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(72) Inventor; and

(71) Applicant : VASILJKOVIC, Zelko [AU/AU]; 23
Fridge Crescent, East Geelong, VIC 3219 (AU).

(74) Agent: A TATLOCK & ASSOCIATES; 15 Lygon
Street, Carlton, VIC 3053 (AU).

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Declarations under Rule 4.17:

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- as to the applicant's entitlement to claim the priority of
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(54) Title: SINGLE-USE TOOTHBRUSH HAVING A RESERVOIR OF TOOTHPASTE ASSOCIATED WITH THE HEAD

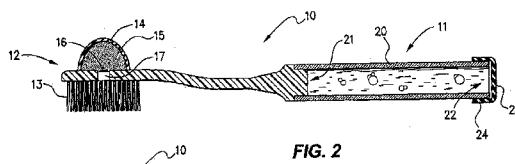


FIG. 2

(57) Abstract: A single-use toothbrush having a head and handle, bristles on one side of the head, a reservoir of toothpaste associated with the head the contents of which can be moved into connection with the bristles so that when the brush is to be used, the toothpaste may be moved from the reservoir to be in contact with the bristles from which it is spread into the users mouth. The handle of the toothbrush may be hollow and adapted to receive and retain mouthwash.

-1-

SINGLE-USE TOOTHBRUSH HAVING A RESERVOIR OF TOOTHPASTE ASSOCIATED WITH THE HEAD

Technical Area

This invention relates to an improved toothbrush and, in particular, to one-use toothbrushes.

Background to the Invention

There have previously been proposed single-use toothbrushes and these may be provided with a small tube of toothpaste to be used thereon and on some occasions these have been packaged to occupy a minimal space, for use in vending machines or the like.

However, whilst these toothbrushes have to a greater or lesser degree satisfied their main function, they have nevertheless been somewhat limited, both in this and generally.

Outline of the Invention

It is an object of the present invention to provide a toothbrush of this general type which is more satisfactory than previous forms.

-2-

The invention, in a first aspect, provides a single-use toothbrush having a head and handle, bristles on one side of the head, a reservoir of toothpaste associated with the head the contents of which can be moved into connection with the bristles so that when the brush is to be used, the toothpaste may be moved from the reservoir to be in contact with the bristles from which it is spread into the users mouth.

In a preferred form of the invention the handle can be hollow, at least in part, and the hollow portion of the handle can be adapted to receive a mouthwash and to be sealed to retain the mouthwash therein.

The toothbrush assembly may be packed in an outer container so that it can be dispensed from a dispensing machine without any likelihood of contamination of the head of the toothbrush. In order to assist this, the head and handle may be able to be separated.

Description of an Embodiment of the Invention

In order that the invention may be more readily understood and put into practice, one particular embodiment of toothbrush made in accordance with the invention will be described in relation to the accompanying drawings, in which:

Fig 1 is a perspective view of the brush of the invention;

-3-

Fig 2 is a longitudinal section of the brush as supplied to the user; and
Fig 3 is a section similar to Fig 2 with the paste delivered and the mouthwash container open.

Referring to the drawings, the toothbrush 10 has a body at one end of which there is a handle 11 and the other end there is a head 12 which has the toothbrush bristles 13 in a formation which is conventional.

On the back of the head 12, that is, on the side away from the side from which the bristles 13 extend, there is a container 14 which can hold sufficient toothpaste 15 for a single use.

This container 14 can be of a flexible material, such as a synthetic rubber or plastics material, and there may, if required, be provided between the container and the back of the toothbrush a frangible seal 16.

Beneath the container there can be an aperture 17 passing through the body of the toothbrush and this aperture may be basically centrally thereof.

The arrangement is such that when a person wishes to use the toothbrush it is necessary to deform the container 14 which, if there is a frangible seal 16, causes the toothpaste to provide pressure thereon and to cause it to rupture and permit the toothpaste 15 to pass through the aperture 17 in the head located there-

-4-

beneath and to enter into the head of the toothbrush within the body of the bristles 13 of the brush (See Fig 3).

The toothbrush can then be used in the normal manner to effect the cleaning of the user's teeth and the location of the toothpaste within the bristle area of the brush enables the ready dissemination of the paste while the brush is being used.

The reservoir is of such a size that it does not cause an obstruction in the user's mouth and, if required it may be made of a material which is not elastic so that when the toothpaste is expelled therefrom, the reservoir remains in the collapsed position which it has assumed during delivery of the toothpaste.

It will be seen that the toothbrush provides a readily accessible, metered quantity of toothpaste for the primary purpose of the brush.

The brush of the invention has a second substantial feature and that is that the handle 11, or at least part of this, is hollow.

In a preferred form the handle may be in the form of an extended cylindrical or other shaped tube 20 which is closed at the end 21 at which it is connected to the head portion. The closure may be formed by portion of the body 13 being shaped to enter the open end of the tube and it may be welded or adhesively secured thereto.

