

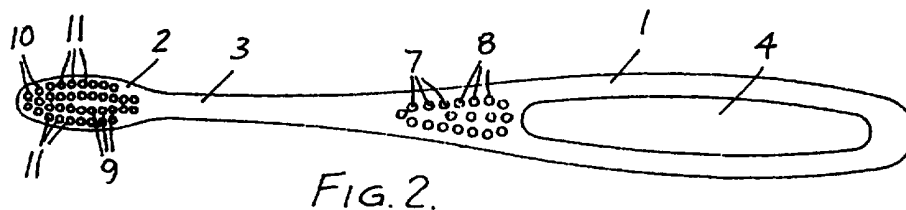
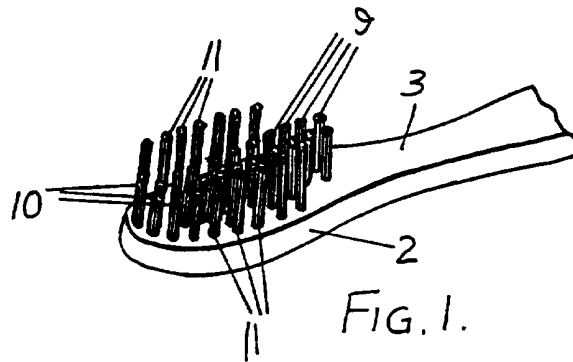
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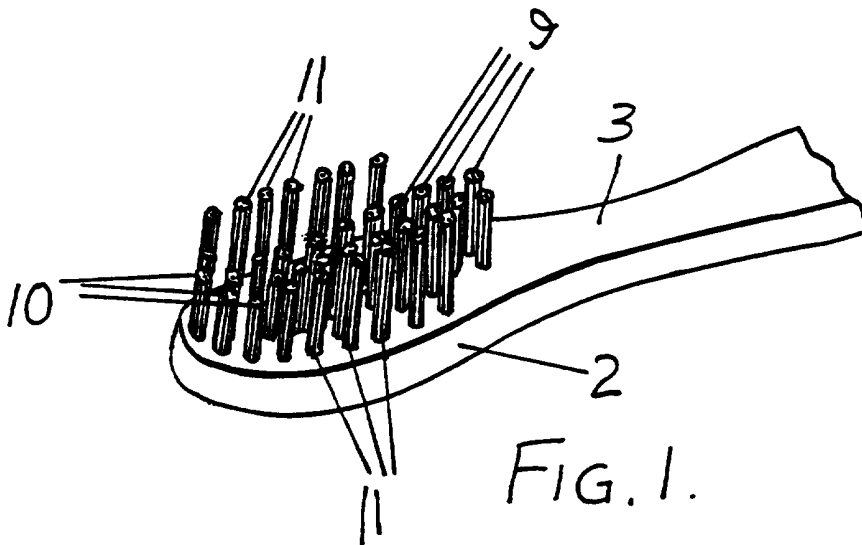
(54) Toothbrush

(57) A toothbrush head, Fig. 1., has central bristle tufts 9, end bristle tufts 10 of greater height, and side tufts 11 of even greater height. The hard plastics handle, Fig. 2, has an upper surface which curves upward from neck 3, and has a soft, resilient plastics upper insert 4 of contrasting colour. The handle also has a similar, lower triangular insert (6, Fig. 4, not shown) which has projections 7 through the upper surface to form a resilient thumb grip.



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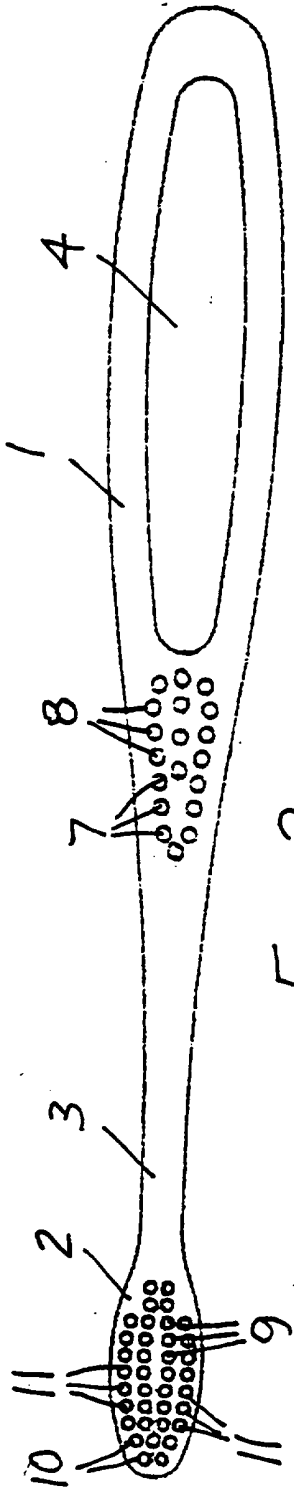


FIG. 2.

