April 7, 1931. D. D. DEVLIN 1,799,678

DISPENSING HOLDER FOR COLLAPSIBLE TUBES

Filed Feb. 3, 1930

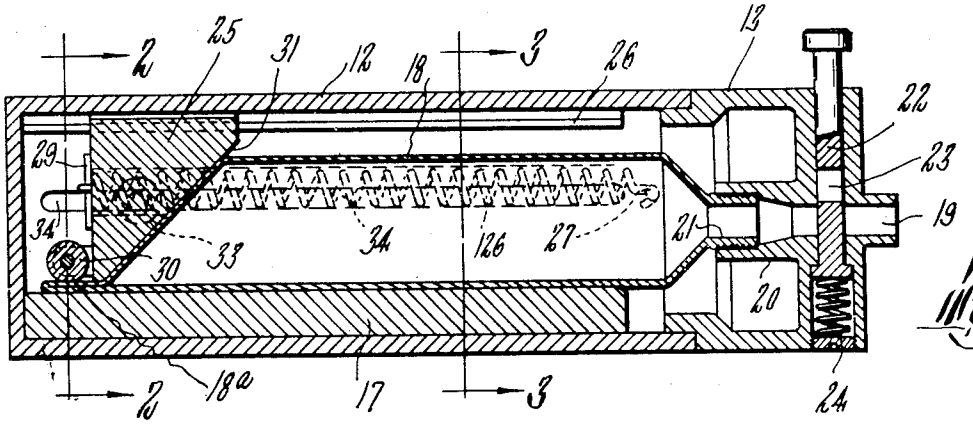


Fig. 1.

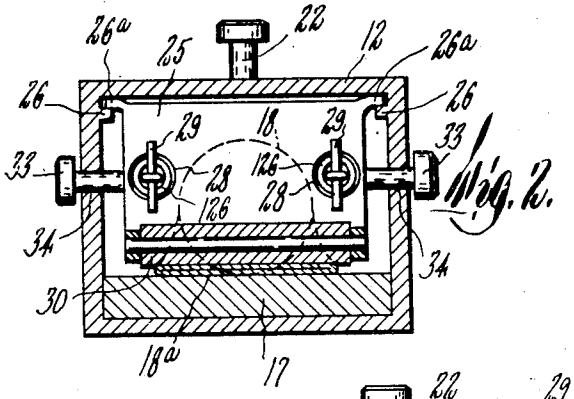


Fig. 2.

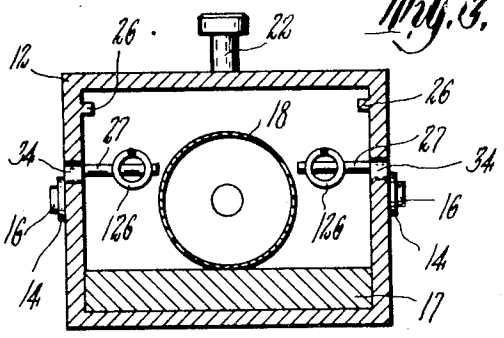


Fig. 3.

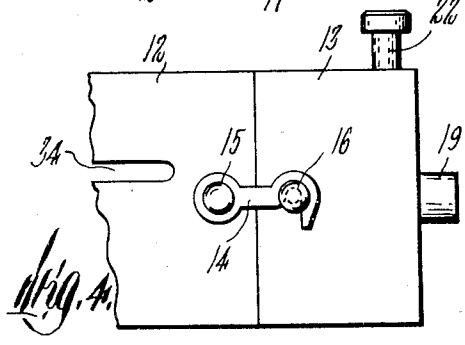


Fig. 4.

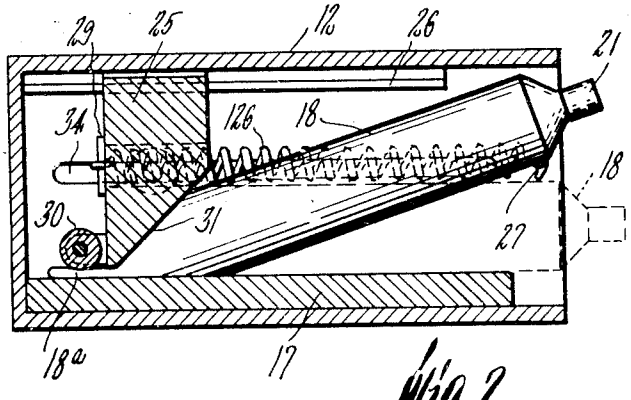


Fig. 7.

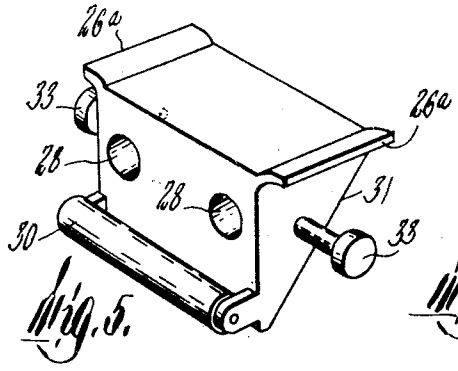


Fig. 5.

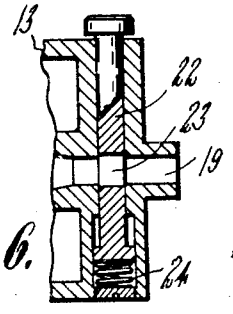


Fig. 6.

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UNITED STATES PATENT OFFICE

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DISPENSING HOLDER FOR COLLAPSIBLE TUBES

Application filed February 3, 1930. Serial No. 425,417.

