

Sept. 17, 1963

L. J. WOODROW

3,103,935

DISPOSABLE TOOTHBRUSH

Filed July 13, 1960

2 Sheets-Sheet 1

Fig. 1

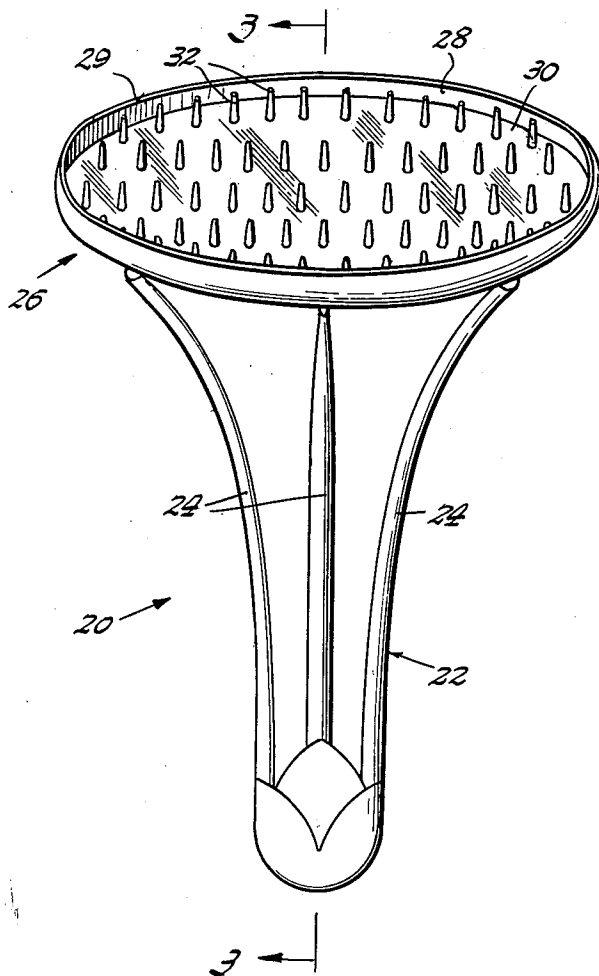
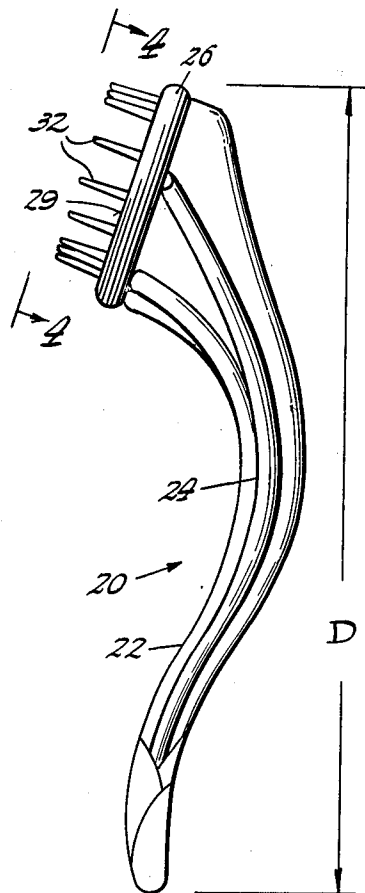


Fig. 2



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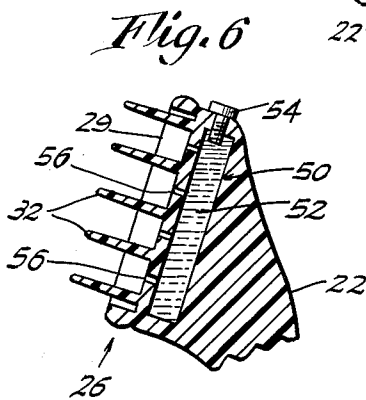
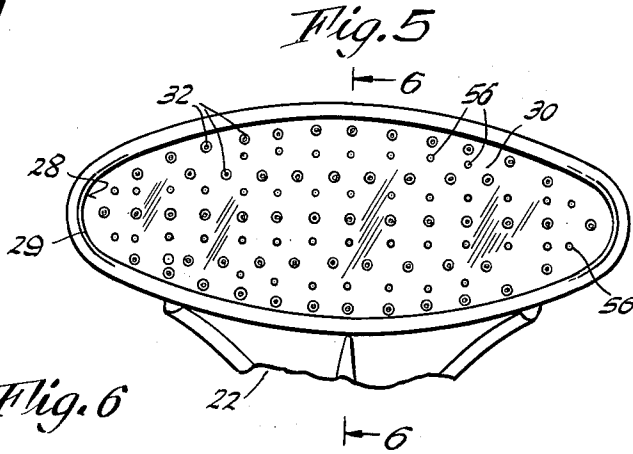
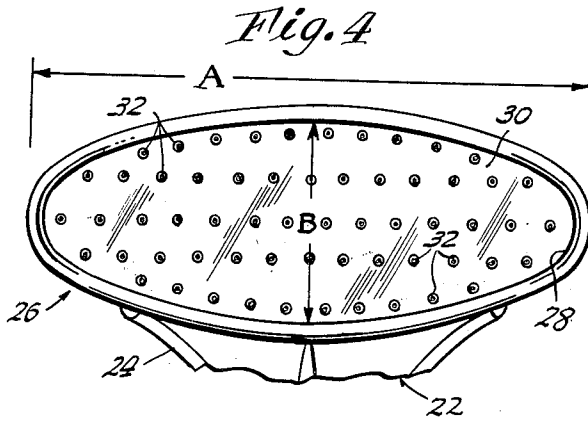
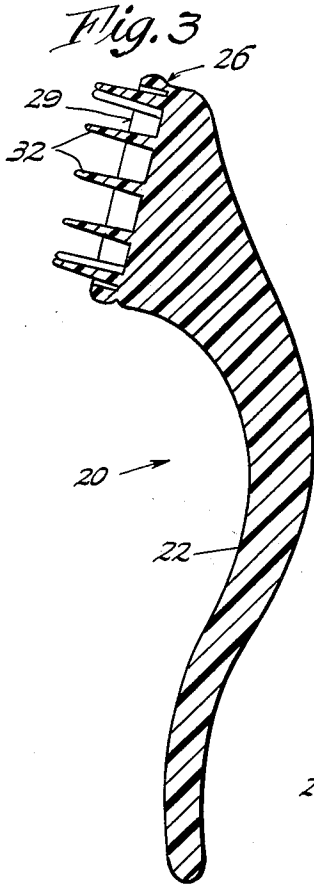
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DISPOSABLE TOOTHBRUSH

