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(54) **TOOTHBRUSH INCLUDING A MIXED
CARTRIDGE ENABLING AUTOMATIC
INJECTION**

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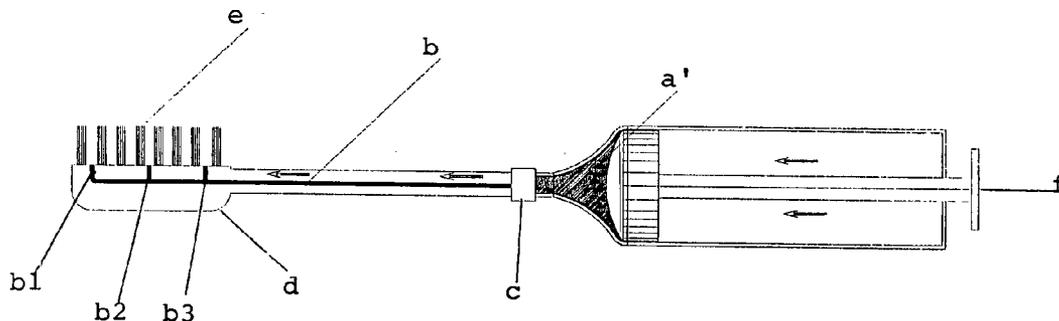
(57) **ABSTRACT**

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The invention relates to a toothbrush having a traditional shape, which is novel in that it includes a soft or hard exchangeable handle that supplies toothpaste and mouthwash in a single movement so that said dental care products reach the surface of the bristles following a single one-handed movement. The upper part of the brush contains an inner distribution channel which conveys the content to the bristles in such a way that the toothpaste supply system is automated.

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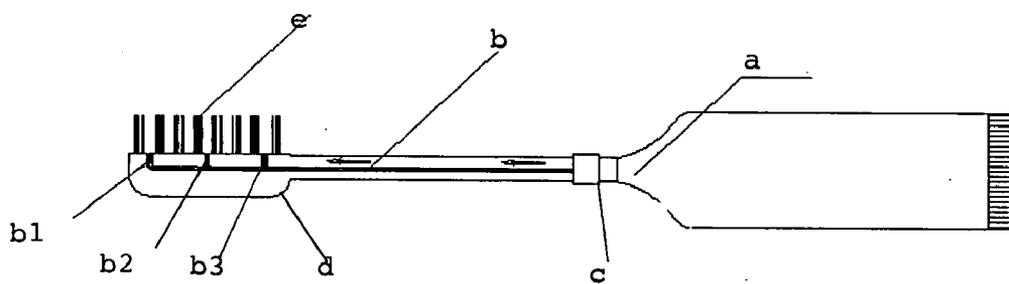


Figura 1

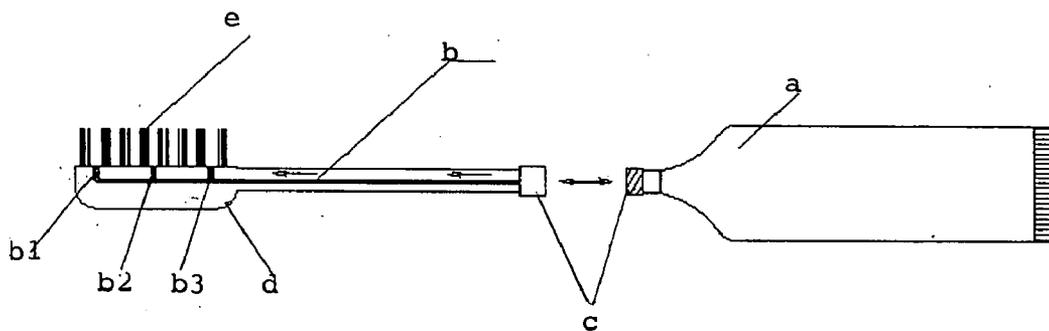


Figura 1'

