May 19, 1931. R. M. WITHYCOMBE 1,806,436

MANUFACTURE OF BRUSHES

Filed Dec. 12, 1928

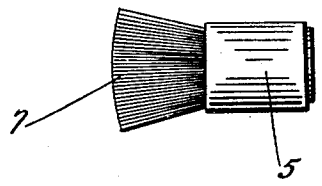


Fig.1.

Fig.2.

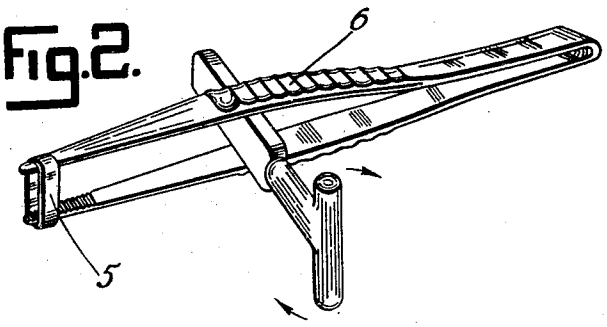


Fig.3.

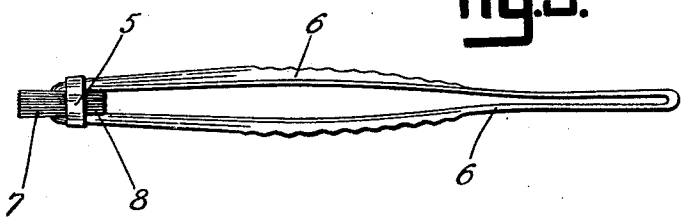
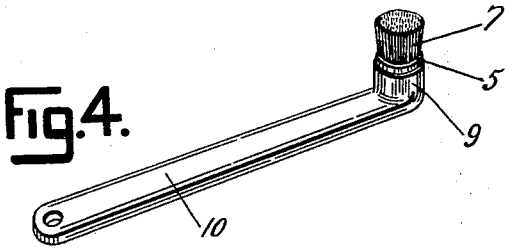


Fig.4.



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UNITED STATES PATENT OFFICE

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MANUFACTURE OF BRUSHES

Application filed December 12, 1928, Serial No. 325,573, and in Australia December 23, 1928.

This invention relates to improvements in the manufacture of brushes, but is more particularly directed to tooth brushes.

An object of the present invention is to produce a brush which also acts as a polisher.

A further object is to devise a brush which may be sterilized preferably by immersion in boiling water.

A still further object is to provide a tooth brush, the fibres of which may be wriggled between the teeth without the danger of puncturing the gums or scratching the neck of the teeth.

For the purpose of this specification I will describe my invention as relating to a tooth brush, but it is to be understood that the invention is not limited thereto.

According to the invention I construct a brush unit consisting of tufts or small bundles preferably of millet, or other vegetable fibre, or pith, the ends of which may be rounded and smoothed with an abrasive, such as sand paper, or I may burn the ends and so obtain a smooth hard surface which will withstand friction and prevent moisture being drawn into the fibre.

In the production of the brush unit or polisher a small bundle of the fibre or like material is passed into a rubber tube whilst the latter is extended by a suitable expanding tool. The rubber tube forms a finger grip, as well as a means for retaining the fibres together, leaving exposed a portion of the bundle. This rubber bound bundle termed a unit, may be used independently, but preferably is detachably held in a socket which may be formed at about right angles in a metal or other handle.

The handle is preferably of metal covered with a vulcanized substance so that it can be boiled and left to dry without danger of rusting, and so that metallic contact with the mouth is avoided, or it may be of vulcanite or a composition capable of sterilization in any suitable manner. The handle is stamped or moulded and is provided with a socket at one end into which the rubber bound bundle is fitted, the rubber band giving sufficient frictional grip for the purpose.

A brush is thus provided which may be boiled or readily disinfected, and which when used as a tooth brush is adapted to clean and massage the gums safely, as well as effectively clean the teeth in every part. I preferably provide a test tube in which the brush may be conveniently sterilized and retained when not in use.

But in order that the invention may be more readily understood, reference will now be made to the accompanying drawings wherein,

Figure 1 is a perspective view of one of my improved brush units.

Figure 2 is a perspective view showing a suitable means for expanding a rubber tube prior to inserting the tuft or bundle therein.

Figure 3 is an elevational view showing the expanded tube with the bundle placed therein.

Figure 4 is a perspective view showing one of the brush units mounted in a suitable handle.

In constructing the brush unit a small section of good quality rubber tubing 5 is expanded by any suitable means, such as a pair of round nose tweezers 6 adapted to be forced apart, the millet, vegetable fibre, pith or like material is then bunched into bundles 7 and is inserted in the expanded tube 5.

After the bundles 7 have been inserted the expanding tool is withdrawn allowing the rubber to contract upon the bundle 7 and hold it firmly under compression. The protruding portion 8 is cut off producing a brush unit as illustrated in Figure 1.

The ends of the millet, fibre, pith or like material may be rounded off or shaped in any desired manner as by rubbing them upon sand paper. In some cases I may burn the ends of the fibre or the like to obtain a hard surface and more or less seal the pores thereof. In addition, the burning produces a smooth hard surface which will withstand friction and prevent moisture being drawn into the fibre.

In the case of large brushes such as paint brushes, or shaving brushes, the rubber portion 5 may be of such a length as to serve as a handle; or the brush unit may be mounted in a suitable cylindrical handle, but in the case of tooth brushes the brush unit is preferably mounted in a handle having a socket 9

disposed at an angle to the handle portion 10.

The handle 10 and socket 9 are preferably made from metal coated with a vulcanite substance so that the handle can be boiled and left to dry without danger of rusting.

The rubber tubing enclosing the fibre or millet or like bundle serves a further purpose of holding the brush unit in the socket 9, owing to the frictional grip between the rubber and the socket. The brush unit is further retained in the socket by the expansion brought about by placing the brush in water.

I claim:

1. A brush comprising a small bundle of fiber; a handle having a socket to removably receive one end of said bundle of fiber; and resilient means surrounding said end and maintaining said bundle under compression and itself held under compression by the wall of said socket for removably retaining said end of said bundle in said socket.

2. A brush comprising a handle provided with a socket; a bundle of fiber having one end thereof disposed in said socket; and resilient means interposed between said end of said bundle and the wall of said socket, said resilient means holding said bundle under compression and having its outer surface expanding against said wall for retaining said end of said bundle in said socket.

3. A brush comprising in combination a tuft or small bundle of fiber; a rubber tube surrounding a portion of said bundle under tension and exerting pressure on said bundle to maintain the fiber in position; and a handle having a socket in which said rubber tube is disposed, said tube frictionally engaging the wall of said socket for retaining said bundle therein.

4. A tooth brush comprising an elongated handle provided with a socket at right angles thereto; a bundle of fiber; and a rubber tube whose inner surface is under tension around said bundle of fiber and whose outer surface is under compression within said socket.

In testimony whereof I have hereunto set my hand.

ROBERT MORSE WITHYCOMBE.