Nov. 25, 1930. C. M. McARTHUR 1,783,151

TOOTHBRUSH

Filed Nov. 9, 1929

Fig. 7

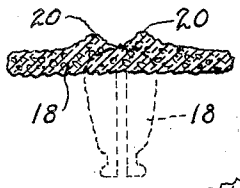


Fig. 1

Fig. 5

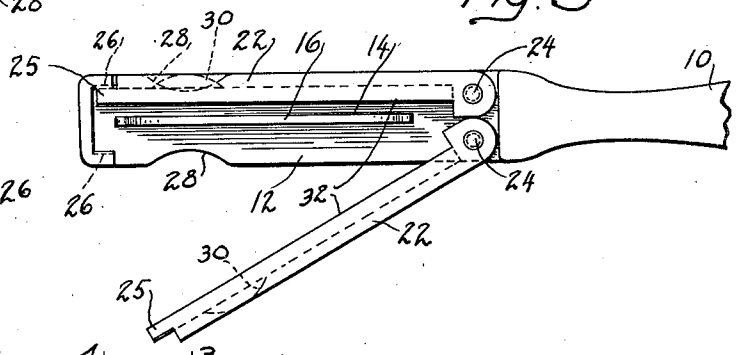
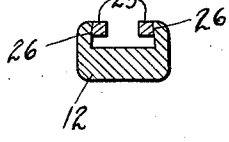


Fig. 4



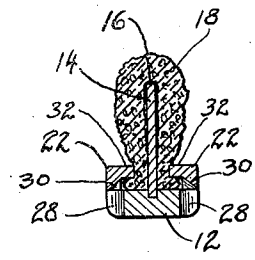


Fig. 3

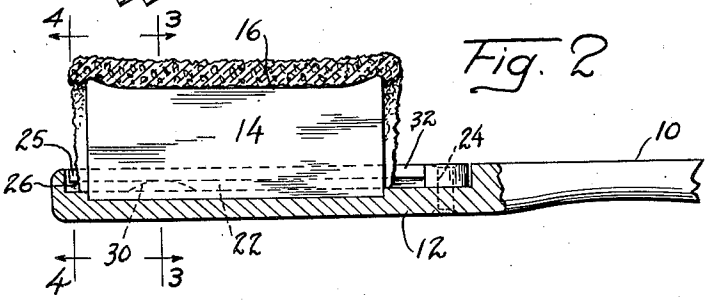


Fig. 2

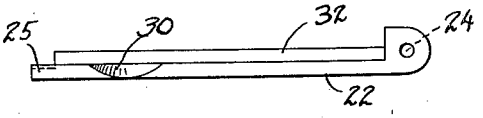


Fig. 6

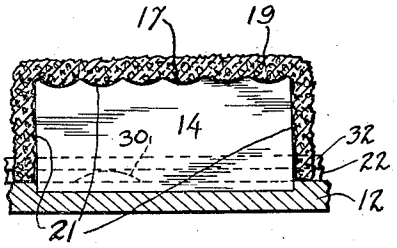


Fig. 8

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UNITED STATES PATENT OFFICE

CLARENCE M. McARTHUR, OF DETROIT, MICHIGAN

TOOTHBRUSH

Application filed November 9, 1929. Serial No. 406,098.

My invention relates to an improved tooth brush.

The object is to provide a tooth brush which is thoroughly sanitary, which will not injure the teeth or gums, and which is particularly effective for the purpose for which it is intended to be used.

One important object of my invention is the provision of a tooth brush having an improved cleaning, or brush element, which, after use, may be removed and replaced by a new element of the same character. The construction is such that the cleaning element or brush portion is held securely in position for use but is readily removable and replaceable by another one. The cleaning element is held in position by an arrangement which is not only of simple construction and easy to operate but is also readily accessible for cleaning and sterilization.

The cleaning element itself is simple and inexpensive and it is my intention to provide cleaning elements for replacement whereby, after use, a cleaning element may be thrown away and replaced with a new sterilized one. My cleaning element also includes important and novel characteristics. It is thoroughly efficient for cleaning and it is of such a kind that it will not injure the soft tissues of the mouth. It is adapted to readily carry a suitable antiseptic and replaceable elements may be provided with the desired antiseptic and in any quantity desired. The cleaning element is so supported as to be more efficiently applied to the teeth to clean them.

