Feb. 3, 1931. S. W. LAWTON 1,790,930

HOLDER FOR COLLAPSIBLE TUBES

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Fig. 1.

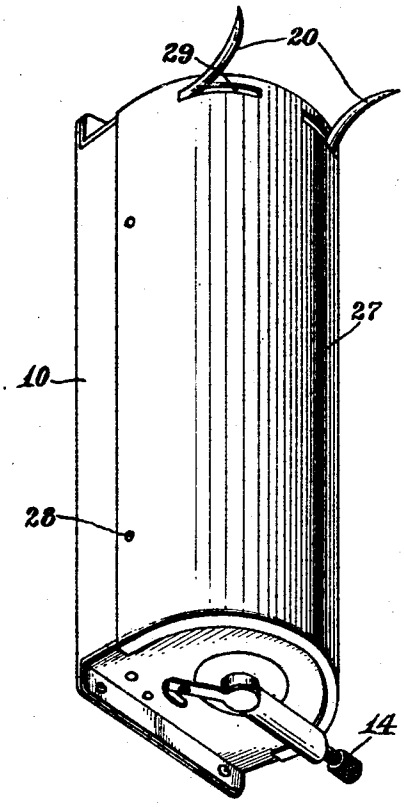


Fig. 2.

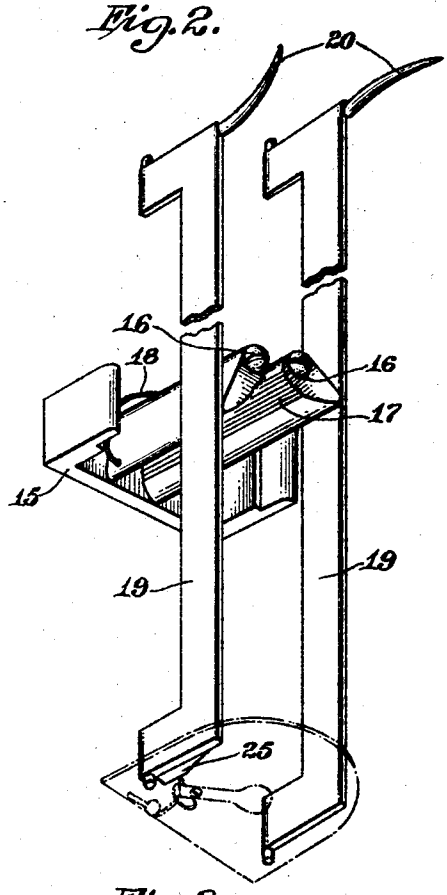


Fig. 3.

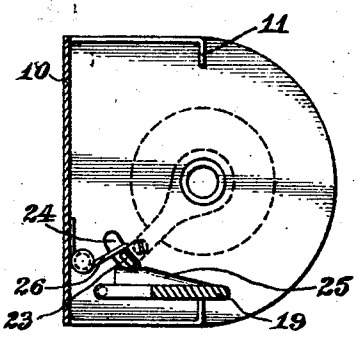
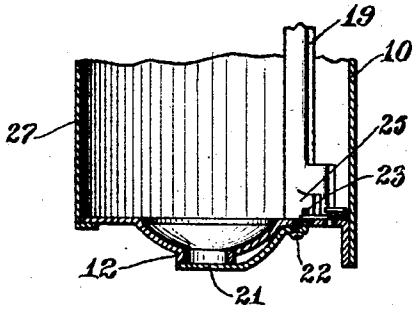


Fig. 4.



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Fig. 5.

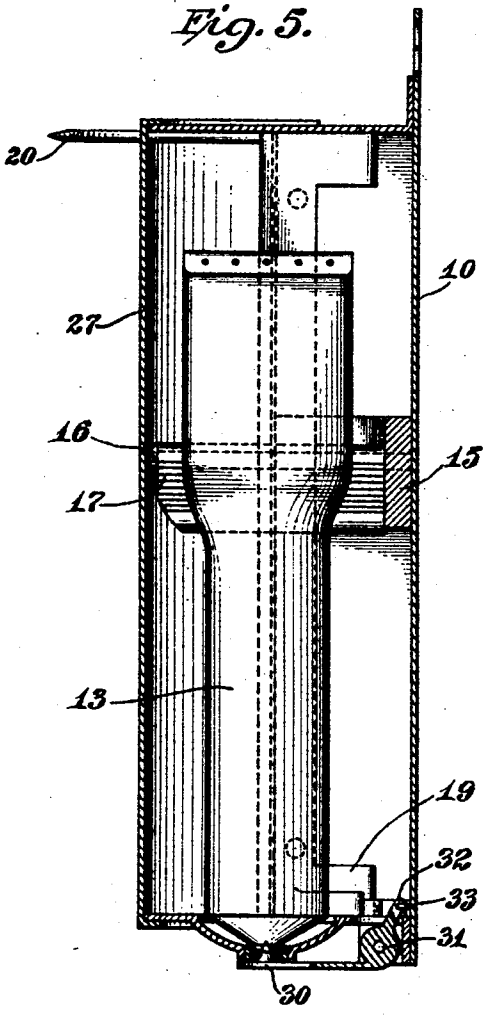


Fig. 8.

