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1,975,967

COLLAPSIBLE TUBE

Filed Nov. 28, 1933

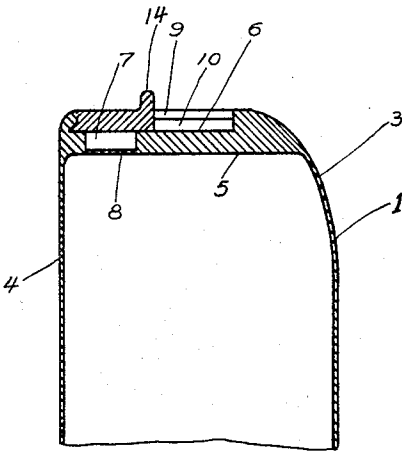


FIG. 2

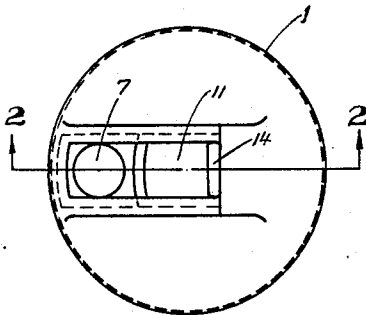


FIG. 1

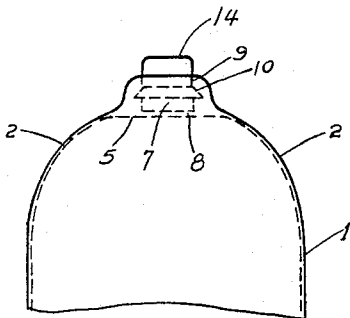


FIG. 3

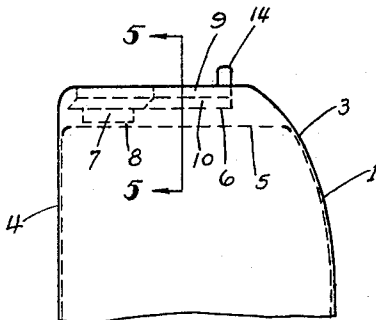


FIG. 4

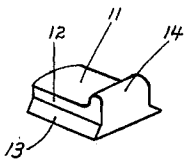


FIG. 6

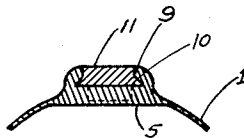


FIG. 5

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COLLAPSIBLE TUBE

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3 Claims. (Cl. 221—60)

This invention relates to improvements in collapsible tubes and pertains particularly to an improved form of tube cap.

The primary object of the present invention is to provide a collapsible tube having an improved means of closing the outlet opening therefor whereby the extruded substance will be cleanly cut off and none thereof will remain exposed to gather dust and dirt.

Another object of the invention is to provide a collapsible tube having a head formed in a novel manner whereby the outlet opening remains sealed until the contents of the tube are desired for use, whereupon the sealing membrane or film overlying the opening may be readily broken to permit the contents to be ejected.

A still further object of the invention is to provide a collapsible tube having a sliding shut-off for the outlet opening which is coupled with the head of the tube in a novel manner.

The invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawing forming part of this specification with the understanding, however, that the invention is not confined to any strict conformity with the showing of the drawing but may be changed or modified so long as such changes or modifications mark no material departure from the salient features of the invention as expressed in the appended claims.

In the drawing:—

Figure 1 is a view in top plan of a tube and cap constructed in accordance with the present invention.

Figure 2 is a sectional view taken on the line 2—2 of Figure 1.

Figure 3 is a view in front elevation of the tube showing the formation of the head portion thereof.

Figure 4 is a view in side elevation of the head portion of the tube.

Figure 5 is a sectional view through the head portion of the tube taken on the line 5—5 of Figure 4.

Figure 6 is a view in perspective of the cut-off slide.

Referring to the drawing wherein like numerals of reference designate corresponding parts throughout the several views, the numeral 1 indicates generally a tube of soft metal material of the type commonly employed for marketing cold cream, shaving cream and toothpaste, the

upper portion only of such a tube being illustrated.

In carrying out the present invention, the side walls of the tube are rounded so as to converge at the top or head end of the tube as indicated at 2, and one edge wall is also rounded, as indicated at 3, while the opposite edge wall runs straight to the top of the tube, as indicated at 4.

The top end of the tube comprises a head 5 of metal which is integral with the walls of the tube, as illustrated, and which head is generally of elongated rectangular outline, one end thereof being in the same plane as the straight edge wall 4 as shown in Figures 2 and 4.