This invention is embodied in a holder adapted to contain, and support in a predetermined position, a collapsible tube charged with plastic or semi-fluid material, such as tooth paste or shaving cream, the holder having a dispensing outlet at one end adapted to be coupled with the mouth of the tube, a valve controlling the outlet, and a presser movable in the holder and normally urged by resilient means toward the outlet, when the valve is opened, to progressively collapse the tube and dispense material therefrom through the outlet, the presser being prevented from acting when the valve is closed.

The object of the invention is to provide for use in a bath-room or elsewhere, a semi-automatic holder for dispensing material from an ordinary collapsible tube, said holder being automatic to the extent that the user is required only to open a valve to cause extrusion of the material upon a tooth brush or the like, held at the outlet, and close the valve when the desired quantity has been extruded, the holder being conditioned for use by inserting a charged tube therein and coupling its mouth to the holder outlet.

Of the accompanying drawings forming a part of this specification,—

Figure 1 shows in longitudinal section a holder embodying the invention, and a collapsible tube associated therewith, the valve being closed.

Figure 2 is a section on line 2—2 of Figure 1.

Figure 3 is a section on line 3—3 of Figure 1.

Figure 4 is a fragmentary side view, showing a portion of the holder.

Figure 5 is a perspective view of the presser.

Figure 6 is a fragmentary sectional view similar to a portion of Figure 1, showing the valve opened.

Figure 7 shows in longitudinal section a holder somewhat differently proportioned and illustrates a way of operatively locating the tube in the holder.

The same reference characters indicate the same parts in all of the figures.

The holder includes a body section 12, and an end section 13, closing one end of the body section and detachably secured thereto by means such as hooks 14, pivoted at 15 to the body section, and studs 16, fixed to the end section. At one side of the body section 12 is a bed 17, on which one side of a collapsible tube 18 is supported, as shown by Figure 1.

The end section 13 is provided with a dispensing outlet having an outwardly projecting end portion 19, and an inwardly projecting end portion 20 adapted to be coupled to the mouth 21 of the tube. The portion 20 is adapted to receive the usual externally threaded mouth 21, without engagement with the thread thereof, or said base may be internally threaded to engage the mouth's thread.

22 designates a valve movable in a valve seat extending crosswise of the head section 13, and provided with a port 23, the movability of the valve permitting the port to be positioned as shown by Figure 1, so that the valve closes the outlet, and to the position shown by Figure 6, so that the valve opens the outlet. The valve is preferably movable endwise in its seat and normally held by a spring 24 in its closed position.

A presser which includes a bed 25, is movable in the holder and is formed to cooperate with the bed 17 in collapsing the tube. The presser is guided by means such as longitudinally extending ledges 26, fixed to opposite sides of the body section 12, said ledges guiding ears 26a on the presser body. The presser is normally urged toward the outlet by resilient means embodied in this instance, in springs 126, fixed to studs 27 on the body section 12, the springs extending through holes 28 in the presser body, and being engaged with pins 29 bearing on said body. The presser includes also a roller 30, supported by ears on the body 25, and arranged to bear on one side of a collapsed portion of the tube 18 and press the opposite side of said portion against the bed 17.

The presser body 25 has an inclined face 31, which acts to exert collapsing pressure on the tube 18 and thereby progressively flatten the same and extrude the charge therefrom when the valve 22 is opened and the springs

126 are permitted to force the presser toward the outlet. When the valve is closed, extruding movement of the presser is prevented.

In Figures 1 and 2 the roller 30 is shown as bearing on the usual folded and closed end 18a of the tube, said end being inserted between the roller and the bed by an endwise movement of the tube. Said movement causes the inclined face 31 of the presser to form a flattened incline on the inner end of the tube, said incline progressing toward the outlet when the springs are permitted, by the opening of the valve, to move the presser.

Figure 7 shows the holder proportioned to permit the insertion of the tube in an inclined position, as shown by full lines, and then be moved downward to bear on the bed 17, as shown by dotted lines.

The presser body may be provided with studs 33, projecting through longitudinal slots 34 in the body section 12. Said studs permit the operator to conveniently force the presser to the retracted position shown by Figures 1 and 7.

To operatively assemble the holder and tube, the end section 13 is removed, the presser is retracted, the end portion 18a of the tube is inserted between the roller 30 and the bed, and the end section 13 is secured in place, the valve being closed. The presser is then released and forced forward by the springs until the tube mouth 21 enters the outlet portion 20.

When a portion of the charge is to be extruded, the operator opens the valve 22, holds it open until a sufficient quantity is dispensed and then closes the valve. The force of the springs is sufficient to cause the presser to flatten nearly the entire length of the tube.

When the tube is exhausted, the end section and the tube are removed and a charged tube is inserted.

The tube 18 here shown is supposed to be of the usual soft metal variety. The tube may be made of rubber, if desired, and adapted to be refilled and repeatedly used.

I claim:

1. A holder having a bed adapted to support a collapsible tube charged with plastic material, a dispensing outlet adapted to be coupled to the tube mouth, a valve adapted to open and close said outlet, a presser movable in the holder and formed to cooperate with said bed in collapsing a tube supported thereby, means for guiding the presser, and resilient means normally urging the presser toward the outlet, said presser being formed to progressively exert collapsing pressure on the tube, and thereby extrude the charge therefrom when the valve is opened, the closing of the valve preventing extruding movement of the presser.

2. A holder as specified by claim 1, composed of a body section having said bed and guiding means, and an end section detachably secured to the body section and having said dispensing outlet and valve.

3. A holder as specified by claim 1, the presser having an inclined face adapted to progressively collapse the tube, and a roller adapted to bear on an end portion and on a collapsed side portion of the tube and press the opposite side portion thereof against the bed.

In testimony whereof I have affixed my signature.

DANIEL D. DEVLIN.