E. L. CLEVELAND.

COLLAPSIBLE TUBE.

APPLICATION FILED NOV. 18, 1919.

1,352,355. Patented Sept. 7, 1920.

Fig. 1.

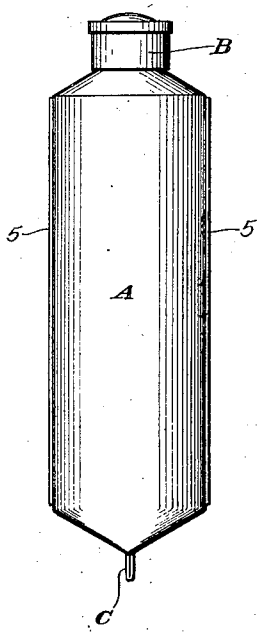


Fig. 2.

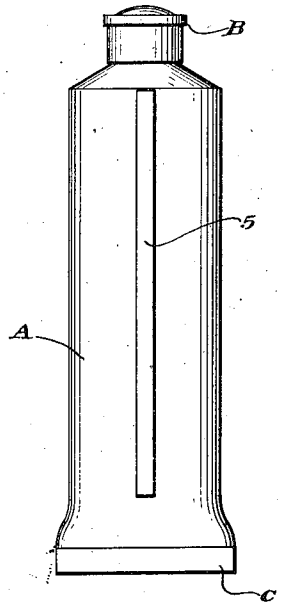


Fig. 3.

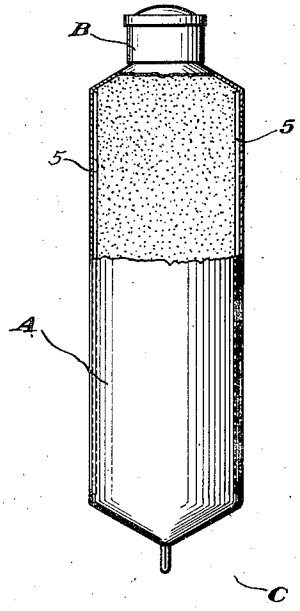


Fig. 4.

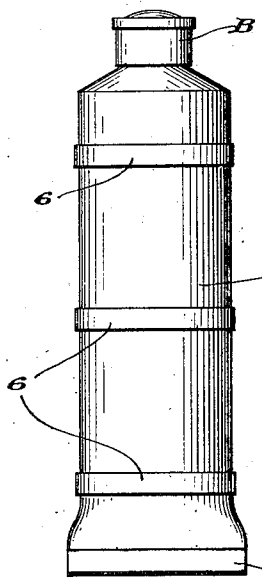
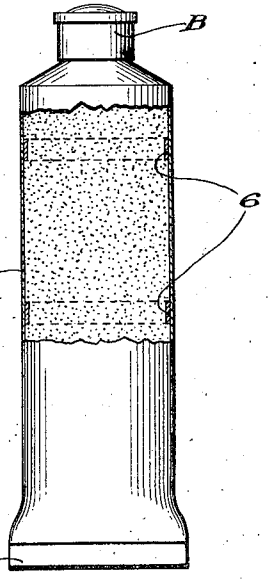


Fig. 5.



WITNESSES

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COLLAPSIBLE TUBE.

1,352,355. Specification of Letters Patent. Patented Sept. 7, 1920.

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To all whom it may concern:

Be it known that I, EDGAR L. CLEVELAND, a citizen of the United States, and a resident of Othello, in the county of Adams and State of Washington, have invented a new and Improved Collapsible Tube, of which the following is a full, clear, and exact description.

The present invention relates to collapsible tubes, and has reference more particularly to that class of such tubes which are adapted to contain tooth paste and other plastic and semiplastic materials and from which the contents are discharged by distorting the tube.

The primary object of the invention is to provide means whereby a given quantity of the contents of the tube may be expelled or discharged without the usual inconvenience of having the discharge continue after the pressure incident to the distortion has been relieved.

Means for accomplishing the above-stated object will be explained by reference to the accompanying drawing, in which—

Figure 1 is a side elevation of a conventional type of collapsible tube illustrating the preferred embodiment of the invention;

Fig. 2 is a similar view but looking at the tube from another side;

Fig. 3 is a side elevation partly in section showing the device proposed by the invention as applied to the interior of the tube;

Fig. 4 is a side elevation of a modified form of the device; and

Fig. 5 is a side elevation partly in section showing the modification applied to the interior of the tube.

Referring now to the drawing in detail, we will consider the tube A as representing a conventional type of collapsible tube, which is usually used as a convenient means of vending tooth paste, library paste, mucilage and the like. The tube is provided with the usual cap closure B for closing the discharge end of the tube and a tapered end C. In expelling the contents of these tubes the usual method is to distort the tube by pressure applied through the fingers of the user, and it usually happens that an excessive amount of the contents is expelled, caused by a continued discharge even after the pressure incident to the distortion of the tube has been relieved. This excessive amount that has been discharged is a loss.

The present invention, therefore, proposes to do away with this excessive discharge by providing means for producing a retracting effect on the contents within the tube when the pressure of distortion has been relieved. Two convenient forms of accomplishing this result are shown, the preferred one of the two being incorporated or applied as a flexible spring strip 5 longitudinally of the tube A, either on the outside, as shown in Figs. 1 and 2, or on the interior, as shown in Fig. 3. In both of these forms it will probably be desirable to employ a pair of these flexible spring strips and to dispose them on opposite sides of the tube, as shown; although, of course, the duplication of the strips on each side of the tube should not be considered as a limitation, as more than two strips may be used to produce the desired effect.

As a modification I have shown in Figs. 4 and 5 an application of an annular flexible spring ring 6 which will extend circumferentially around the tube; and if one ring will not produce effective results, a number of them may be used as shown.

In the modified form, as in the preferred form, the annular rings 6 may be applied either on the outside, as shown in Fig. 4, or on the interior, as shown in Fig. 5.

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

1. A collapsible and non-resilient tube adapted to be distorted in discharging the contents thereof, and flexible spring members secured upon the wall of the tube and adapted to produce a retracting effect on the contents within the tube when the pressure of distortion has been relieved.

2. A collapsible and non-resilient tube adapted to be distorted in discharging the contents thereof, having a flexible spring strip secured upon its wall to extend longitudinally thereof and adapted to produce a retracting effect on the contents of the tube when the pressure of distortion has been relieved.

3. A collapsible and non-resilient tube adapted to be distorted in discharging its contents, having longitudinally extending flexible spring strips secured upon its outer face at diametrically opposite sides.

EDGAR LEROY CLEVELAND.