Aug. 5, 1941. A. J. PANDIYAN 2,251,853

TOOTHBRUSH

Filed Aug. 24, 1939

Fig. 1.

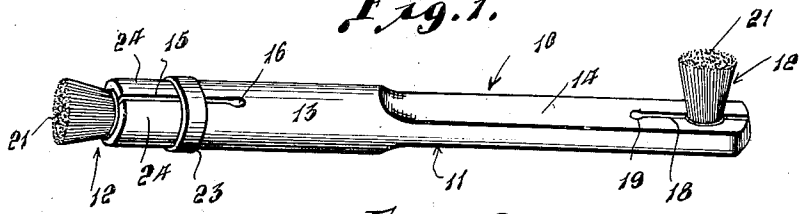


Fig. 2.

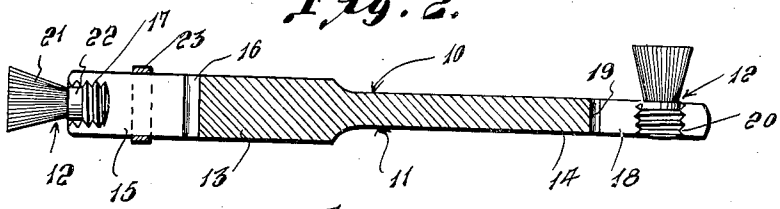


Fig. 3.

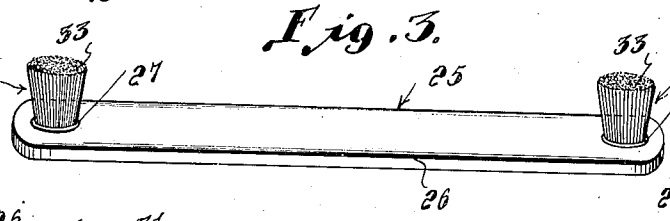


Fig. 5.

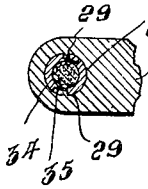


Fig. 6.

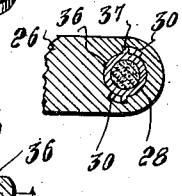


Fig. 4.

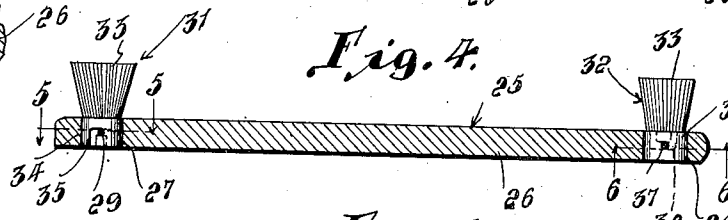
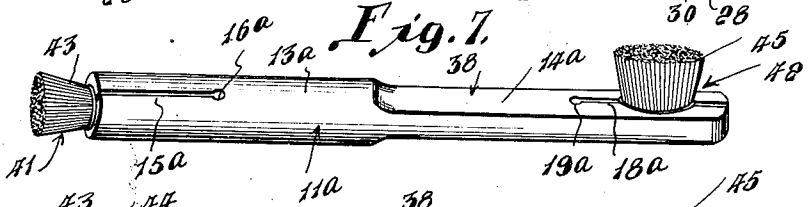


Fig. 7.



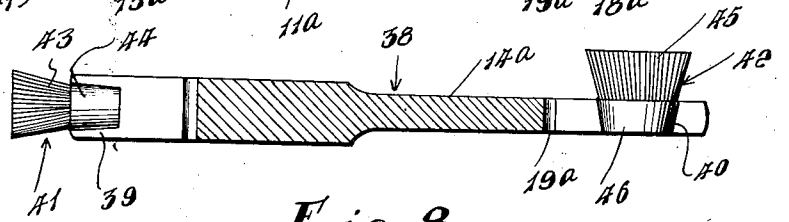


Fig. 8.

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2,251,853

TOOTHBRUSH

Abraham Jothy Pandiyan, Tanjore, Madras, India

Application August 24, 1939, Serial No. 291,787
In Ceylon September 14, 1938

3 Claims. (Cl. 15—176)

This invention relates, as hereinafter described, to tooth-brushes and has for its object to provide a tooth-brush wherein the sets of bristles are detachably fitted into the handle.

Another object of the invention is to provide a more sanitary tooth-brush than the ones known at present, by rendering it possible to discard the bristle part of the brush after each use.

A third object of the invention is to provide a comparatively cheap tooth-brush which will be within the means of poor people also, even if the bristle part is discarded after each use.

Other objects will be revealed in the description following, of the invention.

