

Dec. 9, 1952

L. J. CRITELLI ET AL

2,620,943

CONTAINER SUPPORT WITH DISPENSING DEVICE

Filed Dec. 21, 1949

2 SHEETS—SHEET 1

Fig. 8.

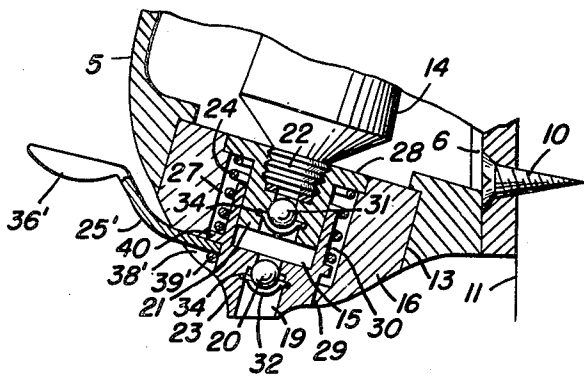


Fig. 1.

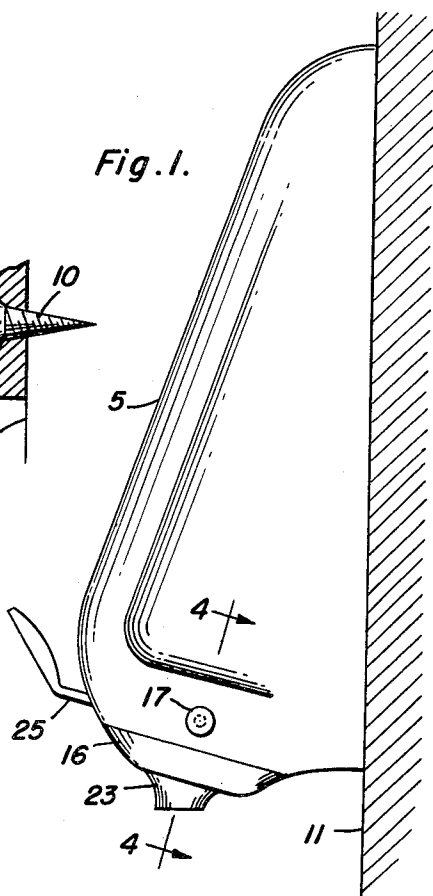


Fig. 6.

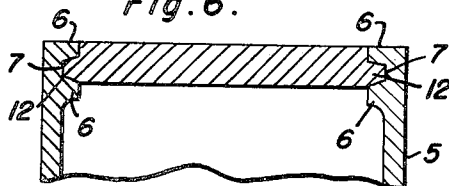


Fig. 9.

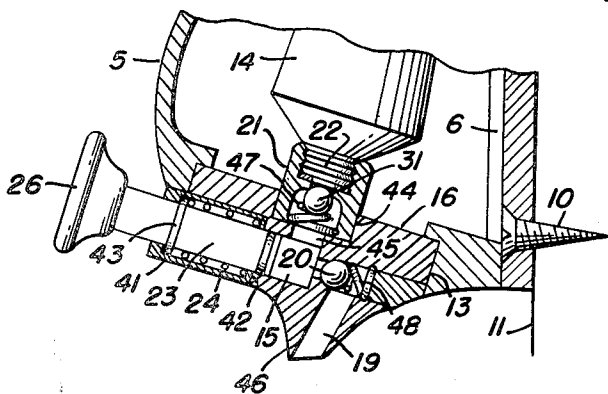
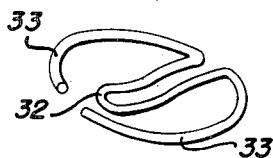


Fig. 7.



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2 SHEETS—SHEET 2

Fig. 4.

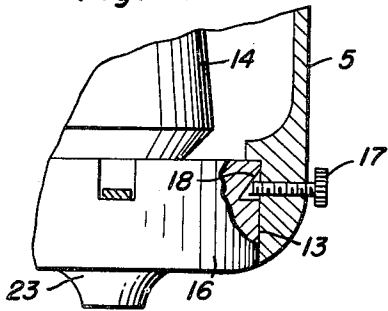


Fig. 2.

