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H. A. KEELER
TOOTHBRUSH ASSEMBLY WITH A REMOVABLE AND
RECHANGABLE DENTIFRICE CONTAINER
Filed Jan. 4, 1962

3,148,684

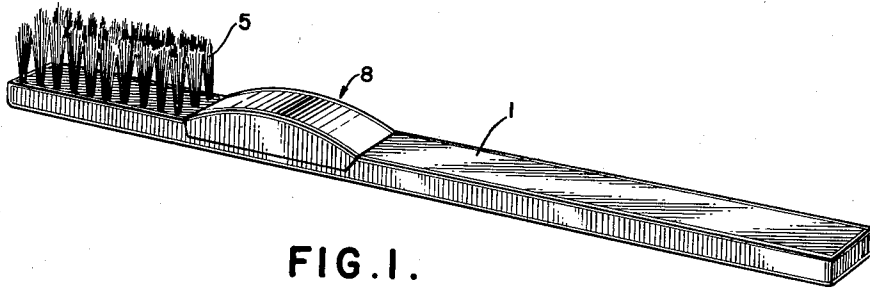


FIG. 1.

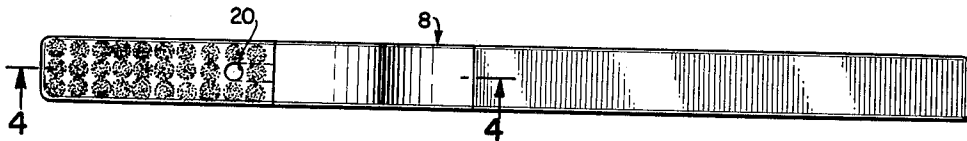


FIG. 2.

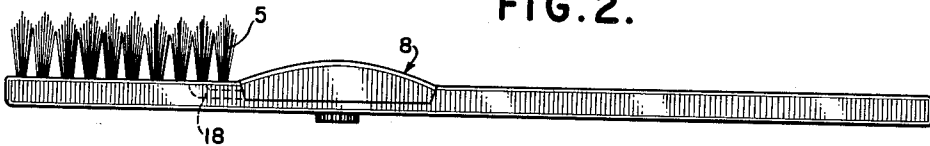


FIG. 3.

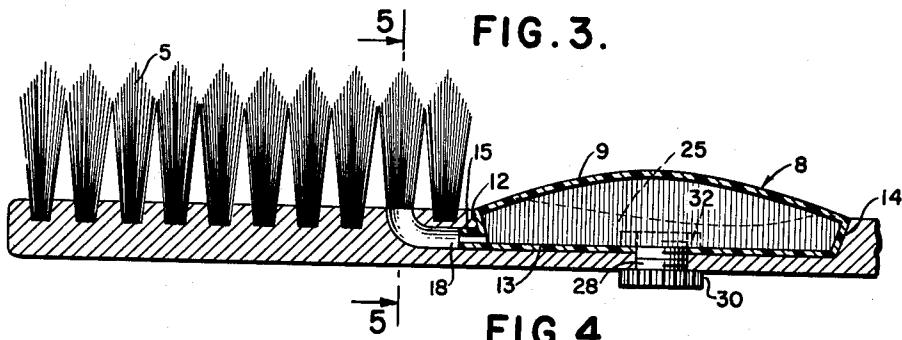


FIG. 4.

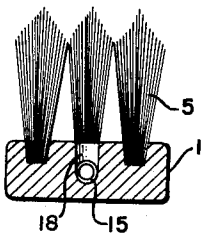


FIG. 5.

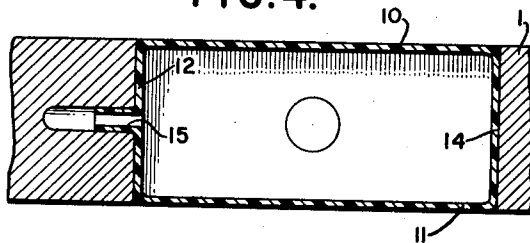


FIG. 6.

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TOOTHBRUSH ASSEMBLY WITH A REMOVABLE AND RECHARGEABLE DENTIFRICE CONTAINER

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This invention relates to a novel type of toothbrush, and is more particularly pointed to that type of article wherein a convenient toothpaste supply, present for immediate use, is supplied in an appropriate container mounted in the handle of the brush and in such fashion as to optionally permit use of the brush in ordinary fashion, or as an implement to be carried upon the person during the day for use at any convenient time.

It is appreciated that heretofore the cartridge or dispenser type of toothbrush has been proposed; however, in large part these prior art devices represent a relatively cumbersome combination of parts to obtain movement of the toothpaste from a given dispenser of one type or another to the bristle area. In such instances, various proposed types of dispensers are generally designed to carry a rather large amount of paste, and in some cases a full tube of toothpaste. Frequently, such combinations as are known to the art do not provide a passage for feeding the paste which is reasonable in length; more generally, the passage from dispenser to the bristle area is a long one, often complicated by devious turns thereof, which preclude effective passage of the paste and which also preclude or hinder thorough cleaning of the unit when this appears desirable.