Tooth-brushes comprising two separate parts which are detachably fitted into each other are known. The said parts are the handle and the head or bristles-carrying part. The latter comprises a base, carrier or backing into which sets of bristles are permanently fixed. Hence, if it is desired to renew the bristles when they become unsuitable for use the entire bristle-head is detached from the handle and a fresh bristle head is inserted in its place. The handle being intended to be permanently kept, it is made of comparatively costlier material and is ornamented with engravings of precious metal or the like.

It will be realised that in the above-mentioned type of tooth-brushes, an appreciable amount of saving can be effected if instead of discarding the entire bristle-head, the bristles alone are discarded. This is possible only if the sets of bristles are detachably fitted directly into the handle instead of there being a separate bristle-head fixed to the handle.

A proposal has been made to construct a tooth-brush wherein a set of bristles is mounted helically on a twisted wire axis and the ends of the wire are fitted to a mounting provided on the handle. A separate backing prevents rotation of the bristle-fitting when the brush is in use. A brush of this type consists of five separate parts, i. e., the handle, the mounting, the backing, the twisted wire and the bristles. In contradistinction to what is known and having in view the objects mentioned above, the tooth-brush according to my invention is characterised by that the tuft of bristles is detachably fitted into the handle, the lower end of the tuft being adapted to be a close fit into a corresponding slot or groove provided on the handle. To facilitate the said adaptation the lower end of the tuft of bristles is made solid either by dipping it into a setting agent or by utilizing a piece of fibrous wood one of whose sides is mechanically treated in any known manner so as to form a number of bristles up to a certain depth, the remaining portion being left solid. The said solid end of the tuft is given a shape and size corresponding to those of the slot or groove provided therefor in the handle of the brush. Means such as a screw-thread or a knob may be provided on the solid end of the tuft and corresponding engagement means on the handle or vice versa, to ensure a close fit for the tuft into the handle. The setting agent used may be rubber, sealing-wax, resin, Bakelite and similar material or Celluloid, which on setting will firmly hold the bristles together and provide a surface adapted to make a close fit into a slot, groove or the like provided therefor in the handle.

Other objects and advantages of the invention will hereinafter become more fully apparent from the following description of the drawing, wherein preferred embodiments of the invention are illustrated, and wherein:

Figure 1 is a perspective view of a preferred form of the tooth-brush,

Figure 2 is a longitudinal central sectional view of the same,

Figure 3 is a perspective view of a modified form of the tooth-brush,

Figure 4 is a longitudinal central sectional view of the same,

Figure 5 is a sectional view taken along the line 5—5 of Figure 4,

Figure 6 is a sectional view taken along the line 6—6 of Figure 4,

Figure 7 is a perspective view of another form of the tooth-brush, and

Figure 8 is a longitudinal central sectional view of the same.

Referring more particularly to the drawing, wherein like reference characters designate like or corresponding parts throughout the different views, 10 designates generally the tooth-brush, illustrated in Figures 1 and 2, including the handle, designated generally 11 and the brush heads, designated generally 12. The handle 11 includes an enlarged end 13 and a flat end 14. End 13 is provided with a longitudinal slot 15 which communicates at its inner end with a transverse bore 16 and which extends therefrom through its free end. The free end of the portion 13 is provided with an internally threaded longitudinal bore 17. The flat end 14 of the handle 11 is provided with a vertical longitudinally disposed slot 18, the inner end of which communicates with a vertical transverse bore 19, the opposite end of which extends through the free end of the flat por-

tion 14. End 14 is provided with a transverse bore 20 which is internally threaded and which extends vertically through the slot 18, intermediate of its ends.

The brush heads 12, as illustrated in Figures 1 and 2, each include at one end a tuft of bristles 21 and at their opposite ends a base 22 in which the bristles 21 are mounted. Base 22 of each brush head 12 is externally threaded for engaging the internally threaded bores 17 and 20 for detachably mounting the brush heads 12 in the handle 11 and for disposing one of the brush heads longitudinally of the handle and at one end thereof, and the other transversely of the handle and at the opposite end thereof.

The diameter of the enlarged end 13 increases slightly toward its free end so that a clamping ring 23 which is slidably mounted thereon can be moved toward said free end to compress the corresponding portions 24 thereof for clamping the brush head base 22 in the threaded socket 17 so as to prevent the brush head 12 mounted therein from being turned and detached while the ring 23 is in an advanced position.

In Figures 3 and 4, a modified form of the invention is shown wherein a tooth-brush, designated generally 25, includes a handle 26 which is flat throughout its length and which is provided with transverse bores 27 and 28 adjacent its ends forming brush head receiving openings. Opening 27 is provided with the diametrically opposed inwardly projecting studs 29, as best seen in Figure 5, while opening 28 is provided with the diametrically opposed oppositely extending L-shaped slots 30.

