

[54] DISPOSABLE TOOTHBRUSH

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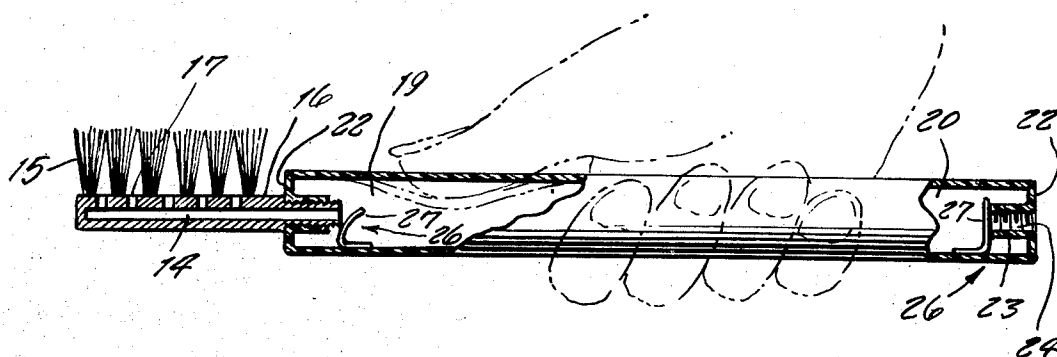
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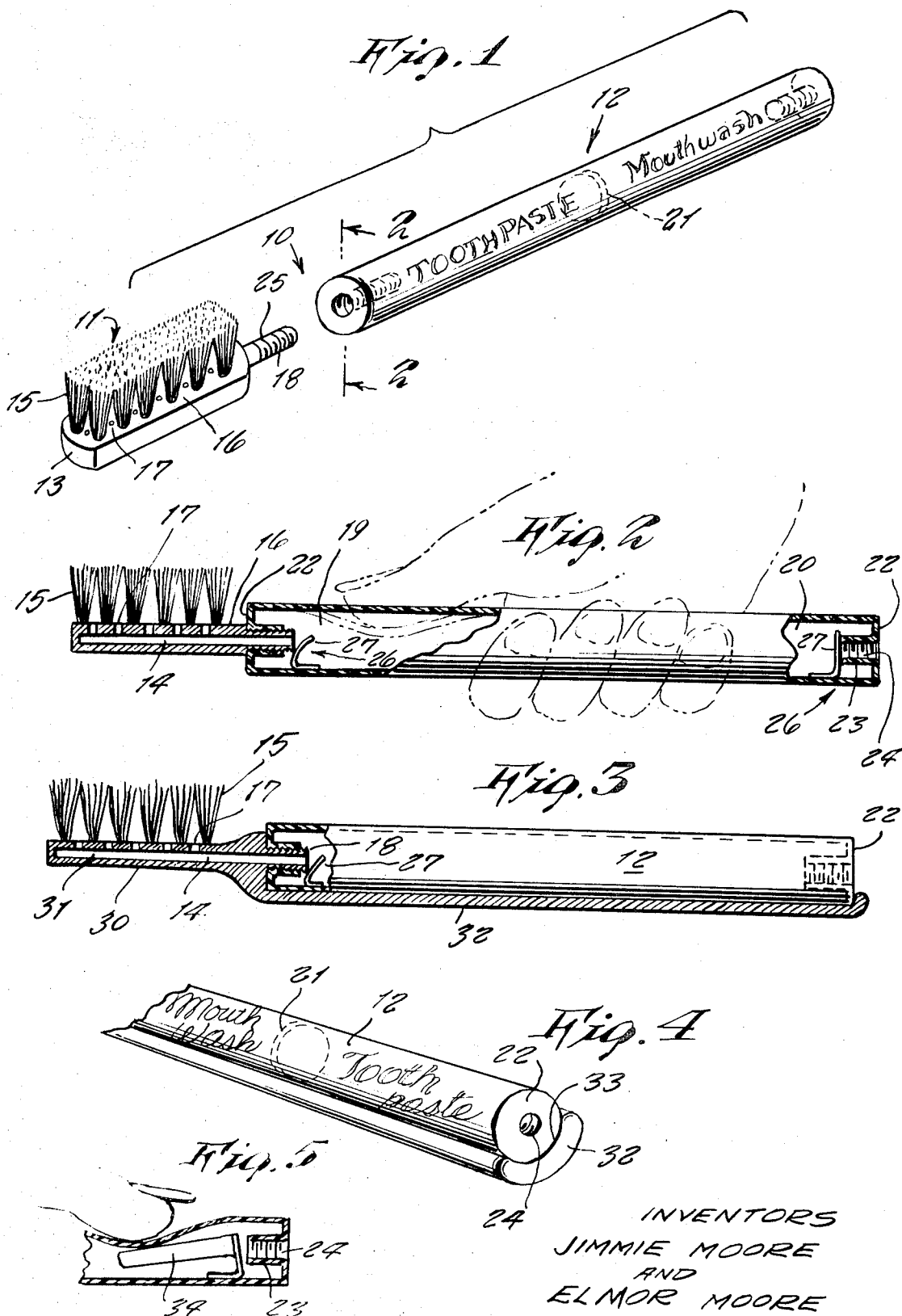
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ABSTRACT