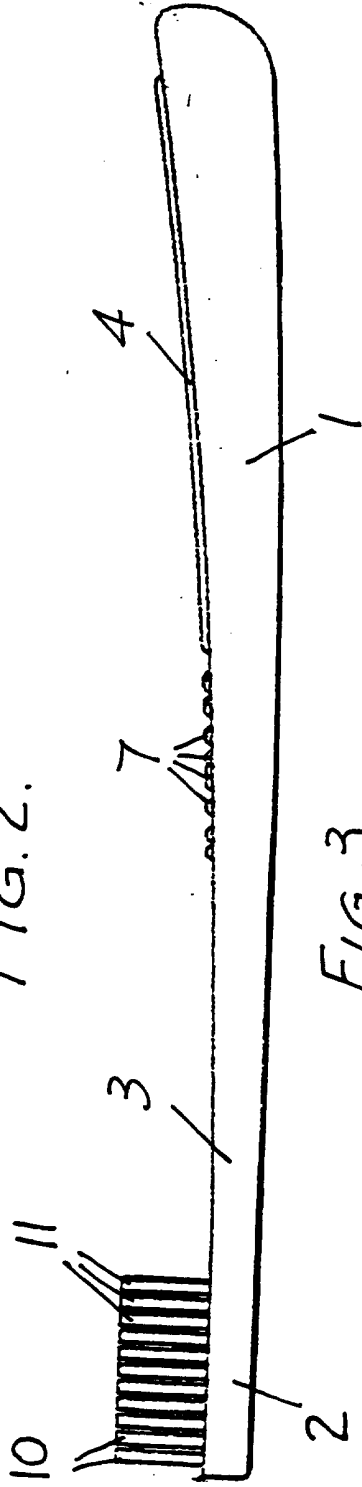


FIG. 3.

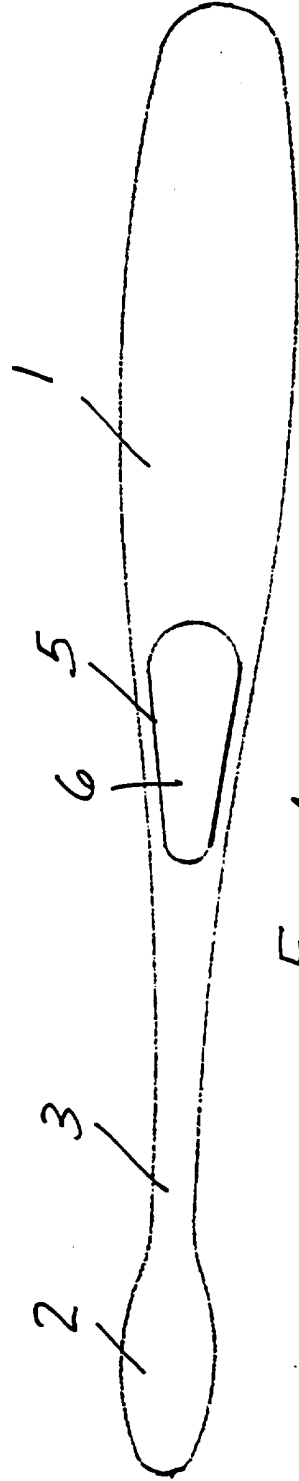


FIG. 4.

A TOOTHBRUSH

This invention relates to a toothbrush and more particularly to an improved toothbrush bristle arrangement.

5 Various designs of toothbrush bristles are available, including the arrangement and height of the bristle tufts, to improve the cleaning properties of the brush. However, none of these address the problem of reaching the gums of the user where the teeth emerge. This area of the mouth is particularly prone to the
10 collection of food particles which, unless removed, cause plaque to form, often leading to tooth decay.

An aim of the present invention is to provide a toothbrush which is designed to reach the edges of the user's gums where the teeth emerge.

15 According to the present invention there is provided a toothbrush comprising a handle joined by a neck to a head with an array of bristle or filament tufts, wherein the central area of tufts is of a first height, the tufts at the free end of the head of a
20 greater height and tufts at opposite sides of the bristles having a greater height than the other tufts.

Preferably, the tufts at opposite sides of the bristles are in rows.