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1 Claim. (Cl. 132-84)

This invention relates to oral hygiene, and more particularly to the cleansing of the teeth and massaging of the gums to promote healthfulness and prevent the development of caries and other infection and unpleasant breath.

It is well known that, although tooth brushes of various kinds and a variety of dentifrices are available to all at relatively low cost, still it remains for the individual to make proper use of them, with the unfortunate result that proper tooth cleansing is practiced by a relatively few of the habitually fastidious; and even among them the practice is not as complete as proper care demands. This is so because conventional devices for brushing the teeth do not lend themselves to being available for use at all times when they are needed.

In order to correct this condition, the manufacturers of dentifrices in recent times have called attention to research developments alleged to have incorporated in dentifrices not only bacteria-destroying substances but also film forming or other safeguards which eliminate the necessity for brushing the teeth at times other than when the accessories therefor are available in the privacy of one's abode. Such claims are possibly open to skepticism; and they may be even conducive to carelessness with detrimental results to the otherwise cautious individual.

It is, therefore, a principal object of the present invention to provide a means at any time available to the individual for practicing proper oral hygiene insofar as careful tooth brushing and gum massaging are concerned.

Another object of the invention is to make available to the public at relatively low cost a highly sanitary and convenient device to carry in the pocket or purse, or to find on sale in public washrooms and other places through the medium of vending machines, whereby the need for brushing the teeth can be satisfied according to desire or habit.

A further object of the invention is to promote sanitation by the provision of a tooth-brushing device so fabricated and so inexpensive that it should be, and properly can be, used for one brushing only and disposed of without creating the feeling of extravagance, thereby encouraging proper hygiene.

To this end, and in its broader aspects, the present invention contemplates a disposable tooth-brush device adapted for one-time use. More specifically, the invention contemplates a molded plastic unit of small over-all size comprising a body portion formed as a finger grip and a head portion formed with spaced-apart protuberances forming the working surface of a dentifrice applicator and tooth brush, the unit being fabricated so as to be substantially unfit for use a second time and thus necessarily to be disposed of after being used one time only and, hence, promoting sanitation.

The invention further contemplates that the device be a self-contained unit comprising a body or finger grip portion, a cleansing and massaging head portion, and provided with a supply of dentifrice rendered active by hydration or by pressure for application by the head portion to the surface to be cleansed.

Other objects of, and the advantages provided by the present invention, will become apparent from the detailed description which follows.

In the accompanying drawings, the invention has been shown merely by way of example and in its preferred form, and many modifications and variations thereof, and

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in its mode of application, may be made without departing from its spirit. It is to be understood, therefore, that the scope of the invention is not limited to any particular form or embodiment except insofar as such limitations may be set forth in the appended claim.

Referring to the drawings, each of which is on an enlarged scale for the sake of clarity,

FIG. 1 is a front elevation of the device;

FIG. 2 is a side elevation thereof;

FIG. 3 is a vertical section, taken on the line 3-3 of FIG. 1, looking in the direction of the arrows;

FIG. 4 is a view, taken on the line 4-4 of FIG. 2, looking in the direction of the arrows, the body portion of the device being partly broken away;

FIG. 5 is a view similar to that of FIG. 4, showing a modified form of the head portion of the device; and

FIG. 6 is a vertical section, taken on the line 6-6 of FIG. 5, looking in the direction of the arrows.