A novel toothbrush that includes an elongated handle made of resilient plastic material, the handle being hollow so to form a compartment within each opposite end thereof, one compartment containing toothpaste and the other compartment containing mouthwash, and the opposite ends of the toothbrush handle being attachable to a removable brush head that includes a hollow base upon which brush bristles are supported, the hollow base being adaptable to receive the toothpaste or mouthwash from the elongated handle, and the base being perforated so to permit the toothpaste or mouthwash to flow outward upon the brush bristles.

5 Claims, 5 Drawing Figures





DISPOSABLE TOOTHBRUSH

This invention relates generally to toothbrushes.

More specifically it relates to toothbrushes of disposable type.

A principal object of the present invention is to provide a disposable toothbrush wherein there is an interchangeable cartridge attachable to a brush member.

Another object of the present invention is to provide a disposable toothbrush wherein the cartridge contains toothpaste and mouthwash and wherein means are provided for each of these materials selectively being delivered to the brush bristles.

Still another object of the present invention is to provide a disposable toothbrush wherein the cartridge forms a handle element of flexible material, and whereby it may be depressed with a person's hand to discharge the toothpaste or mouthwash from the cartridge into the brush element and out upon the bristles of the brush.

Still another object of the present invention is to provide a toothbrush of disposable nature which eliminates the necessity of handling a separate toothpaste tube during toothbrush operation, thereby accomplishing the same with less effort.

Still another object of the present invention is to provide a disposable toothbrush which does not require recapping after each toothbrushing operation such as is practiced when the toothpaste tube is a separately handled item.

Other objects are to provide a toothbrush of disposable nature which is simple in design, inexpensive to manufacture, rugged in construction, easy to use and efficient in operation.

These and other objects will be readily evident upon a study of the following specification and the accompanying drawing wherein:

FIG. 1 is an exploded perspective view of the elements comprised in the invention,

FIG. 2 is a cross-sectional view taken on the line 2—2 of FIG. 1,

FIG. 3 is a side elevation view shown partly in cross section and illustrating a modified form of the present invention,

FIG. 4 is a fragmentary perspective view of the rear end of the toothbrush handle, and

FIG. 5 is a fragmentary side cross-sectional view of still another modified form of the invention.

Referring now to the drawing in detail, the reference numeral 10 represents a disposable toothbrush according to the present invention wherein there is a brush member 11 and a cartridge 12 which is selectively securable to the brush member.

The brush member comprises a plastic body 13 which is hollow having a central chamber 14 there within.

A plurality of tough bristles are secured upon one side 16 of the body 13 and a plurality of openings 17 are provided on the side 16 and located between the tufts of bristles.

