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(54) Utensil for cleaning teeth and freshening breath

(57) Utensil for cleaning teeth, disposable, with a handle which may be either of a set length or be extensible through a rotating extension, and which contains a dose of toothpaste. The handle shows, at one end; a slot, shaped in such a way as to allow it to be inserted in a rectangular cubic body (3), slightly longer than the slot (2) itself and which is made up of two superimposed layers of spongy material:

almost a half of the lower layer (6), not used for cleaning the teeth, is inserted halfway into the slot (2) and is made up of very soft spongy material; the upper layer (5), which does come into contact with the teeth, is made up of a more rigid sponge which remains completely outside the slot (2). A space is made in the interface (4) where a dose of toothpaste is injected. All that has been previously described can be sold ready assembled in single packs or, eventually, with one or two spare spongy heads which can be changed once, twice, or three times a day (morning, after lunch, evening).

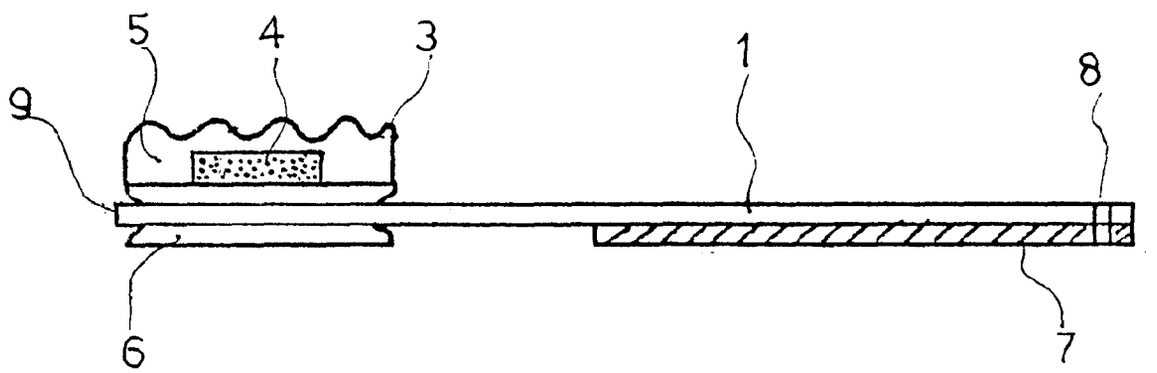

FIG.5

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Description

Technical Geld

Utensil for cleaning teeth and massaging gums, ready to be used and of the "disposable" type, made up of a handle which can be either fixed or extensible, which has a rotating extension; and a cleaning element containing a dose of toothpaste, elements which can be removably linked.

State of the Art

Countless types and models of devices for cleaning teeth, all of which are basically made up of a handle, which can be of various lengths, and a head provided with bristles, are well known.

Also well known are toothbrushes which are provided with interchangeable cleaning heads or with devices which dispense toothpaste; that is, with capillaries or holes placed longitudinally along the handle and the cleaning head which make it possible to feed toothpaste onto the bristles situated on the head, from a container attached to the handle, or which itself acts as a handle.

Not only these kinds of toothbrushes, but also those normally on sale wrapped in a protective cover or bag, which, once opened, make it possible to actually use the toothbrush, cannot really be used as "disposable", as this would be too expensive; therefore if one is traveling or is temporarily staying in such a place as a hotel, a restaurant or a friend's home, after a meal it is not always possible to brush one's teeth with a "disposable" toothbrush, thus guaranteeing perfect hygiene, given that a "disposable" toothbrush would be difficult to find, as to use it only once would be uneconomical.

Toothbrushes containing toothpaste and/or with a dispenser of a pre-quantified dose of toothpaste have shown problems regarding the ducts for the exit of the toothpaste. These, in fact, are easily choked, thus representing a negative element as far as hygiene is concerned.