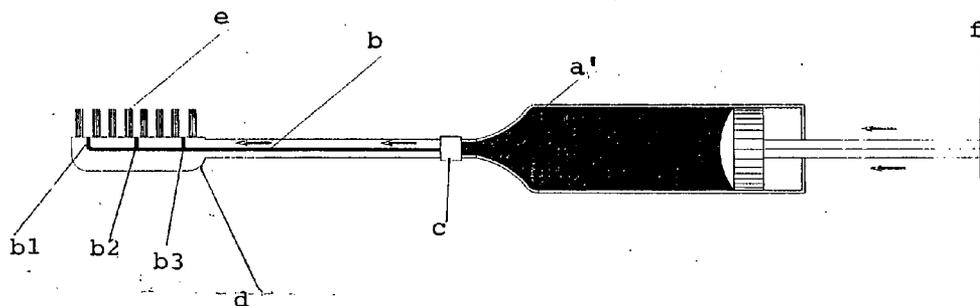


Figura 2

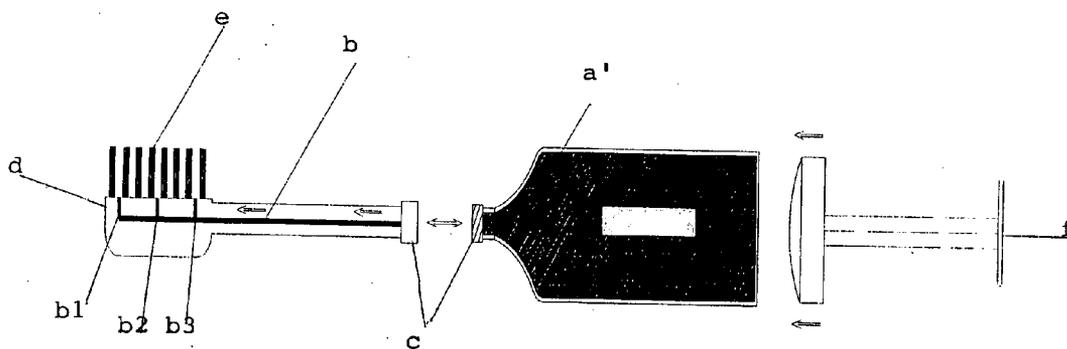


Figura 3

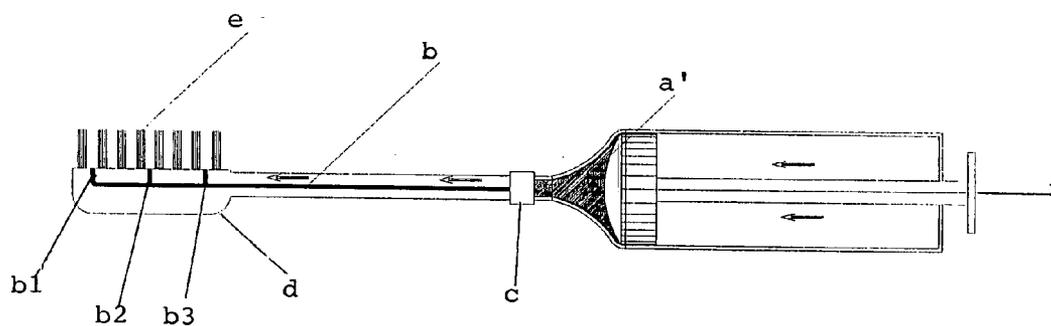


Figura 4

TOOTHBRUSH INCLUDING A MIXED CARTRIDGE ENABLING AUTOMATIC INJECTION

TECHNICAL FIELD OF THE INVENTION

[0001] The technical field to which the invention refers, that is being submitted hereby for patenting, refers basically to the field of the industrial engineering, specifically applied to the field of the personal hygiene, which entails a special benefit for people who suffer from disabilities in their upper limbs.

BACKGROUND OF THE INVENTION

[0002] There is presently no background whatsoever reflecting the use of the invention or similar products, for the purposes and technical field to which this invention refers. Nowadays we have a profuse variety of toothbrushes in the market, as well as a number of mouth care products and utensils, such as mouthwashes, dental floss, among others. Likewise, there is a great variety of toothpastes offering several benefits.

[0003] Notwithstanding the foregoing, to the date hereof there is no automatic expulsion toothbrush allowing for an automated discharge of toothpaste or mouthwash in a single movement of the hand, and without need for carrying a toothbrush, toothpaste and mouthwash, because with a single charge or device you may carry with you a complete oral care equipment.

DESCRIPTION OF THE INVENTION

[0004] The particular details, the inventive activity, the novelty and industrial application of this innovative invention are clearly set forth in the following description and accompanying drawings, following the reference marks to indicate and/or show the parts in which it is made up, and the manner to arrive to the final product in the figures shown.

[0005] FIG. 1 clearly shows the parts in which the system is comprised, the simple system with a built-in toothpaste injector, to wit: (a) a toothpaste dispenser, manufactured with soft material allowing for it to be squeezed for the contents to be expelled; (b) a tube, the upper end of which may be finished off in any geometrical form or cap (d) bearing on its upper end the bristles (e) of the toothbrush and in its lower end a female thread (c) that fits into the male thread of the toothpaste dispenser. The tube (b) contains an inner distribution channel, ending on three channels at the geometric cap (b1, b2, b3) allowing for the injected content to rise easily and automatically to the bristles (e). FIG. 1' shows the same elements but without the dispenser being threaded (a) and the tube (b).