The openings 17 provide communication between the chamber 14 and the outer side. A hollow, externally threaded spout 18 is formed at one end of the body 13 and provides a communication between the chamber 14 and the cartridge 12 which is a device securable upon the spout.

The cartridge 12 comprises an elongated cylindrical member made of flexible thin-walled plastic material

whereby it may be pressed with the fingers such as is shown in FIG. 2 of the drawing, the cartridge including a pair of central chambers 19 and 20 separated by an intermediate partition 21 and one of the chambers being adaptable for containing toothpaste and the other chamber for containing mouthwash.

Each of the chambers has an identical end wall 22 having an inwardly extending sleeve 23. The sleeve is internally threaded as shown at 24 for engagement with the external thread 25 upon the spout 18.

A valve 26 is located within each of the chambers for normally maintaining the chamber closed relative to the sleeve. Various types of valves may be employed for accomplishing the same, all of which are known in the art.

However, the drawing illustrates a simple valve comprising a flexible flat valve 27 which normally bears against the end of the sleeve, but which is pushed backwardly out of the way when the spout is inserted into the sleeve.

It will be noted that to accomplish the same, the spout is longer than the sleeve such as is shown in FIGS. 2 and 3 of the drawing so that when the brush member and the cartridge are engaged, the valve is in an open position thereby allowing passage of toothpaste or mouthwash into the brush.

In operation, a person merely attaches either end of the cartridge to the toothbrush and then simply depresses the side wall of the cartridge as shown in FIG. 2, whereby the material will pass through the spout into the chamber 14, then outwardly through openings 17 and upon the bristles 15. By simply removing the cartridge from the brush member, the flat valve 27 will close automatically.

In a modified construction, shown in FIGS. 3 and 4, there is shown a brush member 30 which includes a head 31 and an integral longitudinal semicylindrical handle portion 32.

In this form of the construction, the device is operated as above.

The head 31 includes likewise a chamber 14, openings 17 and bristles 15. The cartridge 12 is described above in the first form of the invention, and the same can be fitted in this form of the invention into the semicylindrical depression 33 formed by the handle portion 32, and the cartridge then screwed upon the spout 18 as above described.

While various other forms of the invention may be made, yet another is shown in FIG. 5 wherein the valve 27 includes a rigid arm 34 secured thereto and which is depressed downwardly when the cylindrical side of the handle is depressed, thereby causing the valve to be opened up.

In this form of the invention, the spout on the brush member is relatively shorter so that when engaged in the sleeve, the same does not automatically open up the valve such as is described in the above forms of the invention in FIGS. 2 and 3.

This form of construction is particularly suitable for use on the mouthwash compartment so that when the finger pressure is released from the side of the toothbrush handle, the valve will automatically close over the end of the sleeve.

What we now claim is:

1. A toothbrush comprising a brush member and a cartridge, said brush member including a body having bristles and having a spout, and a passageway within

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said body, said passageway having an inlet portion extending through said spout and a discharge orifice between said bristles, said cartridge being hollow and having a chamber for containing material to be fed through said passageway to said bristles, said cartridge having an outlet opening for tight connection with said spout of said brush body, and a displaceable valve within said cartridge for impeding flow of material from said chamber through said outlet opening, said displaceable valve having an operating arm within said chamber, at least a portion of an external wall of said chamber being sufficiently flexible so that it may be inwardly deformed by external finger pressure so as to engage said arm and open said valve.

2. A construction as defined in claim 1, wherein said spout of said brush body is externally threaded and said

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outlet opening of said cartridge is internally threaded to be screwed tightly onto said spout.

3. A construction as defined in claim 1, wherein said cartridge when connected to said brush body constitutes a handle for manipulating said brush member.

4. A construction as defined in claim 1, wherein said brush body has an elongated handle integral therewith, said handle having a longitudinal recess of arcuate cross section for receiving said cartridge.

5. A construction as defined in claim 1, wherein said cartridge has two chambers, one at each end of the cartridge, each chamber having its own outlet opening and its own displaceable valve, one chamber being adapted to contain toothpaste and the other chamber being adapted to contain mouthwash.

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