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(54) **Disposable toothbrush**

(57) Disposable toothbrush provided with a handle associated with a bristle-holding head, the bristle of which are impregnated with dried toothpaste, which is adapted

to be instantaneously converted into paste upon contact with water or with the user's saliva.

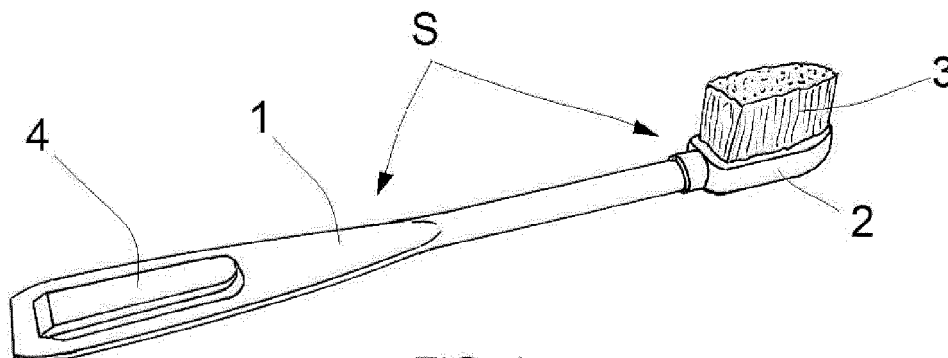


FIG. 1

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Description

[0001] The present patent application for utility model relates to a disposable toothbrush.

[0002] The invention has been devised to solve a problem that is especially faced by persons who are often forced to have meals out of their home, as for instance workers who do not go back home during lunch break, or by travelers.

[0003] These people feel the need to brush their teeth after a meal, without having the possibility of doing it, in lack of their usual "home" toothbrush and toothpaste.

[0004] In fact, such a problem has not encountered an effective solution yet.

[0005] Those who have tried to find a solution have mostly worked to reduce the weight and the volume of the toothbrush and toothpaste in order to make them easy to transport and hold in a pocket or a woman's purse.

[0006] It can be otherwise said that toothbrushes with limited size have been devised, including foldable toothbrushes, as well as toothpaste with very small volume that contain a small amount of product.

[0007] Such toothbrushes have been also realized in a "disposable" version, always requiring the user to carry toothpaste separately.

[0008] In view of the above, the idea of the present invention is to devise a disposable toothbrush - to be preferably used out of the house - which is intrinsically ready for use, without requiring the user to carry toothpaste and apply an amount of toothpaste on the bristles that are normally provided in a toothbrush.

[0009] The idea of the present invention is to apply on the bristles of the new toothbrush of the invention a suitable amount of a dried toothpaste that can instantaneously "revive" - being practically converted into the typical paste state - as soon as the bristles come in contact with running water from a faucet or with water contained in a glass.

[0010] It can be otherwise said that the bristles of the toothbrush of the invention are previously impregnated with toothbrush and then allowed to dry, before the toothbrush is packaged and marketed to be purchased by the user and used as illustrated above.

[0011] Moreover, it must be noted that the toothbrush can be realized in two different embodiments, while still falling within the protection scope of the present invention.

[0012] In a first case, the toothbrush has the structure of a traditional toothbrush, being formed of a long monolithic handle that incorporates a typical end adapted to support the bristles impregnated with dried toothpaste.

[0013] Considering that the dried toothpaste applied to the bristle of the toothbrush of the invention can be only used once, it appears evident that the user of this first version of toothbrush according to the present invention will dispose of the entire toothbrush after its first and only use.

[0014] In a second case, the toothbrush can be real-

ized in an embodiment adapted to be used in combination with interchangeable bristle-holding heads. In such a case, the toothbrush of the invention is provided with a handle, one end of which can be removably coupled with a bristle-holding head impregnated with dried toothpaste.

[0015] The user of this second embodiment of the invention can purchase the handle together with a suitable number of interchangeable bristle-holding heads in such manner that upon each use of the toothbrush the user can keep the handle and replace the "exhausted" bristle-holding head with a new head of the same type.

[0016] This ensures a long use of the handle of the toothbrush according to the present invention and allows reducing the waste of the plastic material used to make the toothbrush.

