

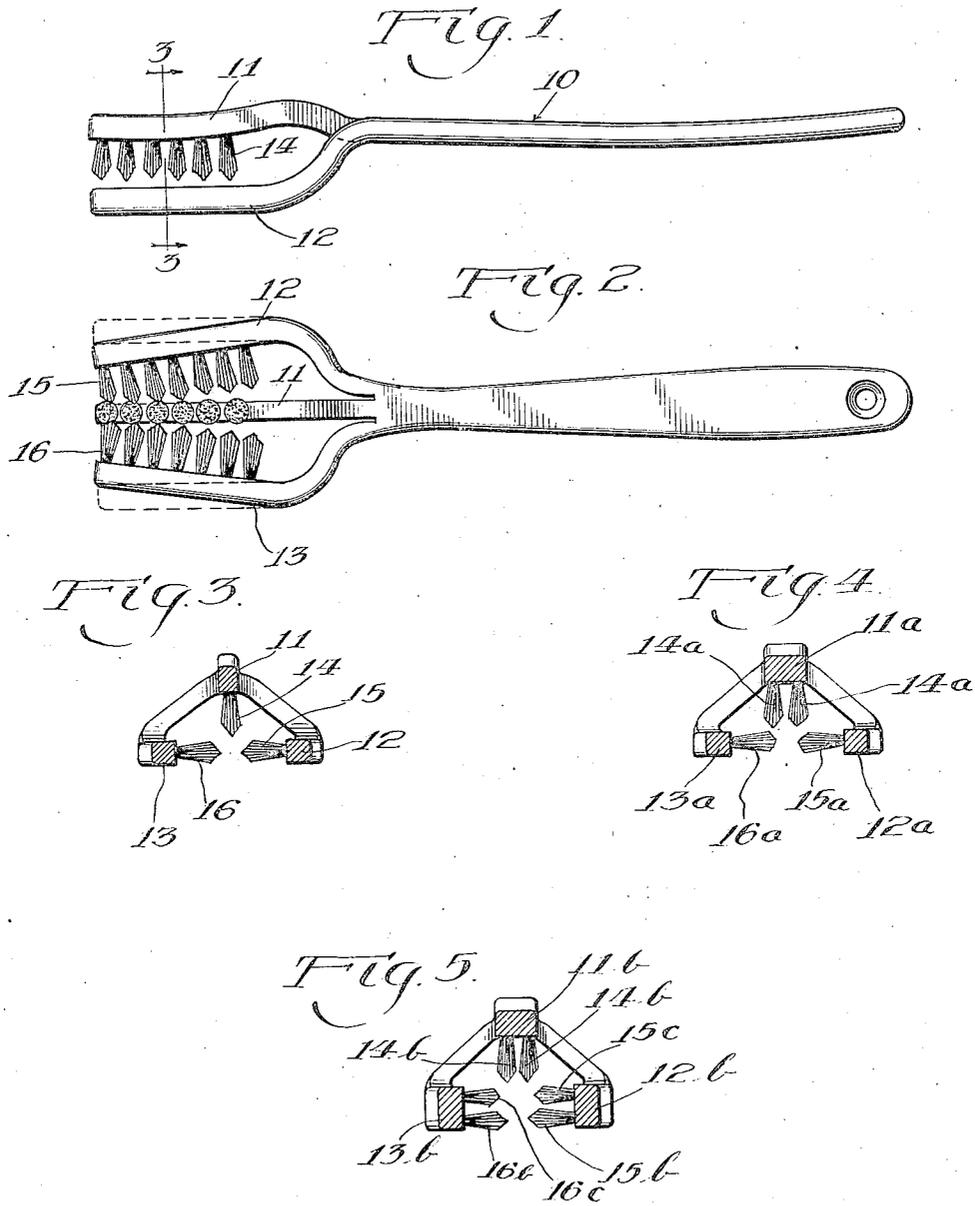
May 9, 1933.

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1,908,509

TOOTHBRUSH

Filed Nov. 8, 1930



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## UNITED STATES PATENT OFFICE

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## TOOTHBRUSH

Application filed November 8, 1930. Serial No. 494,421.

The invention relates to tooth brushes, and has as its primary object the provision of a tooth brush which insures that substantially all of the surfaces of the teeth will be brushed and cleansed when it is properly used.

A particular object of the invention is to provide an improved tooth brush which will enable one to brush one's teeth in a minimum of time and with relatively little effort.

Tooth brushes embodying the invention preferably comprise a handle from which three relatively flexible arms project. Each of the arms is provided with one or more rows of bristles, the construction being such that the outer, inner and top surfaces of a tooth may be brushed at the same time. The arms which hold the bristles for brushing the inner and outer surfaces of the tooth are preferably constructed so that they may flex when the bristles are applied to the teeth and hold the tips of one set of bristles substantially parallel with the tips of the oppositely disposed set of bristles. This insures that all of the bristles will engage the teeth.