25 Conveniently, the handle has inserts of a resilient material to improve the grip on the handle.

In one construction an insert having needle shaped projections is located in a recess on the underside of the handle, the needle shaped projections passing through holes formed in the top of the handle to form a grip for
30 the thumb of the user.

In a preferred construction, the inserts are of a contrasting colour to the brush handle, neck and head.

An embodiment of the improved toothbrush will now be described, by way of example only, with reference to
35 the accompanying drawings, in which:

Fig. 1 is a fragmentary perspective view of the toothbrush head;

Fig. 2 is a plan view of the toothbrush;

Fig. 3 is a side elevation of the toothbrush shown 5 in Fig. 2; and

Fig. 4 is an underneath plan view of the toothbrush shown in Figs. 2 and 3.

The toothbrush comprises a handle 1 connected by a neck 3 to a head 2 with an array of bristle or filament 10 tufts. The handle is moulded from a hard plastics material, i.e. polypropylene and enlarges from its neck towards the rear end, the upper side of the handle curving upwards from the neck towards the rear end.

The upper surface of the handle 1 has an insert 4 15 of a contrasting coloured soft and resilient plastics material e.g. an elastomeric material sold under the trade name Thermoflex having a hardness of 20 shore A-55 Shore D to that of the brush handle. The underside of the handle has a recess 5 in which is fitted a generally 20 triangular shaped insert 6 of a soft plastics material corresponding to the insert 4. The insert 6 has a plurality of needle shaped projections 7 which project upwards through a corresponding number of holes 8 in the upper surface of the handle to form a resilient grip for 25 the thumb of the user.

The improved array of bristle tufts is illustrated in an enlarged fragmentary view shown in Fig. 1 and comprises a central area of two rows of tufts 9 of a first height with five tufts 10 at the free end of the 30 head of a greater height than tufts 9. A single row of tufts 11, of a greater height than the tufts 10, is arranged at each side of the head. It will be apparent that in the course of brushing the teeth, the central area of tufts 9 brush the upper surfaces and when the 35 brush is turned through 90° , these tufts brush the sides of the teeth. The tufts 10 at the free end of the head

brush the spaces between the teeth while the rows of tufts 11 brush the teeth along the line of the gums at the inside and the outside of the teeth respectively.

CLAIMS:

1. A toothbrush comprising a handle joined by a neck to a head with an array of bristle or filament tufts, wherein the central area of tufts is of a first height, 5 the tufts at the free end of the head having a greater height and tufts at two opposite sides of the bristles having a greater height than the other tufts.
2. A toothbrush as claimed in Claim 1, wherein the tufts at opposite sides of the array of bristles are in a 10 single row.
3. A toothbrush as claimed in Claim 1 or 2, wherein the handle has inserts of a resilient material to improve the grip of the handle.
4. A toothbrush as claimed in any preceding claim, 15 wherein an insert having needle shaped projections is located in a recess on the underside of the handle, the needles projecting through holes formed on the top of the handle to form a grip for the thumb of the user.
5. A toothbrush as claimed in Claims 3 or 4, wherein 20 the inserts are of a contrasting colour to the brush handle, neck and head.
6. A toothbrush substantially as hereinbefore described with reference to and as shown in the accompanying drawings.

Patents Act 1977
Examiner's report to the Comptroller under Section 17
(The Search report)

Application number
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Relevant Technical Fields

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- (ii) Int Cl (Ed.6) A46B (9/00, 9/02, 9/04, 9/06)

Databases (see below)

- (i) UK Patent Office collections of GB, EP, WO and US patent specifications.
- (ii)

Search Examiner
 DR C L DAVIES

Date of completion of Search
 16 JUNE 1995

Documents considered relevant following a search in respect of Claims :-
 1-6

Categories of documents

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| <p>X: Document indicating lack of novelty or of inventive step.</p> <p>Y: Document indicating lack of inventive step if combined with one or more other documents of the same category.</p> <p>A: Document indicating technological background and/or state of the art.</p> | <p>P: Document published on or after the declared priority date but before the filing date of the present application.</p> <p>E: Patent document published on or after, but with priority date earlier than, the filing date of the present application.</p> <p>&: Member of the same patent family; corresponding document.</p> |
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Category	Identity of document and relevant passages	Relevant to claim(s)
Y	WO 94/09677 A1 (BREDALL) see Figure 4	3, 4
X,Y	US 5305489 (LAGE) see Figure 2	X: 1, 2 Y: 3, 4
X,Y	US 4776054 (RAUCH) see Figure 4	X: 1, 2 Y: 3, 4

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