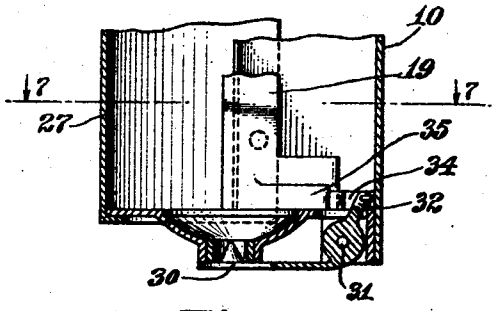


Fig. 7.

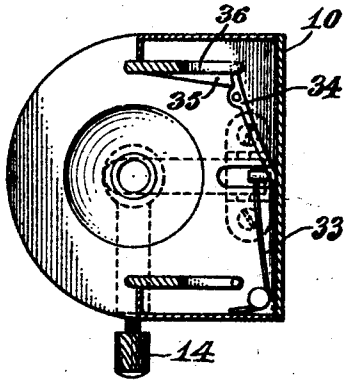
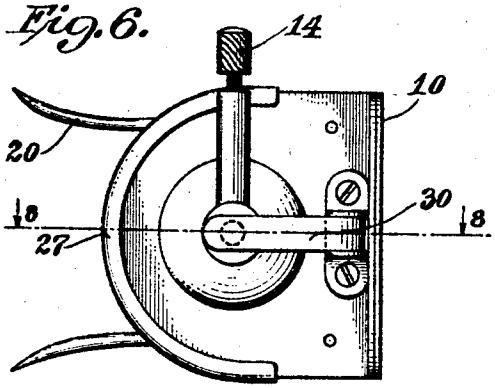


Fig. 6.



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UNITED STATES PATENT OFFICE

STANLEY W. LAWTON, OF NEW YORK, N. Y.

HOLDER FOR COLLAPSIBLE TUBES

Application filed May 2, 1928. Serial No. 274,505.

My invention relates particularly to devices of the character set forth in my Patent 1,617,917. One object is to provide a construction into which a collapsible tube may be readily inserted and in which the tube may be readily compressed from time to time so as to automatically discharge paste, cream, or the like. Another object is to provide a construction of this character in which the outlet is automatically opened during the squeezing operation and automatically closed at the end of the squeezing operation. Another object is to provide means for automatically cutting off the ejected paste or cream. Another object is to simplify and cheapen the construction.

In its preferred form the casing has an outlet for receiving the neck of a collapsible tube and the body of the tube is inserted between two pivoted jaws. These jaws are mounted to slide in the casing. The jaws are actuated by finger levers in compressing the tube and are retracted by a spring. A cut-off valve is mounted at the end of the casing to close the outlet and is operated by the jaw actuating mechanism to open the outlet at the beginning of the jaw closing or squeezing movement and a spring returns the cut-off valve to its closed position when the jaws are released. The jaws are fed downwardly by gravity after each squeezing operation.

Fig. 1 is a perspective view of one form of device involving my invention.

Fig. 2 is a perspective view showing the jaws and the mechanism for actuating the jaws and the cut-off valve.

Fig. 3 is a horizontal section and plan view showing the valve actuating means.

Fig. 4 is a detail vertical sectional view of the valve actuating mechanism.

Fig. 5 is a vertical sectional view of the apparatus with a tube in place and showing a modified form of the outlet control valve.

Fig. 6 is an end view of the construction of Fig. 5 looking upwardly.

Fig. 7 is a horizontal sectional view and plan of the construction of Figs. 5 and 6.

Fig. 8 is a fragmentary vertical sectional view of the same showing the valve mechanism.

The casing 10 may be formed of sheet metal with the back and sides integral and provided with inwardly turned flanges 11. The top and bottom may be secured in any suitable manner. The bottom plate is provided with an outlet neck 12 to receive the usual nozzle or neck of the collapsible tube 13. A screw 14 is provided for clamping the nozzle in the neck 12.