Various other important features of my invention will appear from the following description, appended claims, and accompanying drawing wherein:

Fig. 1 is a perspective of my improved tooth brush showing the brush partly broken away,

Fig. 2 is a longitudinally sectional view through the brush holding portion illustrated in Fig. 1,

Fig. 3 is a vertical cross sectional view taken on line 3—3 of Fig. 2,

Fig. 4 is a vertical cross sectional view taken on line 4—4 of Fig. 2,

Fig. 5 is a plan of the head portion of my improved brush,

Fig. 6 is an elevation of the under side of one of the retaining members, and

Fig. 7 is an end elevation of the brush element itself,

Fig. 8 is a longitudinal section showing a modified form of construction.

It is a purpose of my invention to provide a tooth brush which carries a replaceable brush portion, or cleaning element, which is readily secured in position to effectively function and which is easily replaced by a similar one. In the embodiment shown in the drawing I have illustrated a tooth brush having a handle portion 10 provided with a brush holding or head portion 12 which carries a perpendicularly projecting lip 14. This lip is shown in Figs. 1 and 2 as having a slightly concave outer edge 16. In the modification of Fig. 8 it is shown as having a toothed or corrugated outer edge 17. This lip may be rigid and substantially inflexible or it may be resilient and flexible. It may be of any desired height and length.

The brush element 18 is here illustrated as being formed of suitable sponge rubber and may have a contour wherein two spaced apart parallel ridges 20 are arranged to form opposite corners of the outer face when the element is folded over the rib 14 in the manner shown in Figs. 1 and 3.

The head portion 12 carries two retaining arms 22. Each arm is pivoted at 24 to the head portion whereby it may be swung outwardly to permit the insertion or removal of the brush element 18 or moved inwardly and secured detachably in place to hold the brush element in position. Each position of the arm is shown in Fig. 5. Each arm is provided with a reduced outer end portion 25 and the outer end of the head portion of the brush is undercut as at 26 to receive the portions 25 of the arms to retain them in place. To facilitate engagement of the arms to swing them outwardly from the secured position the head portion of the brush is provided with notches 28 and each arm is provided with an undercut 30 which registers with the notch. Each arm is angular in the cross section so that it has a

flange portion 32 which overhangs the base 12.

The brush portion 18 illustrated in Figs. 1 to 7 inclusive is substantially flat and is folded over the lip 14 as shown in Figs. 1 and 3. As a matter of ready insertion it is preferably placed against one side of the lip portion 14 with the edge resting upon the base 12 and the adjacent arm 22 is then swung into position with the portion 25 engaging in the notch 26 of the head. The arm urges the adjacent marginal portion of the brush element 18 against the base in the manner shown in Fig. 3. The brush element is then completely folded over the lip 14 and the other arm is similarly secured in place. The brush element is now held securely in position as shown in Fig. 1.

The brush element being preferably formed of sponge rubber is highly porous and readily absorbs any suitable antiseptic with which it may be desired to impregnate the same so that the brush element may be used as a carrier for a cleaning composition for the teeth, thus obviating the necessity of employing a cleaning composition as it is used at the present time. The porous character of the sponge rubber also provides innumerable small sponge rubber projections which engage in the spaces between the teeth to clean them. The arrangement of the securing means is very simple and the entire frame structure may well be formed of a suitable celluloid or other hard composition material which may be readily cleaned and will not collect dirt or germs.

In Fig. 8 I have shown a slightly modified form wherein the lip portion 14 has a notched outer edge 17 over which a sponge rubber cleaning element 19 is received. This element 19 is formed with a groove 21, shown as closed at both ends, which is received over the lip 14 and the base of the groove is shaped to engage the notched edge of the lip to position the same thereon.

What I claim is:

1. A tooth brush comprising a handle having a brush holding head provided with a lip portion, an arm pivoted to the head on each side of the lip portion and adapted to be detachably engaged with said head, a brush element folded over said lip portion and adapted to be held in place by said arms.

2. A tooth brush comprising, in combination, a handle having a brush holding part including a projecting lip, a pair of flexible arms pivoted on each side of said lip adjacent one extremity thereof and adapted to extend parallel thereto to secure a brushing element over said lip, the opposite extremity of said arms including means cooperating with said brush holding part to detachably lock said arms in position.

3. A tooth brush including, in combination, a brush holding base portion, a projecting lip extending away from said base intermediate the sides thereof, an arm pivoted to said base at one extremity thereof on each side of said lip and extending parallel thereto, and projecting lugs at the opposite extremities of each of said arms cooperating with said base to lock said arm in a parallel position, said arms being flexible to permit release of said lug from the base.

In testimony whereof, I, CLARENCE M. MCARTHUR, sign this specification.

CLARENCE M. McARTHUR.