Sept. 10, 1940. J. J. MANNING 2,214,507

COLLAPSIBLE TUBE HOLDER AND EJECTOR

Original Filed Nov. 2, 1938

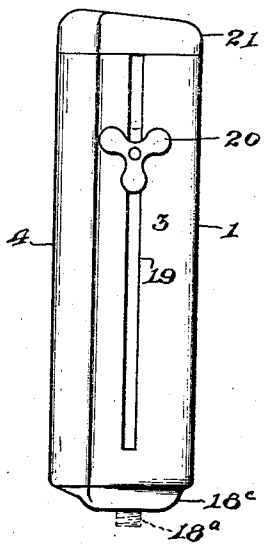


Fig. 1.

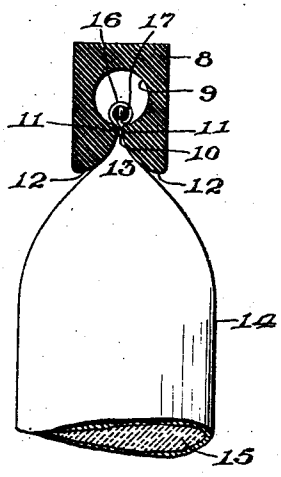


Fig. 5.

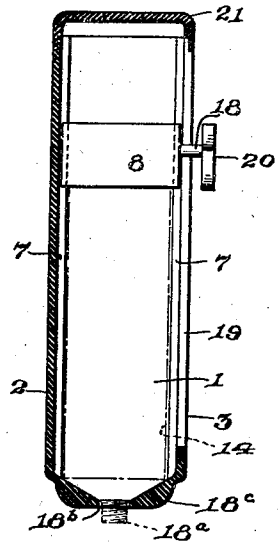


Fig. 2.

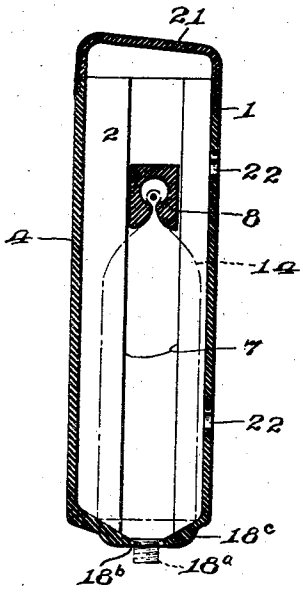


Fig. 3.

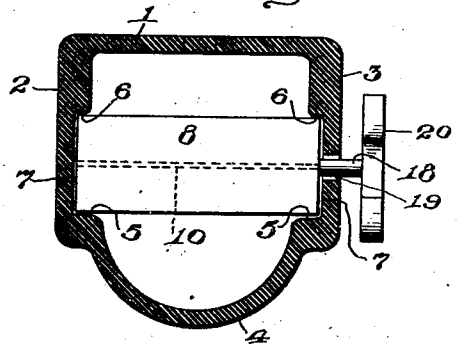


Fig. 4.

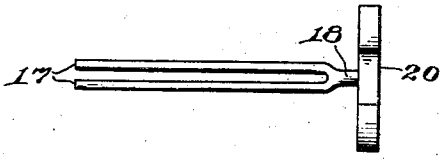


Fig. 6.

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COLLAPSIBLE TUBE HOLDER AND EJECTOR

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4 Claims. (Cl. 221—60)

The object of the invention is to provide improvements in supporting containers for collapsible tubes, such for instance as those which are commonly used for the transportation and dispensing of shaving creams, tooth pastes, and the like.

Another object is to provide in a device of this type the combination of a container, having an end which is closed except for an aperture, through which the contents of the enclosed tube are adapted to be discharged, a suitable guideway within said container, a slide movable in said guideway and adapted to receive the crimped or otherwise closed end of the tube, and a key extending through a wall of the said container, engaging said closed tube end and rotatable within and with respect to said slide, so as to control the collapsing and winding of the tube by the said key.

Still another object is to provide in such a device a slide, having a transversely extending recess adapted to receive a laterally inwardly extending key and the closed end of a tube engaged by said key, said closed end of the tube being adapted to enter said recess through a restricted slot, defined by and between preferably rounded edges, which cooperate to closely compress the side walls of the tube, and thereby completely force the tube's contents outwardly, as the key is rotated within the said slide, so as to prevent waste of said contents as in a tube, which is not wholly and evenly collapsed or compressed.

And a still further object is to provide a device of this character, which is so designed that it can be inexpensively made of synthetic resin or similarly formable composition as well as of metal, which will resist all ordinary rough usage and will perform with the highest degree of efficiency.

With the objects thus briefly stated, the invention comprises further tetails of construction and operation, which are hereinafter fully brought out in the following description, when read in conjunction with the accompanying drawing, in which Fig. 1 is a side elevation of a device comprising one embodiment of the invention; Fig. 2 is a vertical section of the same taken centrally through the slot shown in Fig. 1; Fig. 3 is a vertical front to rear section of the same taken at right angles with the section shown in Fig. 2; Fig. 4 is an enlarged horizontal section of the device taken above the slide shown in Figs. 2 and 3, and looking downwardly; Fig. 5 is a vertical transverse view of the slide per se in operative engagement with the adjacent closed upper end portion of a collapsible tube; and Fig. 6 is a plan view of the rotatable key per se.