The slide 15 is guided between the back and sides of the casing and the flanges 11. The jaws 16 are pivotally supported by the slide 15 and adapted to grip the opposite sides of the tube to compress the same. These jaws are preferably provided with striated shoulders 17 adjacent their pivotal axes which constitute eccentric gripping members. The lower and outer edges of the jaws are normally pressed apart by the bowed spring 18 which has its ends sunk into the lower edges of the jaws.

The bars 19 are hinged or pivoted in the upper and lower ends of the casing and provided with projecting finger pieces 20 by which they may be pressed toward each other so as to close the jaws upon the opposite sides of the tube. When the finger pieces 20 are released the spring 18 swings the jaws outwardly and thus returns the bars 19 to their normal positions of rest. As the jaws open up they drop down slightly ready to again grip the sides of the tube in the next compression action.

The cut-off valve 21 is pivotally secured to the bottom plate by a screw 22 and has a tail piece 23 which projects through a slot 24 in the casing into the path of movement of the cam surface or shoulder 25 on the lower end of one of the bars 19. A spring 26 tends to hold the member 21 in position to close the outlet from the neck 12. When the bars 19 are operated to move the jaws 16 and compress the tube the shoulder 25 presses against the lug or tail piece 23 and opens the valve to allow the contents of the tube to be exuded. When the bars 19 are released a spring 26 closes the valve and cuts off the paste. This

keeps the end of the tube closed so as to prevent evaporation.

A cover 27 is preferably provided which overlaps the top and bottom edges of the casing and may be secured in place in any suitable manner for instance by hinges (not shown) or by interlocking bosses such as 28. The upper end of the cover 27 is provided with slots 29 for the finger pieces. The finger levers 20 may conveniently serve as means for hanging up tooth brushes, etc.

In the form shown on Sheet 2 a closure valve 30 is pivoted at 31 and its rear end 32 extends into the bottom of the casing where it is engaged by the spring 33 which yieldingly holds it in the closed position. The lever 34 is interposed between the upper end 32 of the valve lever and the shoulder 35 on the pivoted bar 36 so that when the front edge of the bar 36 is moved toward the axis of the casing the lever 34 will be tilted and will retract the valve 30. When the bar 19 is released the spring 33 will return the valve 30 to the closed position. It should be understood that various other changes may be made without departing from the spirit and scope of my invention.

I claim:

1. A tube press, comprising a casing having side walls with guide flanges and an outlet, a slide guided in said casing by said walls and flanges, jaws pivoted to said slide, operating bars pivoted in the upper and lower ends of the casing and engaging said jaws, externally accessible operating means including finger levers connected to said bars and means actuated by the finger levers for closing and opening the outlet.

2. A tube press comprising a casing having a means for supporting a compressible tube, a slide guided by the inner walls of the casing, tube compressing jaws hinged to said slide and movable therewith, manually operable means for operating said jaws and a valve operatively connected to said manual operating means for opening and closing the discharge outlet of said tube.

3. A tube press comprising a casing, a slide guided in the casing, movable jaws carried by said slide and adapted to compress a tube, operating bars co-acting with said jaws to compress the tube and finger levers hinged to said casing for operating said bars and a closure device actuated by one of said bars.

4. A tube press comprising a casing having an outlet at its lower end provided with means for gripping the neck of a tube, a spring pressed valve co-acting with the outlet for closing the same and adapted to be swung to one side to clear the outlet, movable jaws for compressing the sides of a tube in said casing, means for supporting said jaws, and manually operable means for moving said jaws to compress a tube and open said valve and spring means for retracting said jaws and closing said valve.

5. A tube press comprising a casing having a recess with an outlet and a clamp screw for supporting a compressible tube, a slide guided in the casing, tube compressing jaws hinged to said slide and movable therewith, manually operable swinging bars for operating said jaws hinged to the casing and projecting forwardly to engage the jaws and a valve for the outlet actuated with said jaws.

6. A tube press comprising a casing having an outlet, a slide guided in the casing, a pair of jaws hinged to said slide and adapted to compress a tube, operating bars co-acting with said jaws to compress the tube, a valve for said outlet, and finger levers hinged to said casing near its opposite sides and secured to said bars for actuating said jaws and said valve.

7. A tube press comprising a casing having an outlet at its lower end provided with means for holding the neck of a tube, a spring pressed valve co-acting with the outlet for closing the same, movable jaws for compressing the sides of a tube in said casing, sliding means for supporting said jaws, and manually operable means for moving said jaws to compress a tube and open said valve and a spring for retracting said jaws.

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