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R. HARDING, JR

CAP FOR COLLAPSIBLE TUBES

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INVENTOR

Robert Harding Jr.
This invention relates to caps for collapsible tubes such as those used for tooth paste, shaving cream, and the like.

In the collapsible tubes used heretofore the caps have been made to screw on the top of the dispensing nozzle so that it was necessary to unscrew and remove the cap before using the paste. Also the convenient way to apply the paste upon a tooth brush, for instance, was to grasp the tube near the dispensing nozzle to guide the paste as it came from the tube. Thus the tube was squeezed near the nozzle which often resulted in a broken tube before the contents of the tube was gone.

It is one of the objects of my invention to provide a cap for collapsible tubes which can not be removed from the tube.

A further object of the invention is to provide a cap for collapsible tubes which will allow the tube to be grasped near the nozzle thereof without squeezing the tube at this point.

A further object of the invention is to provide a cap for collapsible tubes which will accurately measure the paste so that a predetermined amount may be ejected at each time the tube is used.

A further object of the invention is to provide a non-removable measuring cap for collapsible tubes which is simple, easily and cheaply made, and easily attached to the tube.

Other objects of the invention will be seen as the description of the invention proceeds.

In the drawings:

Fig. 1 is an elevational view of a cap embodying my invention;

Fig. 2 is an elevational view of the upper portion of a tube upon which the cap shown in Fig. 1 is adapted to fit;

Fig. 3 is a front elevational view of the cap and tube with a portion broken away for the sake of clearness;

Fig. 4 is a plan view of the cap;

Fig. 5 is a sectional view of the cap and the tube taken on the line 5—5 of Fig. 3;

Fig. 6 is a plan view of the neck of the tube; and

Fig. 7 is an assembled view showing the manner of using the tube.

Referring more specifically to the drawings:

The tube, 10, is provided with a cylindrical neck, 11, having a relatively small hole, 12, in the top thereof. A cap, 13, is adapted to fit slidably over the neck, 11, and is provided at its upper end with an extended nozzle, 14, through which is an orifice, 15, of the size and shape of the cross-section of the strip of paste, 16, which it is desired to dispense from the tube. The upper edge of the orifice, 15, is flush with the inner top wall of the cap so that when the cap is pushed down over the neck as shown in Fig. 5, the orifice is completely closed by the neck, 11, of the tube, 10.

The neck, 11, is provided on its sides with one or more bayonet grooves, 17, and after the cap, 13, is placed on the neck, 11, portions, 18, of the sides of the cap are pressed into the bayonet grooves to retain the cap upon the neck, 11, but at the same time to allow a limited longitudinal movement of the cap and to permit locking the cap against longitudinal movement when the cap is turned so that the internal projections, 18, lie in that part of the bayonet grooves, 17, which form the legs, 19.

The cap may be provided with milled rings, 13a, to offer a better surface with which to grasp the cap to turn it into the locking position or to unlock it.

The operation of the cap is as follows:

The tube is grasped in one hand near its bottom end and the cap, 13, is given a slight turn with the other hand so that the projections, 18, are free to move into the upper portions of the grooves, 17. Then the cap is pulled out and at the same time the tube is squeezed near its bottom. This forces a portion of the paste or other ingredients of the tube through the hole, 12, in the top of the neck, 11, into the cap, 13. The tube is then grasped in the manner indicated in Fig. 7, and the cap is forced down over the neck of the tube with the finger. This forces the paste, held in the cap, out through the orifice, 15, in a strip, 16, as shown in Fig. 7.

When the cap has been pressed all the way...
down over the neck of the tube the orifice, 13, is closed and the cap need only be turned slightly to lock it in this closed position on the neck of the tube. The hole, 12, is made relatively small so that when the cap is pressed down the paste will flow out of the orifice, 15, in the cap and not back into the tube.

It will thus be seen that the squeezing operation of the tube takes place before the paste is forced therefrom, and hence the tube may be always squeezed at the end farthest from the nozzle so that the upper part of the tube may be kept intact, as very little pressing of the tube is necessary to hold the tube while forcing the paste from the cap, and the danger of breaking the tube by constant squeezing at a place adjacent the neck thereof is thereby eliminated.

It will also be evident that the cap may be made to hold an exact predetermined amount of paste so that at each dispensing operation of the tube the same amount of paste will be ejected therefrom. Thus with this invention the amount of tooth paste, for instance, needed to properly cleanse the teeth may be determined in the laboratory and the cap made the proper size so that just the necessary amount will always be used.

A measuring dispensing cap constructed in this manner is not only simple and easy to make but it is easily assembled. The cap need only be placed on the neck of the tube and then pressure applied at two points on the side thereof over the grooves on the neck and the cap and tube are assembled.

Many embodiments of the dispensing cap other than that illustrated may be resorted to without departing from the spirit of the invention and I do not therefore desire to limit myself to the exact embodiment shown and described but to interpret the invention broadly within the scope of the appended claims.

I claim:

1. In a collapsible tube measuring dispensing device the combination of a neck, a cap having an opening in the side near the top thereof and slidably mounted on said neck, means to retain said cap upon said neck and against angular displacement with respect thereto but permitting limited reciprocation thereon, and means to lock said cap against reciprocation upon said neck.

2. In a collapsible tube measuring dispensing device the combination of a neck having a relatively small hole in the top thereof, a cap having an opening in the side near the top thereof, and slidably mounted on said neck, means to limit the reciprocation of said cap on said neck and maintain said cap against angular displacement with respect thereto, and means to lock said cap in its innermost position.

3. In a collapsible tube measuring dispens-