If one decides to carry a toothbrush in a case and a tube of toothpaste, this is for obvious reasons impractical to keep in a suitcase, above all after use, given that a toothbrush does not dry very quickly; it is possible therefore, to understand how useful a small device, which is really economical and which insures perfect hygiene, or at least hygiene of a quality better than that of the aforesaid types, could be.

In accordance with what dentists recommend, when using toothbrushes with bristles, in order to carry out a correct cleaning action, the bristles must move from the gums towards the teeth, an operation which is rather uncomfortable and disagreeable, and which, in many cases, is a cause of irritation and bleeding from the gums, as well as of wear and tear on tooth enamel; therefore manufacturers must use cleaning bristles made from very flexible and rather expensive material; this type of bristle, however, needs prolonged action and cleaning is less effective than that which could be obtained if the bristles were more rigid.

Aims and advantages of the invention.

The aim of this invention is to propose a device for cleaning teeth which overcomes the inconveniences of existing toothbrushes, however they are shaped, and which, in particular, allows any part of a set of teeth to be cleaned with ease, beginning from the gums and working towards the upper part of the teeth, without, however, irritating the gums or causing abrasions on tooth enamel, since, in fact, it is possible to operate using a pressure which is impossible to obtain when using a normal toothbrush with bristles, as well as guaranteeing, if not perfect cleanliness between the teeth, at least the removal of stains and residues of food and ensuring oral freshness.

Another aim of this invention is that of obtaining a utensil for cleaning teeth which is ready for use and "disposable", and therefore is cheap and functional and which can also be sold in automatic vending machines installed in places of temporary transit such as hotels, hospitals, schools, airports, railways stations etc. .

Another aim of this invention is to realize a handle which may be used comfortably by any user, whether a child or an adult.

Another aim of this invention is to allow, in critical circumstances, the cleaning of teeth or the massage of gums, for children or handicapped people who are incapable of using both hands to place toothpaste on a toothbrush.

Another aim of this invention is to obtain perfect hygiene by using this utensil.

The tasks and aims mentioned above, as well as others which will be shown in detail in the following pages, are reached by a utensil for cleaning teeth and massaging gums which includes a massaging cleaning head made of spongy material, supplied with a dose of toothpaste, which is interchangeable and which can be inserted on the end of a handle equipped with an extension.

Description of the drawings

These and other characteristics and advantages, will be made evident by the description which follows and by the following enclosed drawings, which are supplied only as an approximate and not as a restrictive example:

Figure 1, shows a schematic view of the handle with its rotating extension.

Figure 2, shows, schematically, a lateral view of the cleaning head.

Figure 3, shows, schematically, a frontal view of the cleaning head.

Figure 4, shows, schematically, a general view of

the utensil as seen from above, according to this invention.

Figure 5, shows, schematically, a general lateral view of the utensil according to this invention.

(1) indicates a relatively rigid, straight rod which acts as a handle made in sizes which are the smallest possible if the utensil is to be of use. To allow a better grip, above all in the case of larger hands, or to obtain a more comfortable usage, this rod call be lengthened by an extension (7) which rotates around a central pin (8) placed at the end of the rod itself.