[0017] For explanatory reasons the description of the invention continues with reference to the attached drawings, which only have an illustrative, not limiting value, wherein:

- Fig. 1 is an axonometric view of the toothbrush of the invention according to its monolithic version;
- Fig. 2 is an exploded axonometric view of the toothbrush of the invention according to its version with interchangeable bristle-holding heads;
- Fig. 3 is an enlarged partially sectional view of a detail of Fig. 2.

[0018] Referring to Fig. 1, the toothbrush of the invention (S) traditionally comprises a handle (1) provided with a bristle-holding head (2) at one end.

[0019] As mentioned above, the peculiarity of the toothbrush is that the bristles (3) are impregnated with dried toothpaste which is able to instantaneously recover its fluid state in contact with water.

[0020] More precisely, the toothpaste automatically recovers its detergent, and possibly disinfectant power in contact with water or with the user's saliva.

[0021] As shown in Fig. 1, the handle (1) can be preferably provided, at the opposite end with respect to the bristle-holding head (2), with a clip (4), similar to the one provided in a pen cap, which allows for firm fixing to a pocket or a purse.

[0022] Likewise, it must be noted that the flat part of the handle (1) can be used for decoration, information or promotional purposes, if the toothbrush of the invention is presented as an advertising gadget.

[0023] Fig. 2 shows the version in which the toothbrush (S) is provided with a handle (10) with a free end (10a) adapted to be firmly, yet removably coupled with an interchangeable head (20) adapted to support the bristles (3) impregnated with the dried toothpaste.

[0024] Within such a logic principle, the free end (10a) of the handle (10) and the interchangeable head (20) can be possibly provided with any preferred type of fast-coupling/uncoupling means.

[0025] In fact, a pressure, snap-in, bayonet or screw coupling system can be provided, as shown in Fig. 3.

[0026] Fig. 3 shows that the handle (10) is provided with a free end (10a) with substantially cylindrical shape and is externally provided with a relief thread (11).

[0027] The bristle-holding head (20) is provided with an axial cylindrical mouthpiece (21), the internal walls of which are provided with a thread (21 a). 5

[0028] The cylindrical end (10a) of the handle (10) can be exactly inserted into said mouthpiece (21) of the bristle-holding head (20) so that the threads (11, 21 a) can provide firm helical coupling. 10

Claims

1. Disposable toothbrush with a handle (1, 10) that supports a bristle-holding head (2, 20), **characterized in that** the bristles (3) are impregnated with dried toothpaste. 15
2. The toothbrush of claim 1, wherein the dried toothpaste is instantaneously converted into paste upon contact with water or with the user's saliva. 20
3. The toothbrush of one of the preceding claims, wherein the bristle-holding head (20) can be removed with respect to the handle (10). 25
4. The toothbrush of claim 3, wherein said handle (10) is provided at the free end (10a) with fast coupling means (11) adapted to cooperate with corresponding coupling means (21 a) provided in said bristle-holding head (20). 30
5. The toothbrush of claim 4, wherein the coupling means provided at the free end (10a) with substantially cylindrical shape of said handle (10) consist in a relief thread (11) and wherein the corresponding coupling means provided in the bristle-holding head (20) consist in a thread (21 a) provided in the internal walls of a substantially cylindrical conduit (21) provided in the head (20) and adapted to exactly receive the free end (10a) of the handle (10), thus favoring the helical coupling between the two threads (11, 21 a). 35 40
6. The toothbrush of one of the preceding claims, wherein the handle (1, 10) is provided, on the opposite side with respect to the bristle-holding head (2, 20), with a clip (4) for fixing to a pocket. 45 50

