CLOSURE FOR COLLAPSIBLE TUBES WHICH IS OPENED BY PRESSURE OF CONTENTS
Filed July 11, 1952

INVENTOR.
FREDERIC E. SMALE,

BY

McMoran, Perman, Davidson
ATTORNEYS.
This invention relates to collapsible tube closures, and more particularly to an improved dispensing cap for a collapsible paste tube.

A main object of the invention is to provide a novel and improved dispensing cap for a collapsible paste tube, said cap being simple in construction, being easy to manipulate, and providing a considerable saving by eliminating waste of the paste material in the tube on which the closure cap is employed.

A further object of the invention is to provide an improved dispensing cap for a collapsible tube, said cap being inexpensive to manufacture, being compact in size, being neat in appearance, and preventing an accumulation of the dried paste material around the neck of the paste tube by minimizing the escape of excess paste material from the tube when material is dispensed therefrom.

Further objects and advantages of the invention will become apparent from the following description and claim, and from the accompanying drawings, wherein:

Figure 1 is a top plan view of a paste dispensing tube provided with an improved dispensing cap constructed in accordance with the present invention.

Figure 2 is an elevational view of the tube illustrated in Figure 1, showing the improved dispensing cap mounted on the neck of the tube.

Figure 3 is an enlarged cross sectional view taken on the line 3—3 of Figure 2.

Figure 4 is a cross sectional view similar to Figure 3 but showing the locking screw of the dispensing cap in elevated position, allowing paste material to be dispensed from the tube.

Referring to the drawings, the improved dispensing cap is designated generally at 11 and comprises a tubular body 12 provided with an enlarged cylindrical skirt portion 13 formed on its inside surface with threads 14 adapted to engage on the threaded neck 15 of a conventional collapsible paste tube 16. Disposed in the skirt portion 13 adjacent the annular shoulder 17 defined between said skirt portion and the main body of the tube 12 is an annular sealing gasket 18 adapted to engage on the rim of the neck 15 of the paste tube 16, as shown in Figure 3, to provide a seal between the closure cap 11 and the neck 15.

Designated at 19 is a plunger slidably mounted in the main body of the tubular member 12, said plunger being formed at its upper portion with a reduced shank 20. Surrounding the shank 20 is a coiled spring 21 which bears between the lower portion of the plunger and the top wall 22 of the tubular body 12, biasing the plunger 19 downwardly. The lower portion of body 12 is formed with the discharge aperture 23 which is normally covered by the lower portion of the plunger 19, as shown in Figure 3. Designated at 24 is a headed screw which is threadedly engaged through the top wall 22 and which is adapted to engage the top end of shank 20 to lock the plunger 19 in the lower position thereof shown in Figure 3, or to limit the upward movement of the plunger 19 when the screw is in the elevated position thereof shown in Figure 4. The screw 24 is provided with the knob-like head 25, whereby the screw may be manually rotated.

In using the device, the original cap is removed from the neck of the collapsible paste tube and the dispensing cap 11 is threadedly engaged on the neck of the tube in place of the original cap. With the screw 24 in its lowered position, shown in Figure 3, the plunger 19 closes the discharge aperture 23, and the dispensing tube causes the paste material to rise upwardly through the neck of the tube and force the plunger 19 upwardly into abutment with the screw 24, as shown in Figure 4. This opens the discharge passage 23 and allows the paste material to flow outwardly by the pressure exerted on the collapsible body of the tube 16. When the pressure is released, the spring 21 causes the plunger 19 to immediately descend, closing off the passage 23 and preventing further escape of paste material. To lock the plunger in its closing position, the knob 25 is rotated to cause the screw 24 to descend to the position thereof shown in Figure 3, thus insuring that there will be no accidental discharge of paste material from the tube.

While a specific embodiment of an improved dispensing cap for a collapsible paste tube has been disclosed in the foregoing description, it will be understood that various modifications within the spirit of the invention may occur to those skilled in the art. Therefore, it is intended that no limitations be placed on the invention except as defined by the scope of the appended claim.

What is claimed is:

A dispensing cap for a collapsible paste tube having an externally threaded neck comprising a tubular body, said body being formed with an enlarged cylindrical bottom skirt formed with internal screw threads adapted to engage on said neck, an annular sealing gasket disposed in the top portion of said skirt, said body being formed at its intermediate portion with a paste discharge aperture, a plunger slidably positioned in said body having a top wall formed with a tapped central opening, the upper portion of the plunger being reduced in diameter, a locking screw threadedly engaged through said opening and contacting said upper portion of the plunger at the upward limit of plunger movement, and a coiled spring surrounding said locking screw and said reduced upper portion, said spring bearing between the plunger and said top wall to bias the plunger downwardly, said screw being threadably inserted into said body sufficient to lock the plunger over said paste discharge aperture.

References Cited in the file of this patent

UNITED STATES PATENTS

<table>
<thead>
<tr>
<th>Number</th>
<th>Name</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>559,351</td>
<td>Beal</td>
<td>May 5, 1896</td>
</tr>
<tr>
<td>1,727,241</td>
<td>Mason</td>
<td>Sept. 3, 1929</td>
</tr>
<tr>
<td>2,158,375</td>
<td>Miller</td>
<td>May 16, 1939</td>
</tr>
<tr>
<td>2,448,163</td>
<td>Wilson</td>
<td>Feb. 31, 1948</td>
</tr>
<tr>
<td>2,495,884</td>
<td>Bowers</td>
<td>Jan. 30, 1950</td>
</tr>
</tbody>
</table>