This handle can be made in a very cheap, biodegradable material such as wood, for example, like the sticks used for ice-creams. The other end of the handle is shaped in such a way as to form a first, very narrow slot, (10) and then a larger, rectangular shaped concurrent slot, elongated longitudinally in respect to the rod itself (1) is superimposed in such a way as to create a fitment (2). Laterally this fitment also forms two flexible longitudinal appendixes (9). (3) indicates a cubic rectangular body made of two superimposed layers of spongy material. (6) indicates the lower layer of spongy material which is softer than the upper one. This layer is made specially for insertion into the fitment (2). All that is necessary is to squeeze it between two fingers and push it through the slot (10) until it is about halfway into the fitment (2). The operation is very simple both when inserting the body (3) and when it is necessary to remove it after usage, as the two rods (9) are quite elastic. The length and width of the base of the spongy layer (6) is slightly more than that of the fitment (2) so that once the former is inserted into the latter, the natural expansion of the sponge is enough to keep it in place during use. The upper spongy layer (5) is made of a material which is as rigid and rough as is necessary to clean the teeth without scratching them, as well as to massage the gums without irritating them. The two spongy layers (5) and (6) can be joined by a polymerization process or by any other suitable process. Within the interface of these two layers and inside the spongy part itself (6), a space (4) has been left into which a dose of toothpaste is injected. This toothpaste could contain a foaming or antiseptic substance, a product against halitosis, against tartar and caries, against paradentosis or against gingivitis. The substance may be injected in a lyophilized or powder form so that with the addition of water, toothpaste is obtained. The way in which the substances are inserted into the cleaning head, which clearly acts as a dispenser, is specific to this invention. Through the combined actions of the cleaning pressure and of the water (or even of the saliva present in the mouth) the toothpaste slowly spreads through the sponge, producing a large quantity of foam; moreover, surprisingly, the foam produced remains for a long time on the surfaces on which the cleaning head is operating, thus helping the cells of the sponge to attract, absorb and remove any residues of food, resulting consequently in a perfect cleanliness of all those parts of the mouth which are usually difficult to reach. The sponge, therefore, drags and absorbs while softly caressing and massaging not only the teeth but also the gums, and functioning for as long as is necessary. As is made clear in figures 4 and 5, the spongy part almost completely covers the end of the rod (1) so that the gums are always in contact with the spongy layers but not with the rod (1) itself; therefore no problems can arise, even when using the utensil to clean the parts at the back of the molar teeth.

Another advantage is given by the high flexibility of the cleaning device (3), which, in cooperation with the rods (9), is capable of adapting itself better than anatomic toothbrushes with inclined heads, to the shape of any set of teeth, while, at the same time, closely following the movement of the handle during cleaning. In this way it is possible to clean the teeth by pressing on them and on the gums, without provoking any inconvenience, unlike toothbrushes provided with bristles.

The spongy layer (5) could have an upper surface, that which operates on the teeth, completely flat, slightly concave or convex, wave-like or serrate, according to the users' requirements or according to the way in which the utensil is to be used.

This invention can be put on the market either in sets, with one or more spare and duly protected cleaning heads (3), so as to insure maximum hygiene, or in single packs containing only cleaning heads.

As is made clear by the description, the invention proposes a new utensil, which is comfortable and useful for freshening breath at any time or to remove, in the same way as normal toothbrushes do, or even better then they do, in a very short time, tartar and residues of food between the teeth or between the teeth and gums without damaging tooth enamel or the fleshy tissue of the gums. Since the invention can be used with both a horizontal and a vertical movement; this results in a certain saving of toothpaste; since this last is automatically gradually dispensed and always dosed with the maximum efficiency.

Claims

1. Utensil for cleaning teeth and massaging gums, ready to be used and "disposable", made up of a handle and a cleaning element removably linked together characterized by the fact that the handle is provided, at one end, with all oblong fitment (2) shaped in such a way as to allow a cubic rectangular body (3), slightly longer than the fitment itself, to be inserted into it. This body is made up of two layers of spongy material within the interface of which, towards the upper part, there is a slot (4) where a dose of toothpaste can be pre-injected.

2. Utensil as in claim 1), characterized by the fact that the body (3) constitutes the interchangeable clean-

ing head.

3. Utensil as in claim 1), characterized by the fact that the body (3) also functions as a dispenser of toothpaste or other substances pre-injected into it.

4. Utensil as in claim 1), characterized by the fact that the layer (5) of the body (3) is made up of spongy material as rigid and rough as is necessary to clean teeth without scratching them, as well as to massage gums without irritating them.

5. Utensil as in claim 4), in which the spongy layer (5) has an upper surface which call be flat, wave-like or serrate.

6. Utensil as in claim 1), characterized by the fact that the layer (6) of the body (3) is made up of spongy material salt enough to enable it to be inserted, by squeezing it between two fingers, halfway into the slot (2).