[0006] FIG. 2, clearly shows the toothbrush with a rigid toothpaste dispenser, detailing the parts in which it is comprised. The upper part is identical to the simple version with the soft dispenser (a) and it is comprised of a tube the upper end of which may be finished off in any geometrical form or cap (d) bearing on its upper end the bristles (e) of the toothbrush and in its lower end a female thread (c) that fits into the male thread of the rigid toothpaste dispenser. The tube (b) contains an inner distribution channel, ending on three channels at the geometric cap (b1, b2, b3) allowing for the injected content to rise easily and automatically to the bristles. The lower part is the one that changes and consists of a rigid dispenser (a1) which is hollow and contains an orifice in its lower part, for a rounded tip injection plunger (f) to be

inserted through there, allowing for the toothpaste to be pushed towards the upper part.

[0007] FIG. 3 clearly shows the rigid dispenser toothbrush (a1) in its full capacity, showing how the plunger (f) lies externally to push the content, while FIG. 4 shows how the rigid dispenser toothbrush would be seen once the toothbrush has been totally used up.

[0008] Regarding said figures, it must be pointed out that the invention consists of an automated toothbrush providing a number of conveniences while facilitating its use for people suffering from some disability. Thus, resulting in that instead of carrying a toothbrush, a toothpaste and a mouthwash, we only have to carry this innovative invention which has everything included, which also allows persons with different capabilities to use it in a faster and easier way to perform their dental cleaning, since it only requires one hand to make use of the same, and with a single hand they squeeze or push the plunger, depending on the dispenser in question, to pour toothpaste and mouthwash automatically over the bristles of their toothbrushes.

[0009] In other words, and as shown in the steps depicted in FIGS. 1, 1', 2, 3 y 4 attached hereto, the design consists in using a soft or rigid toothpaste and/or mouthwash dispenser which injects the substance to the tube through channels which rise to the head of the toothbrush, carrying the content to the top of the bristles.

[0010] This is a toothbrush of conventional appearance, the head of which may be of different sizes and forms, including but not limited to round or rectangular, with long or short or mixed bristles, and whose novelty lies in the fact that the lower part, that is, the handle of the toothbrush, is comprised of a biodegradable or recyclable container serving as cartridge or dispenser with diverse specifications, according to the needs.

[0011] That is, the toothbrush is composed of two parts, the first being the cartridge that acts as a handle and the second one is the tube that ends in the bristles' head and the lower end of which contains a female thread which perfectly screws on the handle.

[0012] The handle is a mixed or single distributor that may dispense toothpaste or toothpaste/mouthwash.

[0013] The upper tube of the brush has an inner channel running along its body up to the bristles, with the necessary number of exits through which the toothpaste and the mouthwash flow until they reach the top.

[0014] The benefits of applying to toothbrushes an automatic injection mixed cartridge are vast and notorious. The application of these toothbrushes with their innovative channels and injection systems will be utterly beneficial both for executives and for persons who like to travel with little luggage, as well as for any person who arrives at a hotel and doesn't find the toothpaste of his/her liking or is not provided with a mouthwash. Moreover, it is crucial for persons who only have one limb, since, with a single hand and without need for placing the toothbrush on the basin top to dispense the toothpaste, they may wash their teeth, using only one hand to squeeze the handle or press the plunger included in the handle of the toothbrush, which movement will automatically allow them to have their toothbrush prepared with toothpaste and mouthwash on the bristles.

[0015] Consequently, it may be inferred that the application of these toothbrushes with automatic injector, as described and claimed herein, in its final product, thanks to its innovative assembling process and its composition with dynamic

distribution channels, serve to avoid having to carry several dental care utensils, and also serve and are very useful for handicapped persons, as expounded in the foregoing paragraphs.

[0016] Having sufficiently described, in a concise and clear manner, the invention in question, it is considered as a novelty endowed with inventive activity, and a reputed industrial application;

Therefore, the exclusive ownership of the content of the following clauses is claimed:

1. A toothbrush of conventional appearance the head of which may be of several sizes and forms, mentioning as a way of illustration but never as a limitation round or rectangular, with long or short or mixed bristles, the novelty of which lies in the fact that the lower part, that is, the handle of the toothbrush, is comprised of a biodegradable or recyclable container serving as cartridge or dispenser with diverse specifications, according to the needs, either soft or rigid with a plunger as has been described in detail in the body of the description.

That is, the toothbrush is composed of two parts, the first being the cartridge that acts as a handle and the second

one is the tube that ends on the bristles' head and the lower end of which contains a female thread which perfectly screws on the handle. The handle is a mixed or single distributor that may dispense toothpaste or toothpaste/mouthwash.

The upper tube of the brush has an inner channel running along its body up to the bristles, with the necessary number of exits through which the toothpaste and the mouthwash flow until they reach the top.

2. Toothbrush with mixed cartridge enabling automatic injection characterized in that, as has been claimed in the preceding clause, represents an innovative device which, due to its composition and channels for the distribution of the content, allows for a supply of toothpaste and/or mouthwash to the bristles above in a single movement, thus eliminating the need to carry more than one cleaning device or element, apart from being of great utility for persons with disabilities, saving time and space and allowing for a pleasant tooth brushing wherever there is a tap of water.

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