Such involved factors or common characteristics of the prior art result in certain disadvantages which appear quite obvious. For example, whenever large amounts of toothpaste are stored in dispensers of this type, such paste will become stale and hard through use, or better, lack of use, over a given period of time, resulting in clogging and consequent inoperativeness of the unit. Complicated devices which provide for the storage of toothpaste also result in consequent deviation from ordinary or common toothbrush manufacture in order to produce them. Furthermore, unless such a device is simplified to the extreme, its relative cost of production, regarding the type of element here involved, is inordinate and the sales price thereof resultantly raised to an inordinate degree.

It is accordingly a primary object of the instant invention to provide a dispenser type of toothbrush which represents the essence of simplicity yet efficiently performs a two-fold purpose for which it was designed: firstly, as a toothbrush for ordinary home use, or secondly, an easily converted dispenser type of brush which can be conveniently carried on the person for use during the day.

It is another object of the invention to provide a brush of the described type which is little different from the present, or the common and ordinary type of toothbrush, with the exception of the addition of a unique type of bubble dispenser. In other words, the basic structure of the unit is substantially the same as the ordinary type of toothbrush; hence the unit of this invention can be readily adapted to manufacturing methods now commonly in use.

A further objective of the invention is the provision of a brush of the described type wherein the short passage from dispensing bubble to bristle area not only facilitates efficient discharge of paste but also permits easy cleaning of the article. It is to be here noted that although the dispenser bubble is large enough for a daily supply of toothpaste, a fresh supply can be easily added during use of the brush at home, or whenever convenient.

These objectives and further advantages of the instant

invention should be readily apparent. For example, the bubble dispenser herein described comprises an addition to the brush, and is not a necessary part needed for normal use as a toothbrush. Such bubble dispenser comes into play while it is used during the day and away from home. At home the brush can be used as a normal toothbrush, thereby rendering this brush a two-fold implement, as intimated in the foregoing, and not merely a travel toothbrush.

The invention will be described with more particular reference to the following drawings, wherein like numerals represent like parts, and wherein:

FIGURE 1 is a perspective view of the invention showing the relative positioning of the dispenser with respect to the bristle area;

FIGURE 2 is a plan view of the invention as it is shown in FIGURE 1;

FIGURE 3 is a side elevation view of the invention as shown in FIGURE 2;

FIGURE 4 is an enlarged section view taken on the line 4-4 of FIGURE 2;

FIGURE 5 is a section view taken on the line 5-5 of FIGURE 4; and

FIGURE 6 is a section view of the dispenser portion of the brush as it is shown in FIGURE 4.

Referring to these various figures, it is seen that the main body portion 1 of the brush is, as is usual in such devices, of elongated and rectangular configuration. One end of the implement is utilized as the brush handle, and at its opposite end the body portion 1 is provided with a series of suitable tufts 5, representing the brush area of the unit. As here shown and for exemplary purposes, 29 of such tufts are indicated (see FIGURE 2), one of the series of tufts being removed at the outlet leading from the toothpaste dispenser bubble.

The dispenser bubble is generally indicated at 8.

It will be observed that this container is relatively small and compact, with its side walls rather precisely matching the side walls of the handle element 1. The curved top of the bubble does not extend outwardly to any substantial extent, and hence this entire reservoir for the paste is practically unnoticeable and does not detract from the appearance of the entire toothbrush nor render the same, from a visual standpoint, substantially different from the ordinary type of brush familiar to the public. Thus, even aside from the mechanical advantages of the implement, the resulting appearance, from an eye-appeal standpoint, is pleasing.

As shown in FIGURES 4 and 6, the referred to bubble is comprised of two parallel side walls 10 and 11, and two end walls 12 and 14, the latter each being angled inwardly from top to bottom thereof. Top 9 and bottom 13 complete the bubble enclosure. The receptacle 8 fits within a groove formed in the body 1, such groove having side angles complementary to side walls 12 and 14 respectively. The accommodating groove in the handle portion thus represents a transverse cut across the width of the body 1 of the implement. The angled end walls 12 and 14 render fixation of the dispensing bubble 8 to the handle portion of the brush a very simplified procedure. When fabricated for removal, the inclined side walls also facilitate removal of the bubble.

As herein contemplated, the dispenser bubble 8 may be made of an appropriate and flexible synthetic resin or plastic, prefabricated so that it will fit precisely within the transverse cut or groove abovementioned, and with the side walls 10 and 11 closely approximating the overall width of the body portion 1. When located in the position shown, the dispenser 8 can be secured in place through the use of suitable adhesives, or if the handle of the implement is likewise fabricated of a similar plastic,

the bubble can be secured by usual and known heat bonding operations.

It will be noted that the top portion 9 of the bubble 8 is of rounded or concavo-convex configuration, thus lending a pleasing appearance to the assembly. Such shape further accommodates a reasonable amount of paste. It also facilitates dispersion of the paste into the bristle area simply by downward pressure upon the plastic dispenser bubble 8. As diagrammatically shown by the dotted line in FIGURE 4, depression of the top 9 has caused discharge of a part of the paste 25, the remainder being indicated by said line.