-5-

This tube 20 is also closed or can be closed at its other end 22. As shown in the drawings the closure can be by a cap 23 which is preferably of a resilient material having a skirt 24 which can seal onto the tube 20. Alternatively, the closure could be a stopper which enters into the tube and in either case can be threaded onto the tube rather than being a frictional fit thereon.

The closure at the outer end may simply include or be a frangible member to ensure good protection for the contents of the tube.

The tube 20 acts as a receptacle for a mouthwash. Once the person has finished cleaning their teeth, they can simply open the end of the handle and can place the mouthwash in their mouths so as to complete the cleaning operation and leave their breath fresh smelling.

If required, the hollow handle portion may be separable from the body so that the assembly can be packed in a minimum volume and before use the handle can be connected to the body in any required way and it will be appreciated that the form of connection is selected to ensure that the mouthwash is not disturbed during this.

Whilst there has been described herein one particular embodiment of the invention it is to be understood that variations and modifications can be made in this without departing from the spirit and scope thereof.

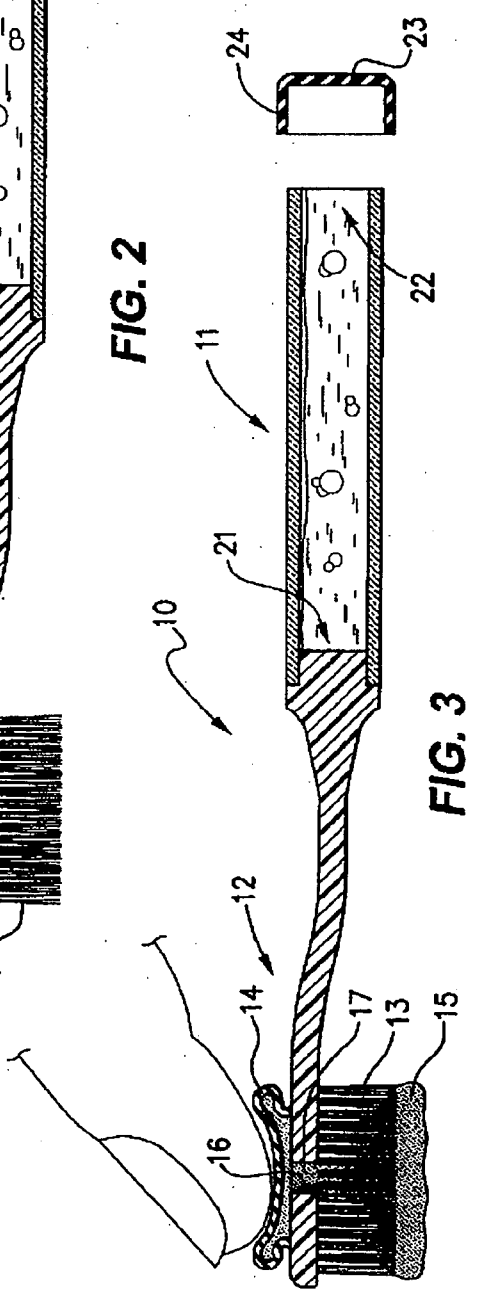
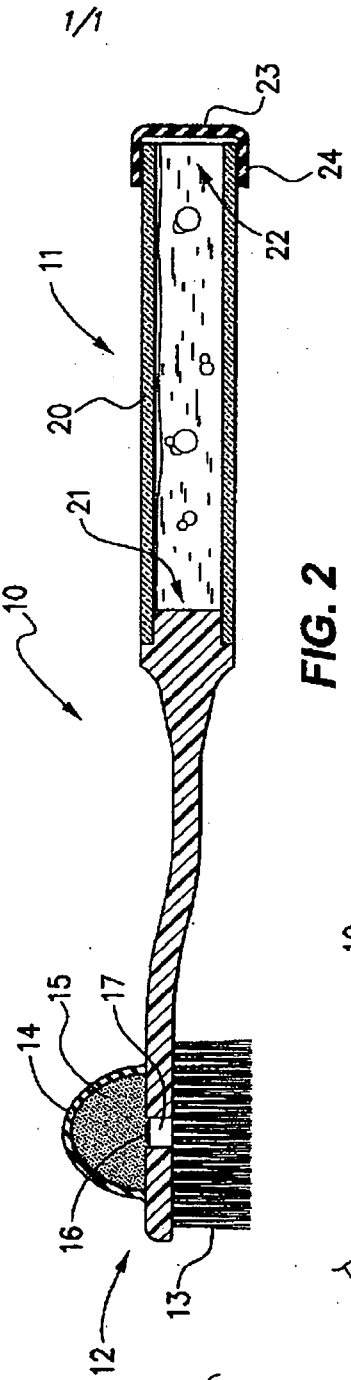
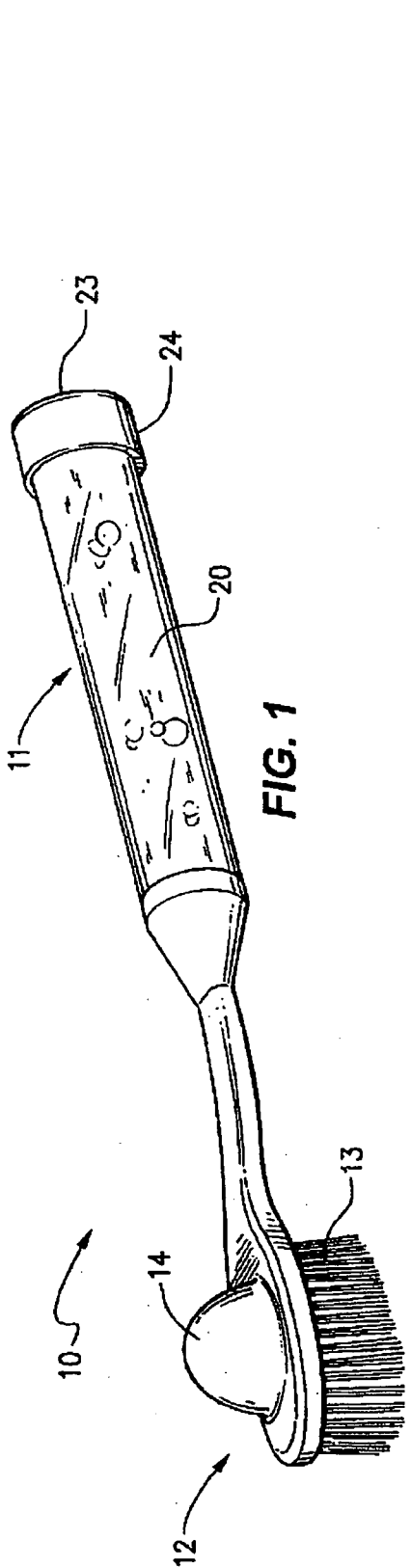
-6-