The outer surface of the head body 5 is provided with the longitudinally extending relatively shallow recess 6 and at the end of the head nearest the edge wall 4, the bottom surface of the recess is drilled out, as at 7, so that the bottom is separated from the interior of the tube only by the end thin film-like wall 8. This opening 7 constitutes the outlet passage for the tube when the film 8 is broken and is located adjacent the forward end of the body 5 which constitutes the head of the tube. The side and forward end walls of the recess 6 are cut straight down from the top surface of the head a distance approximately half the depth of the recess and are then inclined outwardly or away from the recess to form the vertical and flared portions 9 and 10, respectively.

Disposed in the recess 6 is a shut-off slide which is in the form of an elongated plate 11, and which has its longitudinal side edges and one end edge divided into the vertical and outwardly flaring or beveled wall portions 12 and 13, respectively, which correspond to the wall surfaces 9 and 10 of the recess 6 and contact therewith when the slide is in operative position. The opposite end of the slide is provided with the upstanding lip 14 which facilitates the engagement of the finger with the slide so that the latter may be shifted in the recess 6 for the covering or uncovering of the outlet opening 7.

It will be noted that the thickness of the slide 11 is such that the top surface lies flush or in the same plane with the top surface of the head 5, so that a neat finished-off appearance is given the head as a whole when the slide is in place.

As the ends of the recess 6 are closed, it will be apparent that the movement of the slide therein is limited and it will be seen that when the slide is moved to its extreme forward position, the previously uncovered beveled edge will

engage the undercut wall in the end of the recess and thus form a tight joint. At the same time, this forward end edge of the slide operates in the nature of a knife to cut off the strip of paste which has been ejected from the outlet opening of the tube and as it fits very snugly in the forward end of the recess, all of the paste will be forced out and there will be none left to pick up dust and dirt, so that when the slide is again retracted and more paste ejected, the same will come out in clean condition.

From the foregoing, it will be readily apparent that in addition to providing a clean and sanitary means of closing the discharge opening of a collapsible tube, the cap herein disclosed is such that it gives an attractively finished appearance to the head of the tube and also the means for opening and closing the outlet opening cannot be mislaid, so that the presence of a means for shutting the tube is also assured.

What is claimed is:—

1. A dispensing tube comprising a collapsible body having a thickened integral end portion constituting a head, the head being formed to define a rectangular recess extending inwardly from the upper face of the head and having side walls and end walls, the recess being closed at both ends by the end walls and having its side walls and one of its end walls overhanging, the bottom of the recess adjacent the overhanging end wall being formed with a dispensing opening smaller than the recess and extending inwardly toward the body and a rectangular slide disposed in said recess and fitting tightly against the floor of the recess and held from detachment by the overhanging walls of the recess, the slide having a length that it may be shifted longitudinally in said recess to entirely disclose said opening or entirely close it, the slide having a beveled cutting edge on its end adjacent the opening, the cutting edge when the slide is closed fitting beneath the overhanging end wall of the recess.

2. A dispensing tube comprising a collapsible body having a thickened head, the head being

relatively narrow, the front of the tube extending in a straight line to one end of the head, the lateral portions of the tube and the rear of the tube extending inwardly to the margins of the head, the head being formed to define a rectangular recess extending diametrically of the tube, said recess having side walls and closed at its ends by end walls, the recess having its side walls and one of its end walls overhanging, the bottom of the recess having a dispensing opening smaller than the recess adjacent the last named end wall and extending in toward the body, and a rectangular slide disposed and retained in said recess and held close against the floor of the recess by the overhanging walls thereof, the slide having a length such that it may be shifted longitudinally in said recess to entirely disclose said opening or to close the opening, the slide having a beveled cutting edge on its end adjacent the opening which, when the slide is closed, fits tightly against the overhanging end wall of the recess.

3. A dispensing tube comprising a collapsible body having a thickened end portion constituting a head, the head being formed to define a rectangular recess having side walls and end walls and having its side walls and one of its end walls overhanging, the bottom of the recess having a dispensing opening smaller than the recess and initially extending nearly through said head but separated from the interior of the tube by a thin frangible septum, and a rectangular slide disposed and retained in said recess and having laterally beveled portions adapted to fit beneath the overhanging walls of the recess and be held close against the floor of the recess by said overhanging walls, the slide having a length such that it may be shifted longitudinally in said recess to entirely disclose said opening or into a position to close said opening, the slide having a beveled cutting edge on its end adjacent the opening adapted to be received beneath the overhanging wall of the recess when the slide is closed to thus constitute a seal.

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