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L. H. BLOOM

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STRIPING DISPENSER

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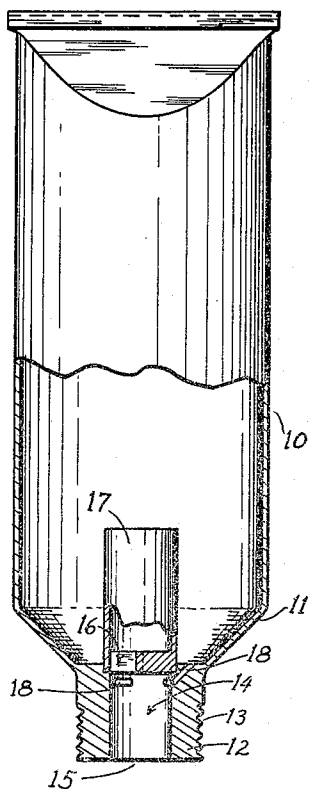


Fig. 1

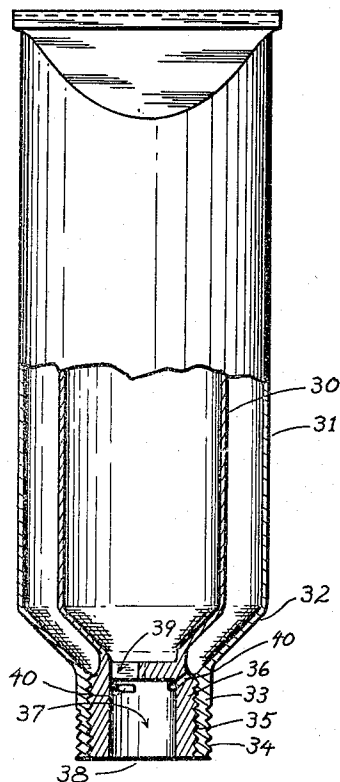


Fig. 3

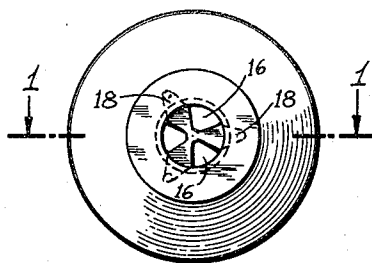


Fig. 2

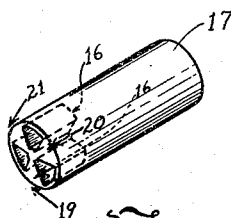


Fig. 4

INVENTOR.
LEE H. BLOOM

BY
Brambrough, Free, Kramer & Donahue

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STRIPING DISPENSER

Lee H. Bloom, Larchmont, N.Y., assignor to Lever Brothers Company, New York, N.Y., a corporation of Maine

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The invention relates to an improvement in devices for dispensing fluent or paste-like materials of different character and particularly to improvements in dispensing two or more paste-like materials of different color.

In one aspect of the invention, it is particularly applicable to coaxial collapsible dispensing tubes for producing a striped tooth paste product. The coaxial collapsible dispensing tubes heretofore known have been concerned with maintaining two chemically reactive ingredients in separation until they are dispensed. When such devices are attempted to be used to produce a striped tooth paste product, it has been found that they are virtually inoperative to produce such a product which is commercially acceptable.

One of the principal disadvantages in the use of the dual coaxial tube arrangement for producing a striped tooth paste product is that the space between the inner tube and the outer tube, which space contains the striping material, must be so small to contain the small amount of striping material needed to form only a thin surface stripe without spreading over the remaining surface of the paste stream that considerable difficulty is experienced in filling this space. The problem, therefore, is to provide a structure for utilizing the total amount of striping paste which is contained in this space commensurate with ease in filling.

In another aspect of the invention, it is applicable to the single tube type dispenser. In this arrangement the invention operates in the same manner as it does with the coaxial tube dispenser. Sufficient paste material to furnish the striping is provided by extending the main discharge passage into the interior of the tube a short distance, surrounding it with striping paste material, and providing additional discharge passages or ports therefor. This arrangement likewise would utilize only a very small and critical amount of striping paste if only a thin surface stripe is to be provided.

