of the pellet during use.

In connection with the use of my improved brush, it will be evident that in certain forms thereof, the entire pellet recess may be filled with tufts, such a construction enabling the brush to be used with powder in the hand, or powder or tooth paste applied to the brush in the usual manner, while enabling my improved massaging effects to be obtained. However, I prefer to use the same in the form having my improved pellet recess and one of my improved forms of pellet therein, since this enables my improved massaging bristles to perform additional new functions in confining and cooperating with the dentifrice pellet, while facilitating and expediting the process of tooth cleansing. Further, such a construction insures that the dentifrice will be more uniformly applied to gums during the massaging operation wherever the brush is moved, as distinguished from having most of the dentifrice deposited on the portion of the teeth first contacting with the dentifrice, as is apt to

occur when the dentifrice is applied to the ends of the brush tufts in the usual manner.

While I have herein specifically described certain forms which my invention may assume in practice, it will be understood that these forms have been chosen for purposes of illustration, and that the invention may be modified and embodied in other forms without departing from its spirit or the scope of the appended claims.

What I claim as new and desire to secure by Letters Patent is:

1. A toothbrush having tooth cleansing bristle tufts forming a body thereof of normal width and also carrying laterally disposed gum massaging means thereon of substantially less length than the body of the brush and forming a short laterally projecting extension intermediate the ends of one side of the body, said massaging means being of substantially the width of one of the bristle tufts on said body and of substantially the length of two bristle tufts on said body and disposed substantially within the lateral limits of said body.

2. A toothbrush having tooth cleansing bristle tufts forming a body thereof of normal width and also carrying a plurality of gum massaging bristle tufts forming small laterally projecting extensions of the brush body of substantially less length than said body, said gum massaging tufts being of substantially the width of one of the bristle tufts on said body and of substantially the length of two bristle tufts on said body and said gum massaging tufts being symmetrically located on opposite sides of said body midway between the ends thereof and disposed substantially within the lateral limits of said body.

3. A toothbrush having a bristle carrying closed back portion and an imperforate closed area integral with said portion and on the bristle carrying face thereof providing a dentifrice pellet supporting surface on said face, and dentifrice disc receiving recess means having a closed bottom formed by said imperforate area and said recess also having a normally open opposite end and walls formed by the bristles on said back and said bristles disposed to enable a dentifrice disc to be inserted freely through the open end of said recess and rest on said imperforate area adjacent the bottoms of said bristles, the bristle tufts forming the side walls of said recess projecting beyond the sides of the body of the brush and forming short narrow laterally projecting gum massaging extensions intermediate the ends of the body of the brush.

4. A toothbrush having gum massaging bristles forming laterally disposed projections intermediate the ends of the body of the brush on opposite sides of the latter and having a dentifrice pellet receiving recess between said bristles on said opposite sides.

5. A toothbrush having oppositely disposed lateral extensions on the back thereof and gum massaging bristles on said extensions forming laterally disposed projections intermediate the ends of the body of the brush on opposite sides of the latter and having a dentifrice pellet receiving recess between the bristles on said extensions.

6. A toothbrush having an integral closed back portion and a dentifrice disc receiving recess closed at its bottom by said closed back portion and located substantially midway between the bristles on the opposite sides and opposite ends of said brush and also having disc positioning means centrally located in said recess and fixed

in said recess closing closed back portion and surrounded in said recess by an area free from tufts.

7. A toothbrush having gum massaging bristles forming laterally disposed projections intermediate the ends of the body of the brush on opposite sides of the latter and having a dentifrice pellet receiving recess between said bristles on said opposite sides, said recess having an axial bristle tuft therein and an area free from bristles around said tuft.

8. A toothbrush having a closed back and gum massaging bristles forming laterally disposed projections intermediate the ends of the body of the brush on opposite sides of the latter and having a dentifrice disc receiving recess between the bristles on said opposite sides and closed at its bottom by the brush back, and a dentifrice disc disposed in the bottom of said recess and seated on the brush back.

9. A toothbrush having a dentifrice pellet receiving recess between the bristles on the opposite sides thereof, an axially apertured dentifrice pellet in said recess, and axially located pellet positioning means in said recess extending through said aperture and surrounded by an area free from tufts.

10. A toothbrush having gum massaging bristles laterally disposed with respect to the body of the brush on opposite sides of the latter and having a dentifrice pellet receiving recess between the bristles on said opposite sides, a dentifrice pellet in said recess, and an axially located pellet positioning bristle tuft in said recess and extending axially through said pellet.

11. A toothbrush having gum massaging bristles

laterally disposed with respect to the body of the brush on opposite sides of the latter and having a dentifrice pellet receiving recess between the bristles on said opposite sides, a dentifrice pellet in said recess, and a pellet positioning bristle tuft disposed axially in said recess and extending axially through said pellet, said pellet having axial means for directing the bristles in said tuft through said pellet.

12. A toothbrush having gum massaging bristles laterally disposed with respect to the body of the brush on opposite sides of the latter and having a dentifrice pellet receiving recess between the bristles on said opposite sides, a dentifrice pellet in said recess, and a pellet positioning bristle tuft disposed axially in said recess and extending axially through said pellet, said pellet having axial means for directing the bristles in said tuft through said pellet and also having peripheral bristle directing means parting the bristles as said pellet is inserted in said recess.

13. A dental disc for use in a toothbrush having bristles, and having peripheral bristle parting means beneath its top, and a larger peripheral bristle engaging and disc positioning portion at the top of said parting means and extending substantially to the top of said disc.

14. A dental pellet for use in a toothbrush having bristles, and having peripheral bristle parting means, a larger peripheral bristle engaging and pellet positioning portion above said means, and an axial aperture having means for confining and directing bristles therethrough.

FRANK E. WOLCOTT.