Referring to FIGS. 1 to 4, the tooth brushing and massaging device 20 comprises two main portions, the body or finger grip 22 and the head or applicator 26. As already stated, the drawings show the structure in enlargement for the sake of clarity. Actually, the length of the device as marked off by the line D in FIG. 2 is preferably about one and one-half inches, and the head portion along its major axis marked off by the line A in FIG. 4 is about one inch, while along its minor axis, marked off by the line B in FIG. 4, the dimension is about three-eighths of an inch. The body 22 is shown as slightly arcuated in shape, tapered toward its free end, and formed with flutes 24 which provide gripping surfaces and rigidity, but the body may be formed otherwise to provide a grip, or it may be entirely smooth if desired.

The head 26 is oval or of somewhat flattened elliptical shape as best seen in FIG. 4, but it is pointed out that its shape may be varied to provide for ease and comfort for the user on the one hand and on the other to render it functionally efficient. This juncture of the body 22 and head 26 is in the form of a thickened, rounded rim 28 extending outward beyond a flat base 30 and serves the dual purpose of reinforcing or lending rigidity to the structure of the device and providing a means for massaging the gums as the teeth are being brushed. Formed on the base 30 and extending therefrom to project beyond the plane of the free edge 29 of the rim 28 are a plurality of closely spaced-apart protuberances in the form of teeth 32, which are flexible but at the same time of sufficient rigidity pick-type teeth to provide a working surface for removing food particles and foreign matter from the teeth and from crevices and spaces between the teeth.

The teeth 32, on the base 30, or both, are preferably coated with a suitable dentifrice (not necessary to indicate) which is applied and adhered thereto, either by drying it thereon or which, by virtue of its character and consistency, is self-adhering in its applied condition. The dentifrice, like any of the well-known types, is rendered active by hydration in the presence of saliva and is thoroughly applied to the surface to be cleansed by the applicator during the brushing operation with the device.

As stated, the device 20 is made of a molded plastic material, such as polyethylene, and in the form of a self-contained unit, preferably complete with a sufficient supply of dentifrice for one cleansing operation. However, since one of the objects of the invention is to provide the utmost in sanitation, it is within the scope of the invention that the unit can be supplied for home use where a particular favored dentifrice is separately available and can be applied at the time of use, the device being discarded thereafter. In either case, it is intended that the

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device 20, or the applicator portion thereof, be made inexpensively and of material of such character or of such fine gauge that, as a result of one usage, it is rendered substantially unfit for use another time, thus prompting its disposal.

A modification of the device 20 is shown in FIGS. 5 and 6, wherein there is formed in the flexible body 22 a reservoir or chamber 50 adapted to contain either a liquid, paste or powdered dentifrice 52. By way of example, the chamber 50 may be filled through an aperture in the body wall closed by a plug 54, or the dentifrice may be placed in the chamber 50 by injection or otherwise in the manufacture of the device. The base 30 forms one wall of the chamber 50 and is formed with apertures 56 disposed between the teeth 32. The base 30 is so thin and flexible that it is moved inward under tooth-brushing pressure and, together with the collapsing of the body 22, forces the dentifrice in the chamber 50 to permeate through the aperture 56 into the area of the teeth 32, where it hydrates and functions in the usual manner.

At the expense of possibly undue repetition, it is pointed out that the small plastic device 20 may be fabricated by well known methods and equipment on a mass production basis and at very low cost. It may be used at home, or conveniently carried in a purse or pocket, or it may be readily available from an automatic vending machine. The device may be packed separately in glassine or the like envelopes, and sold individually or in multiples. In use, it assures a highly sanitary, convenient and unobjectionable means for preserving and promoting the habit of good oral hygiene that has not been available heretofore. It is a noteworthy advance in the art and its widespread use will promote and improve the dental health of the public.

Having thus described my invention, what is claimed is:

An improved readily disposable toothbrushing device adapted to be rendered expendable after one brushing comprising:

- (a) a completely integrally formed unit of molded plastic,
- (b) said unit including an arcuately shaped handle portion, and

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(c) a connected oval shaped cleaning and massaging head disposed at an angle with respect to said handle portion,

(d) said handle portion tapering inwardly towards its free end and flaring outwardly towards its connection to said head,

(e) and said handle portion having integrally formed thereon a plurality of longitudinally extending protruding ribs to enhance the gripping thereof,

(f) said head having a flat base portion,

(g) a thickened rounded reinforcing and massaging rim circumscribing the periphery of said base portion,

(h) said rim extending outwardly of said base portion, and

(i) a plurality of spaced flexible pick-type teeth of uniform height formed integrally with and extending forwardly of said base portion,

(j) said teeth being all disposed within the periphery of said rim and extending beyond the rim of said base portion,

(k) said teeth being sufficiently rigid to provide a working surface for removing particles from crevices between one's teeth,

(l) and a layer of dentifrice adapted to be rendered active by hydration coating the outer surface of each of said teeth.

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