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Self Closing Paste Tube

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Fig. 1

Fig. 2

Fig. 3

Fig. 4

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This invention relates to tubes from which.

semi-liquid pastes, cream and the like are dispensed, such as shaving cream and tooth paste. Such tubes are ordinarily provided with caps which are small and are apt to be dropped or mislaid, which permits the contents of the tube, at least near the top, to cake and dry out.

It is therefore the principal object of my invention to provide a cap and valve unit for such tubes, to take the place of the usual cap and arranged so that a squeezing pressure on the tube and its contents will cause the latter to open the valve and be exuded from the tube; while with the release of such pressure the valve will close of itself. The operator need therefore give no attention to the closing of the tube and the contents can not dry out, and the annoyance incident to the handling of the usual tubes is therefore eliminated. The device is also arranged so that it may be applied to ordinary tubes without making any change in the latter. The device may be arranged so that the exuded material may be either in a ribbon-like or circular form of the conventional size, irrespective of the size of the valve itself.

A further object of the invention is to produce a simple and inexpensive device and yet one which will be exceedingly effective for the purpose for which it is designed.

These objects I accomplish by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claim.

In the drawing similar characters of reference indicate corresponding parts in the several views:

Fig. 1 is a perspective view of a tooth paste tube equipped with my self closing valve and showing the contents of the tube as being discharged onto a tooth brush.

Fig. 2 is an enlarged section of the cap and tube at the outlet end showing the valve in a closing position.

Fig. 3 is a similar view showing the valve opened.

Fig. 4 is a cross section on the line 4—4 of Fig. 2.

Referring now more particularly to the characters of reference on the drawing, the numeral 1 denotes a tube of the standard collapsible character provided at one end with a rigid circular outlet member or mouth 2. The usual closure cap is removed and its place taken by another cap 3 whose bore 4 outwardly of the mouth is substantially the same diameter as the exterior diameter of the mouth. This bore has a circular or disc valve 5 slidably mounted therein to engage the outer end of the mouth and seal the outlet. A compression spring 6 mounted in the cap behind the valve normally holds the same seated against the outlet.

Between the closed position of the valve and its fully opened position (which is limited by a shoulder 7 formed in the cap) an outlet port 8 is cut lengthwise in the cap to communicate with the bore 4. In the present instance this port is in the form of a longitudinal slot so that the paste or cream 9 as exuded from the tube will be in the form of a ribbon as shown at 10. Said port may be of circular form if desired so that the exuded material will have a corresponding shape. The outer surface of the cap is preferably depressed about the port as shown at 11, thus tending to prevent the adhesion of the exuding material to the outer edges of the port and aiding in maintaining the material in the desired clean-cut ribbon-like form.

To cause the cream or paste to be thus exuded it is only necessary to squeeze the tube, thus exerting a pressure on its contents. This pressure is transmitted to the valve, forcing the same open against the resistance of the spring. Upon the pressure being released the valve closes of itself, the strength of the spring being sufficient to overcome the natural resistance or pressure of the cream.

From the foregoing description it will be readily seen that I have produced such a device as substantially fulfills the objects of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of
the invention, as defined by the appended claim.

Having thus described my invention what I claim as new and useful and desire to secure by Letters Patent is:

In a collapsible tube having an outlet, a hollow cap over said outlet, said cap having a side port therein beyond the outlet to provide communication therewith, a spring pressed valve disc movable in the cap axially thereof and across the port to normally engage and close the outlet and to open communication between the port and outlet when such disc is in its outer position, and a shoulder in the cap to limit the outward movement of the valve so that the inner face of the valve will lie substantially flush with the edge of the port farthest from the outlet when the disc is in its outer position.

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