Other objects and advantages of the invention will become apparent as the following detailed description progresses, reference being had to the accompanying drawing, wherein

Figure 1 is an enlarged side elevation of a tooth brush which embodies the invention.

Fig. 2 is a bottom view of the tooth brush shown in Fig. 1.

Fig. 3 is a section taken on line 3—3 of Fig. 1.

Fig. 4 is a transverse section taken through a tooth brush which embodies another form of the invention, and

Fig. 5 is a transverse section taken through a tooth brush which embodies still another form of the invention.

Referring for the present to Figs. 1 to 3, inclusive, wherein enlarged views of a tooth brush embodying the invention are shown, the reference character 10 designates a handle which is provided with forwardly extending arms 11, 12 and 13. The arms 11, 12 and 13 are preferably formed integral with the handle 10, but it is readily understood

that they may be attached thereto by any suitable means (not shown), if it is so desired. The arms are preferably yielding and are preferably constructed from celluloid, rubber, a phenolic condensation product, or any equivalent plastic material.

The arms 11, 12 and 13 are provided with rows of bristles 14, 15 and 16, respectively, there being a single row of bristles on each of the arms. The arms 12 and 13 and their respective bristles are disposed in opposed relation, as best shown in Fig. 3, the bristles 14 being disposed at substantially right angles to the bristles 15 and 16. As best shown in Fig. 2, the arms 12 and 13 converge toward their free ends.

It will be readily understood that the arms 11, 12 and 13 may be inserted in one's mouth to brush the molars, the arms being inserted so that the bristles 15 and 16 engage the inner and outer surfaces of the teeth and the bristles 14 engage the occlusal or top surfaces of the teeth. The brush may then be reciprocated so that the several rows of bristles will brush all of the exposed surfaces of the teeth. Obviously, the arms 12 and 13 may spring into the positions wherein they are shown in dotted lines in Fig. 2, so that substantially all of the bristles 15 and 16 will engage the inner and outer surfaces of the teeth.

From the above description, it will be readily understood that the improved brush may be employed to simultaneously cleanse the occlusal, lingual and buccal surfaces of the molars and that it may be similarly employed to brush the lingual and labial surfaces of the other teeth.

A tooth brush embodying another form of the invention is shown in Fig. 4. This brush preferably comprises a handle (not shown) which is substantially identical with the above described handle 10 and is provided with arms 11a, 12a and 13a, the arms 11a, 12a and 13a being provided with rows of bristles 14a, 15a and 16a, respectively. The bristles 14a, 15a and 16a are arranged in the same manner as the above mentioned bristles 14, 15 and 16, respectively, the only difference being that two rows of bristles 14a are provided in place of the single row

of bristles 14, shown in Figs. 1 to 3, inclusive. The arms 11*a*, 12*a* and 13*a* are preferably flexible so that they may assume the same positions as the arms 11, 12 and 13 assume when they are applied to the teeth.

Still another form of the invention is illustrated in Fig. 5, wherein a tooth brush is shown which comprises a handle (not shown) substantially identical with the above described handle 10. The brush shown in Fig. 5 comprises flexible arms 11*b*, 12*b* and 13*b* which are provided with inwardly extending bristles arranged in much the same manner as the bristles shown in Figs. 1 to 3, inclusive. Two rows of bristles 14*b* are provided upon the arm 11*b*. The arm 13*b* has two rows of bristles 16*b* and 16*c*. The arm 12*b* has two rows of bristles 15*b* and 15*c*. The bristles 15*c* and 16*c* are engageable with the upper portions of the side surfaces of a tooth and are preferably shorter than the bristles 15*b* and 16*b*. This construction is particularly advantageous when the brush is employed to clean the molars, as these teeth are narrower adjacent the gums than they are adjacent their occlusal surfaces and, therefore, the bristles 15*b* and 16*b* may project beyond the bristles 15*c* and 16*c* to engage the narrower portions of the teeth adjacent the gums.

While I have shown and described certain embodiments of my invention, it is to be understood that it is capable of many modifications. Changes, therefore, in the construction and arrangement may be made without departing from the spirit and scope of the invention as disclosed in the appended claim, in which it is my intention to claim all novelty inherent in my invention as broadly as possible, in view of the prior art.

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

A tooth brush comprising: a handle portion formed of flexible material; three bristle-supporting arms formed integral with the handle portion, two of said arms being in opposed relationship with their free ends normally toed inwardly and adapted to flex outwardly when engaging a wide tooth, and a set of bristles on each of said arms, said bristles being engageable simultaneously with a tooth and one set of said bristles having their brushing ends disposed to face the brushing ends of another set of bristles.

In testimony whereof, I hereunto affix my name, this 4th day of November, 1930.

WALTER K. DAVIS.