7. Utensil as in claim 1), characterized by the fact that its handle is made of a fixed or extensible rod of economic material, with an extension (7) which rotates around a pin (8) placed at the end of the rod itself.

8. Utensil for cleaning teeth as in claim 1), characterized by the fact that the slot (2) opened in the handle (1) is formed by suitably flexible vertical elements (9) at the end of which, a narrow slot opens, upon which is superimposed a larger rectangular, elongated slot which is the seat (2) of the spongy layer (6) of the body (3).

9. A tooth cleaning and gum massaging process carried out by the utensil as in claim 1), and following claims, characterized by the fact that toothpaste or other pre-injected substance is released slowly and profitably since the foam produced during the cleaning of the teeth adheres to the sponge for a long time, which helps the cells of the sponge itself to englobe and attract any residues of food.

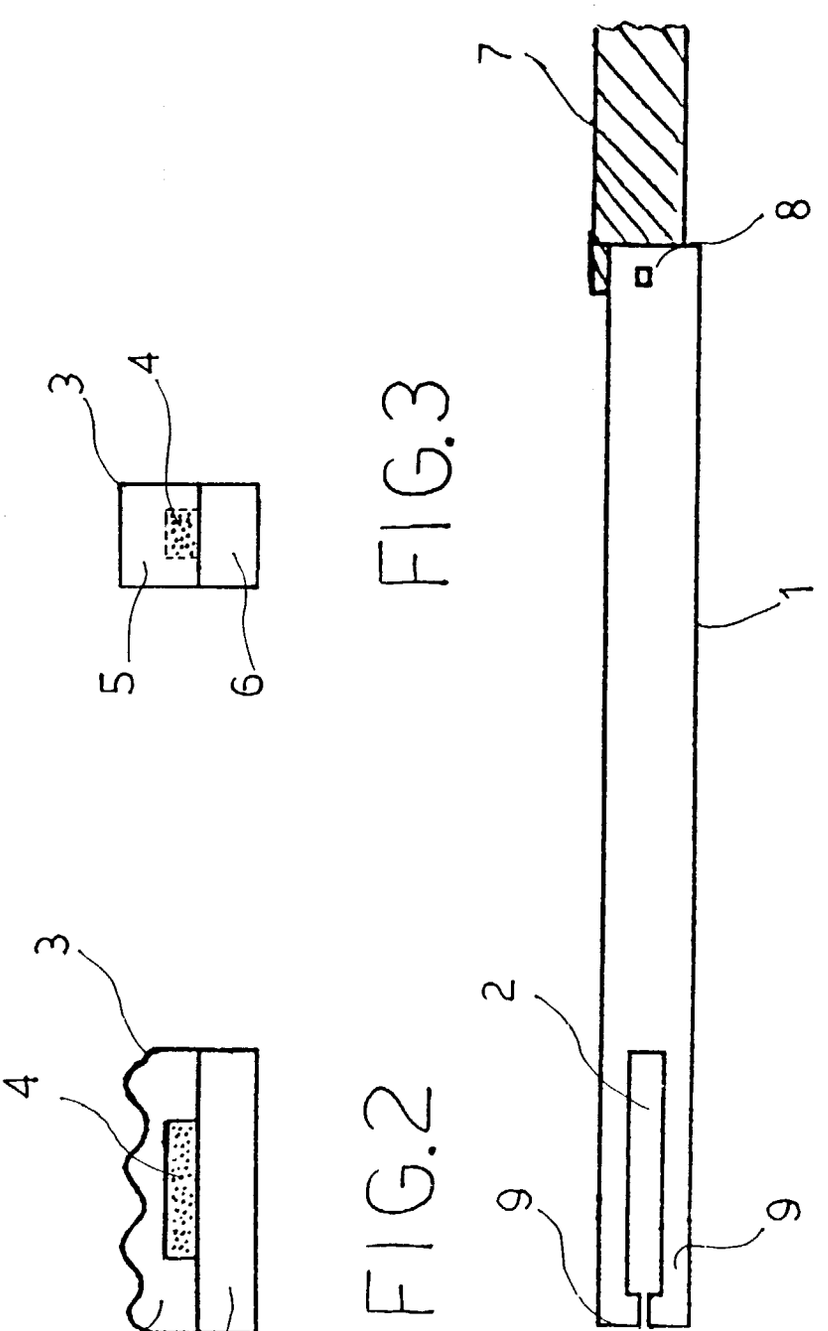

FIG.1

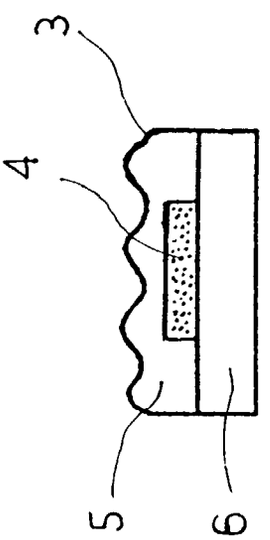

FIG.2

FIG.3

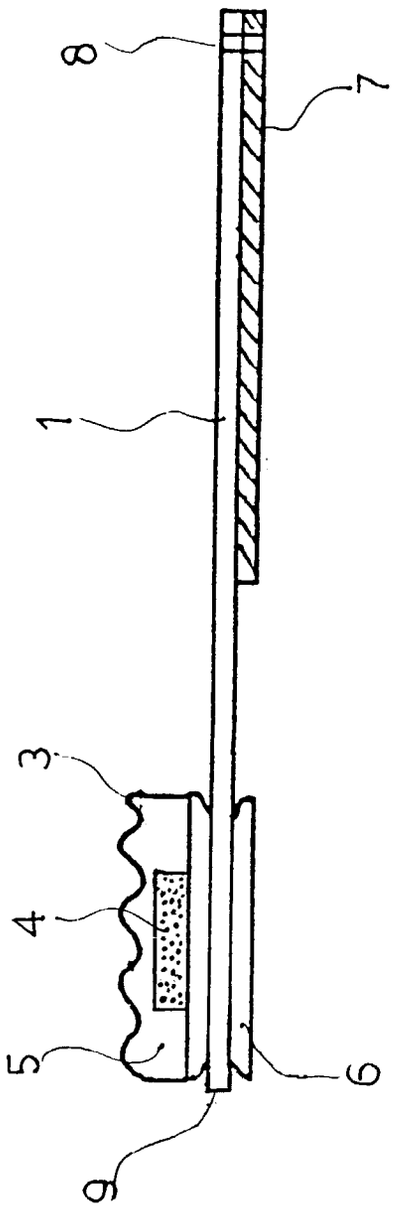

FIG.5

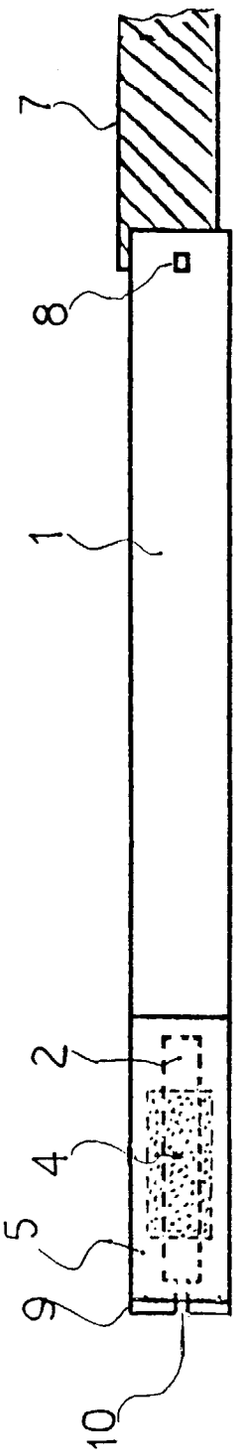

FIG.4