Accordingly, it is a principal object of the present invention to provide a structure for producing a striped tooth paste product which permits the striping material to extend substantially to the center of the stream of tooth paste.

Another object of the invention is to provide a construction for dispensing striped tooth paste.

A further object of the invention is to provide a striped tooth paste product utilizing paste material of two different characteristics without having one paste material be exhausted before the other.

It is also an object of the invention to provide a construction for utilizing paste material of two different characteristics to produce a unitary stream.

Generally, the invention includes a plurality of circumferentially disposed pie-shaped or substantially triangular outlet passageways at the inner end of the discharge passageway of a collapsible tube dispensing container. Paste material from a body of one characteristic will be extruded through each of these pie-shaped passageways into the discharge passage to provide a portion

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of a main stream. A second plurality of passageways communicate between a body of paste material of a different characteristic and the discharge passageway to fill in the spaces between the pie-shaped extrusions from the first body of paste material thereby producing a unitary stream of paste material.

The various novel features of construction, combination and relation of parts by which the foregoing and other objects are attained are set forth in detail in the following specification.

The drawing accompanying and forming part of the specification illustrates one practical commercial embodiment of the invention as applied to a paste dispensing tube. It should be understood, however, that the invention is not limited to this use or to this particular form of structure or dispenser as will appear from the scope of the appended claims.

In the drawing:

Figure 1 is a view partially in section showing the construction of the invention for a single tube type of dispenser;

Figure 2 is an end view of the construction shown in Figure 1;

Figure 3 is a view partially in section showing the construction of the invention for a dual tube type of dispenser; and

Figure 4 is a perspective view of the insert used with one form of the single tube type of dispenser and provided with pie-shaped outlet passageways according to one embodiment of the invention.

For the purposes of this description, it will be assumed that the dispensing device is to be used to dispense tooth paste which presents the appearance of being striped, it being understood that the invention is not limited to tooth paste or to the specific characteristics of the structure described.

Referring first to the single tube type dispenser, Figure 1 of the drawings shows a conventional disposable aluminum tube dispensing container 10 with a sloping forward end 11 terminating in a head end 12. The outer surface of the head end 12 is provided with a plurality of threads 13 for securing a cap (not shown). The discharge passageway 14 of the tube 10 extends from a discharge port 15 at the outer end to a plurality of pie-shaped outlet passageways 16 at the inner end. The outlet passageways 16 may be formed in one end of an insert 17 as shown in Figure 4, or they may be formed integrally with the discharge passageway 14 and, therefore, separate from the insert 17.

The spaces intermediate of the outlet passageways 16 are communicated by means of a plurality of passageways 18 with a zone defined between the sloping forward end 11 and the hollow insert 17. This is illustrated more clearly in Figure 4 which diagrammatically indicates that the passageways 18 communicate with the discharge passageway 14 at the points 19, 20 and 21 intermediate each of the outlet passageways 16 in the hollow insert 17.

The dispensing container 10 is first filled with the materials to be dispensed in the form of a striped stream by first charging into the dispensing container the material which is to give the appearance of the stripes (i.e., a red tooth paste, for example). This material is charged into the head end of the dispensing container 10 about the hollow insert 17 in such a quantity that it does not fill the container beyond the point to which the inner end of the insert 17 extends into the container. The material which is to form what will appear to be the body of the striped tooth paste (i.e., white tooth paste, for example) is then charged into the dispensing container 10 to fill the balance of the container space.

In operation, the pressure applied to the dispensing

container 10 in the usual manner forces the white tooth paste through the center of the hollow insert 17 and through each of the pie-shaped outlet passageways 16. The pressure applied to the container is transmitted by the white tooth paste longitudinally in a forward direction to the red tooth paste which is packed in the head end of the dispensing container 10 about the hollow insert 17. As a result of this pressure, the red tooth paste is forced through the passageways 18 to fill the space between each of the streams provided by the outlet passageways 16 thereby forming in the discharge passageway 14 a completed stream of striped tooth paste. Since the striping material (red tooth paste) forms a substantial part of the unitary striped tooth paste product, the length of the hollow tubular member 17 may extend back into the container 10 past the sloping forward end 11 thereby providing ample space to contain sufficient striping paste for the total amount of tooth paste contained in the balance of the container 10.