Referring to the drawing, a vertically elongated casing is shown as being formed of any suitable material, such for instance, as one of the synthetic resins or equivalent formable substance, and in horizontal cross section comprising a substantially flat rear wall 1, two laterally positioned forwardly extending side walls 2 and 3, and a preferably outwardly bowed forward wall 4. This forward wall may be of any desired shape, but is here shown as being substantially semi-cylindrical in cross section and so joined to the forward edge portions of the lateral walls 2 and 3 as to provide vertically extending shoulders 5, which cooperate with rearwardly spaced shoulders 6 in the said lateral walls 2 and 3, to provide oppositely positioned guide-ways or channels 7, in which a slide or ejecting member 8 is adapted to reciprocate.

This lide 8 preferably comprises a cast or molded member having a longitudinally extending, substantially cylindrical bore 9, comprising a chamber having a restricted, downwardly directed opening slot 10, positioned between the rounded edges of shoulders 11, which edges are approached from beneath by downwardly diverging curved surfaces 12, adapted for advance engagement with the closed end portion 13 of a collapsible tube 14 containing any desired type of contents 15, such as shaving cream, tooth paste, or the like, as the adjacent portions of such tube enter said chamber.

The upper closed end portion 16 of the collapsible tube is engaged by and between spaced parallel arms 17 of a key having a radially reduced shank 18, which is positioned in and extends outwardly through a vertically extending slot 19 in the lateral wall 3 of said casing and carries upon its outer free end any suitable form of manually engageable knob 20, or the like. This key, when in engagement with the upper closed end of the tube 14 within the chamber 9 of said slide, is adapted to be rotated by manual engagement with the knob 20, so as to thereby wind the tube gradually around the said key, and draw the adjacent portions of the said tube into said chamber through the slot 10.

In being drawn through said slot, which is but little more than just wide enough to accommodate the combined thickness of the opposite walls of the tube 14, when flattened, said walls are squeezed together in such manner as to positively force the contents of said tube downwardly and outwardly through the discharge opening, indi-

cated at 18a by dot-and-dash lines, which extends through an aperture 18b in the bottom wall 18c of the casing, the upper surfaces of which last-mentioned wall converge downwardly at an approximately 30° angle, so as to conform with and provide a uniform rest for the adjacent end portion of the tube 14.

At the top, the said casing is preferably open, in order to permit the insertion of the collapsible tube, with the key attached thereto and extending laterally through the slot 19, after the slide 8 has first been slid horizontally upon and longitudinally of said key and adjacent portions of said tube, as indicated in Figs. 3 and 5. Thereafter a suitable lid or closure 21 is placed in operative position upon the otherwise open end of said casing, as shown in Figs. 1, 2, and 3, to protect the interior of said casing, as well as its contents and to prevent foreign objects from inadvertently entering said casing and disturbing the otherwise uniform operation of the device. It should also be mentioned that the rear wall of said casing may be provided with one or more spaced apertures, slots, or other means 22, for detachably mounting said casing upon any suitable extraneous support, such as the wall of a room, or upon a so-called medicine cabinet, or the like.

Having thus described my invention, what I claim as new and desire to protect by Letters Patent of the United States is:

1. A container for collapsible tubes, comprising a hollow body portion closed at one end except for a discharge aperture, a guide within said body portion, a hollow member slidably engaging said guide and prevented thereby from rotating, said member having a restricted slot in one wall defined by closely spaced edges between which the walls of a tube are adapted to pass, and means to draw the closed end of a tube between said edges and into said recess, so as to compress the tube walls and eject its contents through the discharge aperture of said body.

2. A container for collapsible tubes, comprising a hollow body portion closed at one end except for a discharge aperture and provided with a longitudinal slot, oppositely positioned guides within said body portion, a hollow member slidably engaging said guides and prevented thereby from rotating, said member having a restricted slot in one wall defined by closely spaced edges between which the walls of a tube are adapted to pass, and a rotatable key slidable in said slot and extending into said member, to draw the closed end of a tube between said edges, so as to compress the tube walls and eject its contents through the discharge aperture of said body while said member moves toward said aperture.

3. The combination of a container having guide channels in two of its opposite walls, with a hollow member having a recess provided with a restricted slot in one wall, and prevented by the sides of said channels from turning while sliding therein, and a rotatable element extending into said recess and operative to draw the closed end of a collapsible tube through said slot and into said recess.

4. The combination of a container, having an upper open end provided with a removable closure and one side provided with a longitudinally extending slot, while the opposite end of said container is provided with a discharge aperture, parallel guideways in two of the lateral walls of said container, a member slidable in and prevented from turning by said guideways and provided with a substantially cylindrical recess open at one end and also provided with a restricted slot opening through one side between rounded edges, and an element slidable in said container slot, and adapted when in engagement with the closed end portion of a tube within said recess, to rotate and cause the body of the tube to be drawn through said restricted slot, thereby squeezing the contents from within the tube through said discharge aperture.

JOSEPH J. MANNING.