Brush 25 is provided with the brush heads 31 and 32 each of which is provided with a set of bristles 33. The bristles 33 of the brush head 31 are mounted in a base 34 which is provided with the diametrically opposed oppositely extending L-shaped slots 35 in its sides. Base 34 is adapted to be mounted in the opening 27 with its slots 35 in engagement with the studs 29 to form therewith a bayonet connection by inserting the brush head 31 and turning it slightly so that the studs 29 will engage the oppositely extending inner ends of the slots 35 to form a bayonet joint for detachably mounting the head 31 in the opening 27. The bristles 33 of the head 32 are mounted in a base 36 which is provided with the diametrically opposed outwardly projecting studs 37. Base 36 is adapted to be mounted in opening 28 with the studs 37 engaging the slots 30 to similarly form a bayonet joint, except that the parts are reversed. Obviously, the handle 26 could be provided at each end with an opening corresponding to the opening 27 and with two brush heads corresponding to the brush head 31 or with two openings corresponding to the opening 28 and with two brush heads corresponding to the brush head 32, as desired.

In Figures 7 and 8, still another modified form of tooth-brush is illustrated, designated generally 38, which includes a handle 11*a* having the parts 13*a*, 14*a*, 15*a*, 16*a*, 18*a*, and 19*a* corresponding to the parts 13, 14, 15, 16, 18, and 19, respectively, of the handle 11. In lieu of the internally threaded socket 17, the handle 11*a* is provided with a socket 39 in the end of its enlarged portion 13*a* which tapers inwardly and which is disposed longitudinally thereof and instead of the threaded bore 20 the flat portion 14*a* is provided with a transverse bore 40, intermediate the ends of the slot 18*a* which tapers downwardly. Tooth-brush 38 is provided with brush heads 41 and 42 the former of which is provided with a set of bristles 43 mounted in the base 44. Base 44 is shaped and sized to fit the socket 39, being tapered towards its free end and being adapted to be detachably mounted, by frictional engagement, therein to mount the brush 41 longitudinally of the handle 38. Brush 42 is substantially greater in diameter than the brush 41 and includes a set of bristles 45 mounted in a base 46 which is tapered and sized to correspond to the opening 40 and which is adapted to be detachably mounted therein and held by frictional engagement therewith to mount the brush 42 transversely of the handle 38. Slots 15, 18, 15*a* and 18*a* are provided to render the free ends of the portions 13, 14, 13*a* and 14*a*, sufficiently yieldable so that the sockets or bores formed therein can be expanded slightly to receive the brush head bases and to provide sufficient frictional contact therewith to prevent the brush heads from being casually detached. To this end, the diameters of the bases of the brush heads may be formed slightly greater than the diameters of the sockets or bores in which they are adapted to be mounted.

The brush heads used in all three of the forms, heretofore described, of the invention may be formed either from a tuft of bristles one end of which is dipped in a setting agent, as heretofore described, to form the base or the brush heads may be formed from a fibrous wood such as palm or bamboo one side or end of which is formed into bristles, by cutting or hammering up to the depth desired leaving the opposite side or end solid to form the base portion. This last mentioned type of brush head may be very economically manufactured due to the inexpensive wood employed. Where a setting agent is used to form the base, a thin cap of rubber, Celluloid, Bakelite or thin metal may be mounted thereover to prevent the setting agent from being affected by climatic changes.

If desired, where the brush head base is formed of rubber or the like the connecting means as described for mounting the base in a socket or bore may be dispensed with since due to the pliability of the material it may be readily compressed to provide a sufficiently tight engagement. Furthermore, various combinations of the brush head and handle connecting means as illustrated may be combined and other types may be employed such as a screw propeller of the type used conventionally in automatic pencils for tightening a brush head base in a bore or socket which is disposed transversely of the handle.

Various modifications and changes are contemplated and may be resorted to provided they fall within the spirit and scope of the invention as hereinafter defined by the appended claims.

I claim as my invention:

1. A tooth-brush comprising a handle having a longitudinal slot extending through one end thereof and a transverse bore adjacent said end and intermediate of the ends of said slot, said bore being internally threaded, and a brush head including a set of bristles and a base in which said bristles are mounted, said base being externally threaded and sized to engage said threaded bore to detachably mount the brush head transversely of the handle.

2. In a tooth-brush, a handle provided with a longitudinally disposed slot opening outwardly of one end thereof and a transverse bore formed

in said handle adjacent said end and communicating with said slot adjacent the outer end thereof, said bore being tapered, and a brush head having a tapered base for frictionally engaging said bore for detachably mounting the brush head transversely of the handle.

3. A brush structure comprising a handle having a longitudinal slot opening outwardly of one end and a transverse opening communicating with the slot, intermediate of its ends, said slot dividing said end of the handle into furcations, said furcations being resiliently disposed relatively to one another, and a brush having a head for engaging said opening, said head being slightly larger in diameter than the opening, for spreading the furcations to tension them to frictionally retain the head in engagement with the opening.

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