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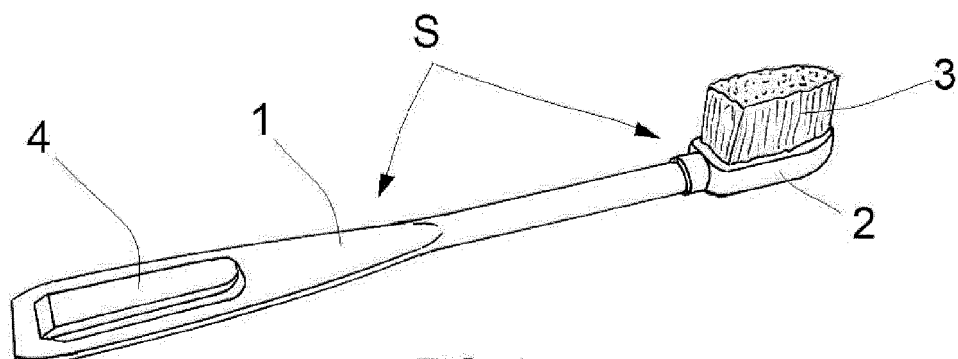


FIG. 1

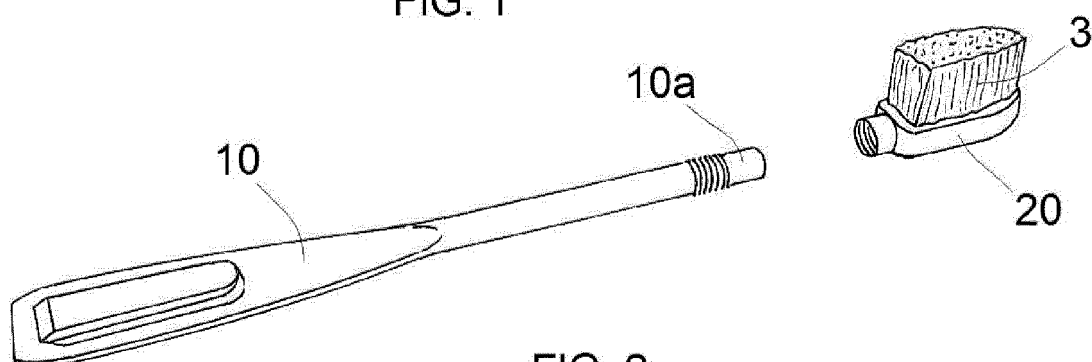


FIG. 2

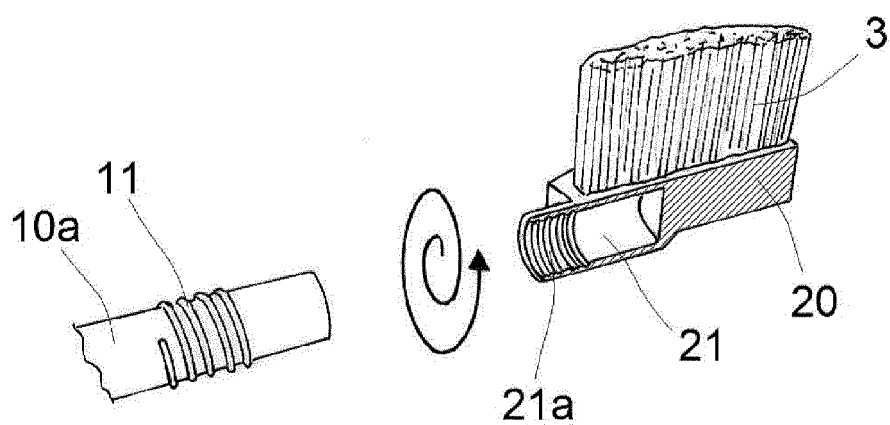


FIG. 3



EUROPEAN SEARCH REPORT

Application Number
EP 14 16 4556

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 5 304 009 A (MARSHALL JEWERAL E [US]) 19 April 1994 (1994-04-19)	1-5	INV. A46B5/00 A46B11/00
Y	* column 1, lines 5-10 * * column 2, lines 36-51, 55-56; figure 2 *	6	
Y	US 6 830 552 B1 (GONZALEZ MARK ANTONIO [US]) 14 December 2004 (2004-12-14)	6	
A	* column 1, lines 9-19; figures 2, 4 *	1-5	
			TECHNICAL FIELDS SEARCHED (IPC)
			A46B
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 27 June 2014	Examiner Dal Bó, Paolo
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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27-06-2014

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5304009	A	19-04-1994	NONE

US 6830552	B1	14-12-2004	NONE

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82