I claim:

1. A single-use toothbrush having a head and handle, bristles on one side of the head, a reservoir of toothpaste associated with the head the contents of which can be moved into connection with the bristles so that when the brush is to be used, the toothpaste may be moved from the reservoir to be in contact with the bristles from which it is spread into the users mouth.
2. A toothbrush as claimed in claim 1 wherein the reservoir of toothpaste is located on the side of the head away from the bristles and is interconnected to the bristle side by an aperture passing through the head.
3. A toothbrush as claimed in claim 2 wherein there is a frangible seal in the aperture.
4. A toothbrush as claimed in any one of claims 1 to 3 wherein the reservoir is a member which can be deformed to release the toothpaste therein.
5. A toothbrush as claimed in any preceding claim wherein handle is hollow, at least in part, and the hollow portion of the handle can receive a mouthwash and to be sealed to retain the mouthwash therein.

-7-

6. A toothbrush as claimed in claim 5 wherein the end of the handle directed towards the head is sealed by an extension from the head by way of which it is connected to the head.
7. A toothbrush as claimed in claim 5 wherein the end of the handle directed towards the head is closed and is formed as to cooperate with an extension from the rear of the head by way of which it is connected to the head.
8. A toothbrush as claimed in claim 7 the parts of which can be separated for ease of transport.
9. A toothbrush as claimed in any preceding claim wherein the toothbrush is packed in an outer container so that it can be transported or dispensed from a dispensing machine without any likelihood of contamination of the head of the toothbrush.



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International application No.

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A. CLASSIFICATION OF SUBJECT MATTER

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According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPODOC, WPI: and keywords: toothbrush, head, reservoir, capsule, chamber, compartment, storage, handle, holding, hollow, channel, passage, cavity and like terms.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5865195 A (CARTER) 2 February 1999 Column 4 lines 12-45, figure 3	1-6, 9
X	US 5769553 A (CHAUDHRI et al) 23 June 1998 Figures 1-3, column 2 line 12 to column 3 line 9	1-5, 7-9
X	US 3738762 A (MOORE et al) 12 June 1973 Figures 1-5, column 1 line 48 to column 2 line 10	1-5, 7-9
X	WO 2000/053053 A (TRI-CONCEPTS (PROPRIETARY) LIMITED) 14 September 2000 Page 5 line 10 to page 7 line 6, figures 1-8	1-6, 9

☒ Further documents are listed in the continuation of Box C

☒ See patent family annex

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

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Name and mailing address of the ISA/AU
AUSTRALIAN PATENT OFFICE
PO BOX 200, WODEN ACT 2606, AUSTRALIA
E-mail address: pct@ipaaustralia.gov.au
Facsimile No. +61 2 6283 7999

Authorized officer
JOHN BASTAWROS
AUSTRALIAN PATENT OFFICE
(ISO 9001 Quality Certified Service)
Telephone No : +61 2 6225 6134

INTERNATIONAL SEARCH REPORT

International application No.
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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6715952 B1 (AIKEN et al) 6 April 2004 Column 2 lines 26 to column 3 line 14	1-9

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/AU2009/000757

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report			Patent Family Member				
US	5865195	NONE					
US	5769553	NONE					
US	3738762	NONE					
WO	0053053	AU	11724/00	CA	2364109	CN	1352534
		EP	1164891	NZ	514670	ZA	200108245
US	6715952	NONE					
Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001.							
END OF ANNEX							