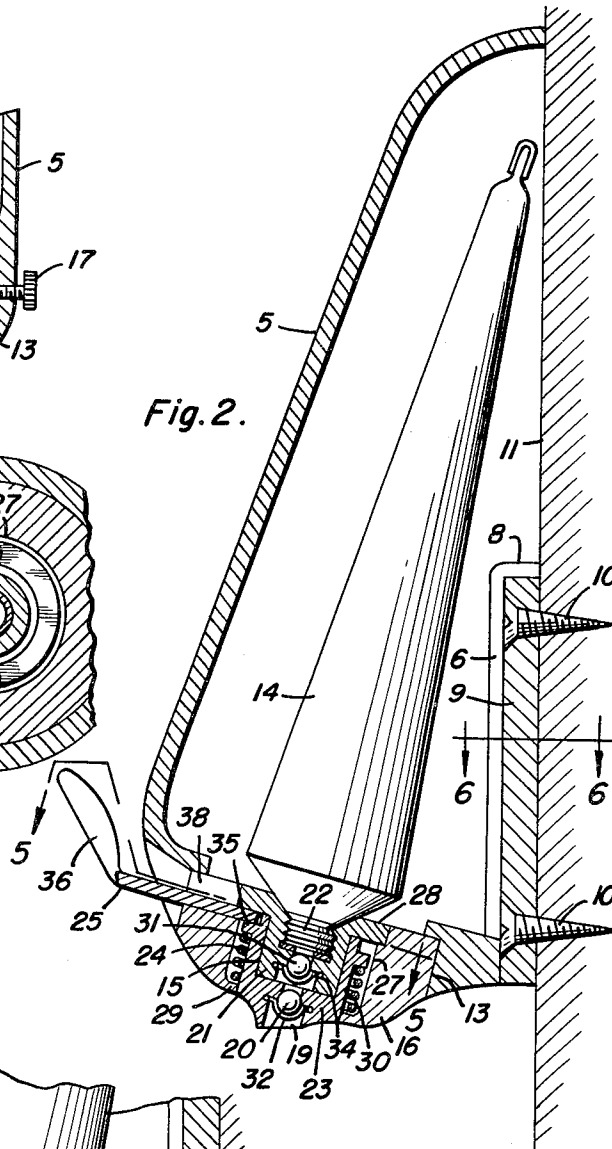


Fig. 5.

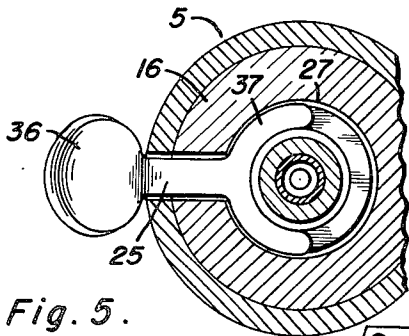
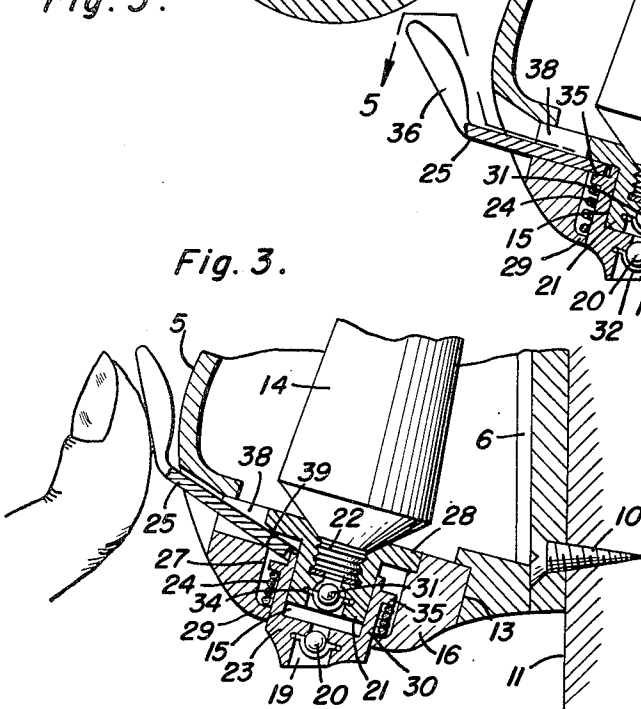


Fig. 3.



