My invention relates to paste tube closures, and more particularly to a closure means for paste tubes which will act automatically to permit the paste to be discharged therefrom by squeezing the tube and will also automatically close the outlet from the tube so as to prevent the paste from hardening around the discharge opening.

Among the salient objects of my invention are:

1. To provide a simple, practical and inexpensive insert element which can be inserted into the open end of the paste tube, when the cap is removed, and which will prevent the replacement of the cap in the usual manner, and which will operate thereafter, and after the regular cap has been removed by the user, to keep the discharge opening closed at all times; to provide a device of the character referred to which will make it possible, as in handling tooth paste, to discharge the paste in ribbon form; and, in general, to provide a simple device which can be added to the tube with very little additional expense and which will meet the objections of hardening of the paste when the cap is left off the tube.

In order to explain my invention, I have illustrated the same on the accompanying sheet of drawings, which I will now describe.

Figure 1 is a side elevation of a paste tube, with cap removed, and showing one embodiment of my invention applied thereto;

Figure 2 is a slightly modified embodiment of the invention, applied to a tooth paste tube, with a cap having the usual slot for discharging the paste in ribbon form; and

Figure 3 is a bottom or inside view of the cap.

Referring in detail to the drawing, the tube is designated 1, with the usual neck 2, threaded at 6 to receive the usual cap, not shown. The insert piece 7, consists of a short tubular member having an extension 7' at one side, to receive one end of a coiled spring 8, the other end of which spring is attached to the underside of a disc 9, as at 10, whereby said disc acts as a closure over the open or discharge end of the tube and the insert piece 7.

This insert piece is of a size which will fit tightly into the neck or opening of the tube, so that the paste will be forced out around the spring and from under the disc closure member.

Referring to Fig. 2, the tube is designated 11, with the threaded neck 12, and with a cap 13, having a slot discharge opening 14. The invention in this form consists of the cylindrical member 15, provided in its bottom with an inner, annular shoulder 16, with an extension 15', to receive the lower end of a small coiled spring 17, the upper end of which spring is attached to the underside of a disc 18, which seats upon the annular shoulder 16, as clearly illustrated.

In this embodiment of the invention, the paste is forced out around the disc 18, and up through the cap 13, as illustrated by the light broken lines. By using the cap for the discharge, it avoids the provision of another slotted member to form the paste into the ribbon form as it is discharged.

While I have shown and described two embodiments of my invention, I am aware that changes in details of construction and arrangement can be made without departing from the spirit thereof, and I do not, therefore, limit my invention to the showing made, except as I may be limited by the hereof appended claims.

I claim:

1. A paste tube closure consisting of an insert element to be inserted into the mouth of said paste tube, a separate disc fitted over the outside of the mouth of said tube to close the same, a spring attached at its inner end to said insert element and at its outer end to the underside of said disc, whereby said disc is yieldingly held upon the mouth of said tube to yield away therefrom to permit the contents of the tube to be squeezed out around said disc.

2. In combination with a paste tube having a reduced neck portion with a discharge opening therethrough, an insert piece of tubular form inserted into said neck portion and frictionally held in place, a closure disc over its outer end, and a spring attached to the underside of said disc and to the insert piece and holding the disc yieldingly upon the outer end of said insert piece to close the outlet from said tube.

3. In combination, a paste tube having a neck with a discharge opening therethrough, a flat closure disc fitted over the outside of the mouth of said opening, a coiled spring attached to the center of the underside of said disc and at its other end attached in the tube and holding said disc yieldingly upon the discharge opening thereof, whereby the contents of the tube can be squeezed out around the edge of said disc as it yields.

4. A closure device for a tube having a neck portion with round discharge opening therethrough and consisting of a tubular insert piece adapted to be pressed into said opening and adapted to be frictionally held in place therein, said piece having a part to receive the end of
a coiled spring, a disc closure adapted to fit over the outer end of said tubular insert piece, and a coiled spring attached at one end to the underside of said disc and at its other end to the part on said piece, whereby to yieldingly hold said disc over the mouth of said discharge opening.

5. In combination with a paste tube, an insert closure unit therefor and consisting of a tubular member pressed into the neck of said paste tube and held frictionally in place therein, said tubular member having one side extended to have attached thereto a spring, a closure disc upon the end of said tubular member, a coiled spring attached at one end to the underside of said disc and at its other end to said extended side of said insert tubular member, whereby said closure disc is yieldingly held in closing position and is adapted to yield to permit the contents of the tube to be squeezed out around the edge of said closure disc as it yields under pressure from within.

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