The invention has particular applicability with the dual coaxial type of tube construction. With this type of construction, ample space may be formed between the inner tube and the outer tube to permit ease in filling since a substantial amount of the striping paste is used with a construction according to the present invention. As shown particularly in Figure 3 of the drawing, the numeral 30 represents an inner collapsible container of any suitable material such as a conventional disposable aluminum tube dispensing container. Formed coaxially about the inner tube 30 is an outer tube 31 which is formed of the same material. The sloping forward end 32 of the outertube 31 terminates in a head end 33 which is provided with a plurality of threads 34 for securing a cap (not shown). The inner surface of the head end 33 is provided with a plurality of threads 35 into which is threaded the head end 36 of the inner tube 30. Of course the head ends 33 and 36 of the coaxial tubes 31 and 30, respectively, may be attached or positioned by any other suitable means, if desired.

A discharge passageway 37 extends from a discharge port 38 at the forward end of the head end 36 back to a plurality of pie-shaped outlet passageways 39 which are similar to the outlet passageways 16 as shown in Figure 2 of the drawing. A plurality of passageways 40 communicate the spaces intermediate of the outlet passageways 39 with the space between the inner tube 30 and the outer tube 31.

In operation, the tooth paste which is to form one part of the striped stream is filled into the inner tube 30, as for example, white tooth paste. Tooth paste of another color, as for example, red, is filled within the space between the inner tube 30 and the outer tube 31. By applying pressure to the dispenser in the customary manner, a plurality of pie-shaped streams of white tooth paste are formed by the outlet passageways 39 and the space between each of these streams is filled by red tooth paste from the passageways 40. Thus, as the stream is extruded out the discharge passageway 37, the resulting product will have the appearance of a striped tooth paste product.

While the invention has been described with reference to the particular construction shown, it is not restricted

to the exact details herein disclosed and this application is intended to cover such modifications or changes as may come within the purposes of the invention or the scope of the following claims.

I claim:

1. A device for dispensing striped tooth paste comprising a container having a neck with a tubular discharge passageway therein, the discharge passageway opening at one end externally of said container and opening at the opposite end at a first plurality of substantially triangular outlet passageways in open communication with the container, each triangular passageway being positioned with an apex thereof generally toward a central axis defined by the discharge passageway and being spaced apart radially from each other, the container having a first zone including that portion of the container disposed about the triangular passageways, the first zone being adapted to contain tooth paste of one color, and a second zone into which the triangular passageways terminate in open communication and adapted to contain tooth paste of another color, and a second plurality of outlet passageways communicating between said first zone and points in said discharge passageway radially intermediate of the triangular passageways, the triangular passageways providing means for forming an incomplete stream of paste of one color having circumferentially disposed spaces therein extending to the center of the stream and the second plurality of passageways forming means for filling the spaces in the incomplete stream with paste of another color to form a unitary stream of striped tooth paste.

2. A device for dispensing paste materials comprising a plurality of concentrically disposed collapsible tubes, the inner of said concentrically disposed tubes having a first plurality of pie-shaped outlet passageways communicating between said inner tube and one end of a discharge passageway, each of said first plurality of passageways being positioned with an apex thereof generally toward a central axis defined by said discharge passageway and being spaced apart radially from each other, the opposite end of said discharge passageway terminating at a discharge port opening externally of said tubes, said pie-shaped outlet passageways providing means for producing an incomplete stream of paste material having circumferentially disposed spaces therein extending to the center of the stream in said discharge passageway, and a second plurality of outlet passageways communicating between an outer concentrically disposed tube adapted to contain a dissimilar paste material and said discharge passageway at points radially intermediate of the pie-shaped passageways, the second plurality of outlet passageways forming means to fill the spaces in the incomplete stream with paste of dissimilar color to form a unitary stream of paste material.

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