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UNITED STATES PATENT OFFICE

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CONTAINER SUPPORT WITH DISPENSING
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Application December 21, 1949, Serial No. 134,228

2 Claims. (Cl. 222-95)

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This invention relates to a device for use in dispensing predetermined quantities of tooth paste, shaving cream, or like material from collapsible tubes.

An object of the invention is to provide an improved device of the above kind in which the material is drawn by suction from the collapsible tube into a receiving chamber and then forced from said chamber by means of a plunger which is moved in one direction by means of a spring and which is manually moved in the opposite direction.

Another object is to provide a neat and efficient device of the above kind which is comparatively simple in construction and easy to use.

Other objects and features of the invention will be apparent from the following description when considered with the accompanying drawings, in which:

Figure 1 is a side elevational view of a dispensing device embodying the present invention;

Figure 2 is a central vertical sectional view thereof;

Figure 3 shows the lower portion of the device in section as in Figure 2, but with the plunger moved to draw material from the collapsible tube into the receiving chamber;

Figure 4 is an enlarged fragmentary section taken on the line 4-4 of Figure 1;

Figure 5 is a fragmentary section taken on the line 5-5 of Figure 2;

Figure 6 is a fragmentary horizontal section taken on the line 6-6 of Figure 2;

Figure 7 is a perspective view of the spring used to seat certain valve balls of the device;

Figure 8 is a view similar to the lower portion of Figure 2, showing a modification;

Figure 9 is a view similar to Figure 8, showing another modification.

Referring in detail to the drawings, 5 indicates a housing which is open at the back and provided with ribs 6 forming opposed internal guideways 7 along the lower portions of the rear margins of its side walls, said guideways being closed at the top as at 8 and open at the bottom. A plate 9 is adapted to be secured by countersunk screws 10 to a wall 11 and has side tongues 12 adapted to be slidably received in the guideways 7. Thus, the housing 5 may be readily mounted on and against or removed from the wall 11 by sliding it downwardly onto or upwardly off of the plate 9. The housing has a bottom opening 13 through which a collapsible tube 14 may readily pass.

The device also includes a dispensing unit hav-

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ing a receiving chamber 15 and including a member 16 removably fitted in the opening 13 and firmly secured therein by suitable means, such as a thumb screw 17 threaded through one side of the housing and engaged with the inclined wall of a cam recess 18 provided in the edge of member 16. The chamber 15 has an outlet passage 19 normally closed by a spring-seated valve member 20. A check valve is carried by the member 16 and includes a casing 21 having a lower outlet end communicating with the chamber 15 and an upper inlet end internally threaded for reception of the threaded outlet neck 22 of the tube 14 to support the latter within the housing 5. A plunger 23 is mounted in the member 16 and adapted to draw a quantity of material from the tube 14 through the check valve casing 21 and into the chamber 15 upon the suction stroke thereof and to force said quantity of material from said chamber past the valve member 20 upon the pressure stroke of the same. A spring 24 acts on the plunger to effect one of said strokes of the same, and means, such as an operating lever 25 or 25', or a knob 26, is provided to facilitate manual actuation of said plunger to effect the other stroke thereof.

In the embodiments of Figures 2 and 8, the member 16 is provided with a central opening 27 having an enlarged upper end portion in which is tightly fitted an annular external flange 28 provided on the upper end of the check valve casing 21 and supporting the latter within and in spaced concentric relation to the wall of said opening 27. The lower end of opening 27 is constricted by an annular flange 29. The plunger 23 in these embodiments consists of a discharge nozzle extending through and having a sliding fit in the flange 29 and provided with a skirt 30 having a sliding fit on the check valve casing 21 and providing the chamber 15 therein. The outlet passage 19 is formed in the lower end of the plunger nozzle 23. The check valve casing 21 has an internal seat, and a valve ball 31 is pressed upwardly against this seat by the central re-entrant portion 32 of a wire spring having arcuate end portions 33 which are snapped into an annular groove 34 provided in the wall of the passage through the casing 21. Valve member 20 is also preferably a valve ball similarly seated by a similar spring.