The dispenser bubble is also provided with an appropriate discharge tube or spout 15 integrally formed therewith, the latter being adapted for insertion into a complementary bore 18, formed in the longitudinal center line and penetrating the bristle area of the brush, as shown in FIGURES 3 and 4 respectively. The passageway 18 is horizontally disposed at the end accommodating the tubular member 15. At its opposite end, however, the same is curved upwardly or right angularly as indicated in these same two figures, thus forming an opening 20 on the center line of the body portion 1 of the unit. Referring to FIGURE 2, it is seen that this terminal opening 20 of the passageway 18 is located at a position where one of the bristles 5 has been removed. It should also be observed that the relative distance between the dispensing bubble 8 and the opening 20 is extremely short (approximately one-fifth of the length of the bristle area) and unobstructed and hence can be easily cleaned.

It is also to be here noted that it is not necessary that there be a multiplicity of passages in the brush area. It is contemplated that only one passage is necessary to effectively deliver paste to one portion of the bristle area, and in such a manner that the paste can readily work itself to the top of the bristles. The bubble dispenser, if designed along the lines herein indicated, is an effective instrument to assure, upon exertion of the proper amount of pressure, free flow of the paste 25 to the top of the area.

Means for refilling the dispensing bubble 8 at any time when desired is provided in the form of the threaded element or plug 28, which in turn is provided with a knurled head portion 30 so that it can be easily grasped, removed and replaced. Suitable threads are provided in the body portion 1 for this purpose. Such threads and the aperture to accommodate the plug 28 can be of a dimension and pitch to match the pitch or threads found in the usual type of toothpaste containers. Hence, when refilling is desired the cap 30 is removed in obvious fashion, the toothpaste tube itself threaded into the same threaded aperture and squeezed sufficiently to fill the bubble dispenser 8. The plug is then replaced in an obvious manner.

As an alternate embodiment of the invention, it may be desirable to so form the plug assembly that the plug itself forms a threaded attachment to or interconnection with the base or bottom 13 of the bubble, in which case the latter need not be permanently secured as by adhesive or bonding, as indicated above, or by any other appropriate method. To this end the base 13 is made sufficiently thick to accommodate a suitable threaded aperture for the plug, such threads obviously matching the threads of the plug element. In such instance the base of the plastic and flexible bubble is preferably made of a harder material, so that the plug, on screwing it into such complementary opening, will securely affix the bubble in the position indicated in, for example, FIGURE 3.

As an alternate to this securing method, the interior of the bubble can be fitted with a bushing, as indicated in dotted line at 32, of suitable thickness, i.e., that thickness sufficient to also accommodate the required number of threads in an appropriate aperture formed therein.

The bushing is preferably of a harder material than that forming at least the top 8 of the bubble. In either case the plug 28 is also desirably fashioned from a material harder than the flexible material, or at least the flexible top thereof.

In any event, if either method is utilized to secure the bubble in the indicated position, it is to be appreciated that the angled side walls 12 and 14 more or less lock the bubble in that position; also the discharge tube 15, in a sense, aids in locking the plastic container into place, for when this tube is inserted in the opening 13, side movement of the bubble is prevented. Hence, when the plug is unscrewed for removal, or reversely threaded for replacement, such movements will not displace to one side or angle the plastic container from its operative position.

Accordingly, when thusly fashioned, the plastic container or bubble 8 can be easily removed and just as easily replaced. The result is that with its removal the toothbrush becomes a conventional and ordinary toothbrush which may be used in the home with the addition of paste on the bristles in the usual manner.

However, if it is desired to carry the brush in a purse or on the person, the bubble may be filled with paste and quickly secured to the base 1 in the manner outlined in the foregoing.

It is contemplated that when the article is used outside of the home, and for example, carried in the pocket, it is placed in a suitable case of approximately pencil size and equipped with a pocket clip for retention purposes.

It is obvious that other expedients and alternates may be incorporated in this assembly without departing from the scope of the invention, the invention being limited only in those respects as set forth in the claim appended hereto.

I claim:

In a toothbrush assembly having a smooth and unobstructed handle and a brush element at one end thereof, a readily removable means attached to said handle for dispensing toothpaste to said brush element, said means comprising a deformable container of resilient material positioned adjacent said brush element and inwardly of said handle, said handle having a transverse slot therein provided with opposed, outwardly flared sides for ease of removal of the container, said container being of about the same width as said handle and the ends thereof respectively matching said flared sides of said transverse slot, a longitudinal passageway in said handle and in axial alignment therewith at the inner side of said brush communicating at one end with said slot and at the other end terminating in an opening discharging into said brush element at the near side of said brush element, said passageway being about one-fifth the length of said bristle area, a centrally disposed and longitudinally aligned spout at one end of said container inserted in said passageway, a threaded bore in the lower side of said handle positioned to open into said container for filling said container, and means to optionally lock said container in said slot, said last-named means comprising an opening provided with a surrounding threaded brushing in the base of said container, and a threaded plug engaging said threaded bore and said threaded brushing, said threaded bore and said threaded brushing being in axial alignment and providing a conduit for refilling of said container with toothpaste.

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