In the form of Figure 2, the skirt 30 has an external flange 35 at the top, and the helical compression spring 24 is disposed between the flanges 29 and 35 so as to effect the upward pressure stroke of plunger nozzle 23. The lever 25 is pro-

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vided with a finger piece 36 which is directed upwardly so that the outer end of said lever may be readily pressed upwardly to effect the downward suction stroke of the plunger nozzle 23. The inner end of lever 25 has a fork 37 which rests on the flange 35 and said lever extends through a groove 38 in the top of member 16 and is adapted to fulcrum on a corner of 39 of the latter at the inner end of said groove.

In the form of Figure 8, the spring 24 is interposed between the flange 28 of check valve casing 21 and an external flange 40 of plunger nozzle 23 so as to effect the downward suction stroke of the latter. The lever 25' has a substantially horizontal finger piece 36' adapted to be readily pressed downwardly to effect the upward pressure stroke of said plunger nozzle. The lever 25' extends through a groove 38' in the bottom of member 16 and has its forked end engaged with the underside of flange 40. A pin 39' is disposed across the groove 38' to form a fulcrum for the lever 25'.

In the form of Figure 9, the chamber 15 is formed in the member 16 and the rear portion of plunger 23 is reciprocable therein. This plunger 23 extends through a guide sleeve 41 carried by the member 16 and opening at its rear end into the front end of chamber 15. The spring 24 of this embodiment is disposed about plunger 23 and within the sleeve 41 and is interposed between a flange 42 on the rear end of said sleeve and a flange 43 on the plunger to effect the forward suction stroke of the latter. The lower end of the check valve casing 21, in this instance, is tightly fitted in a socket 44 provided in the top of member 16, and a port 45 affords communication between the outlet end of casing 21 and the rear end portion of chamber 15. The member 16 is formed to provide a bottom discharge nozzle 46, and the passage 19 extends through this nozzle and communicates at its upper end with the rear end of chamber 15. The check valve casing 21 has a seat therein, and the valve ball 31 is pressed upwardly to said seat by a spring 47. The valve ball 20 is pressed to a seat in the upper portion of passage 19 by a spring 48 in a direction toward the chamber 15.

In operation, a quantity of material is drawn by suction from the tube 14 past valve member 31 into chamber 15 by the plunger 23 upon its suction stroke, and such material is discharged from said chamber 15 through passage 19 past valve member 20 by the plunger 23 upon its pressure stroke. When the plunger is in its normal position, the valve members 31 and 20 are closed to exclude air and prevent the material from drying out in the chamber 15 and/or the tube 14. In the form of Figure 2, the plunger is manually operated to draw the material into chamber 15, and spring operated to force the material from the chamber 15. In the other forms, a spring

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operates the plunger to draw the material into chamber 15, and the plunger is manually operated to force the material from said chamber. When a collapsible tube is emptied, the member 16 may be removed so as to withdraw said tube from the housing and permit the latter to be readily replaced by a fresh tube. Changes in details of construction and other modifications of the invention are contemplated within the spirit of the invention as claimed.

Having described the invention, what is claimed as new is:

1. In a dispensing device, a dispensing unit having a receiving chamber and including a supporting member adapted to be mounted on a support, said chamber having an outlet passage, a spring-seated valve member normally closing said outlet passage, a check valve carried by said member and including a casing having a lower outlet end communicating with said chamber and an upper inlet end internally threaded for reception of the threaded outlet neck of a collapsible tube, a plunger mounted in said member and adapted to draw a quantity of material from the collapsible tube through the check valve casing into said chamber upon the suction stroke thereof and to force said material from said chamber past said spring-seated valve member upon the pressure stroke of the same, a spring acting on said plunger to effect one of said strokes of the same, means to facilitate manual actuation of said plunger to effect the other of said strokes thereof, said plunger comprising a discharge nozzle provided with said outlet passage and having a skirt slidably fitted on the casing of said check valve, said skirt having an external flange, said means to facilitate manual actuation of the plunger including a lever carried by said supporting member and having a finger piece at one end and provided with a fork at the other end embracing said nozzle and engaging said flange.

2. The construction defined in claim 1, wherein said supporting member is provided with an opening having an enlarged upper end portion, said check valve casing being provided at its upper end with an external flange tightly fitted in said upper end portion of said opening to support said casing within and in spaced concentric relation to the wall of said opening.

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