Dec. 19, 1950 J. GOODHEART 2,534,708

DEVICE FOR DISPENSING MATERIAL CONTAINED IN COLLAPSIBLE RECEPTACLES

Filed Nov. 5, 1947

Fig. 1.

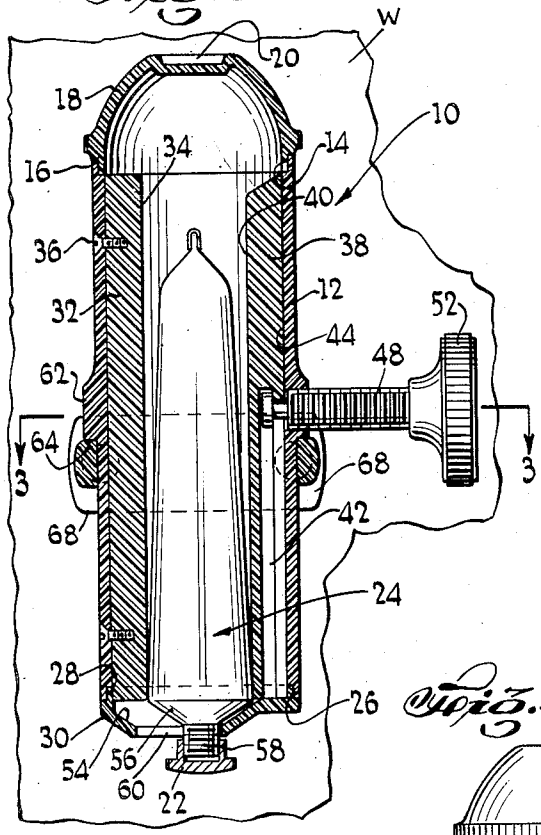


Fig. 2.

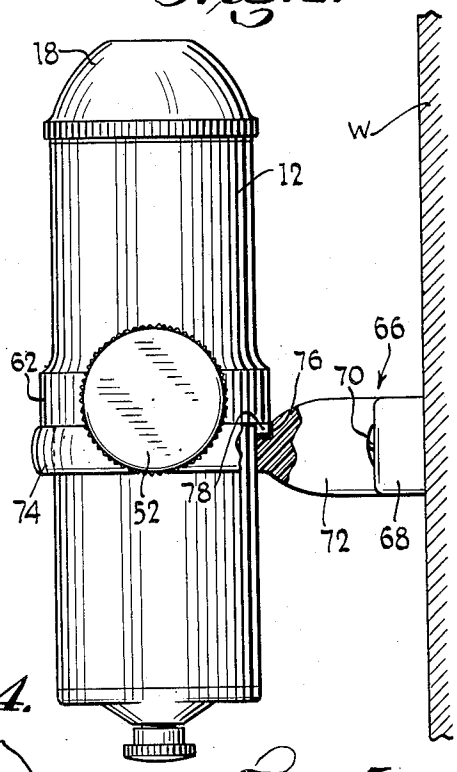


Fig. 3.

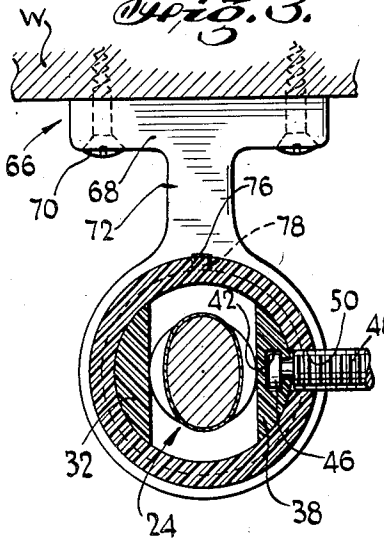


Fig. 4.

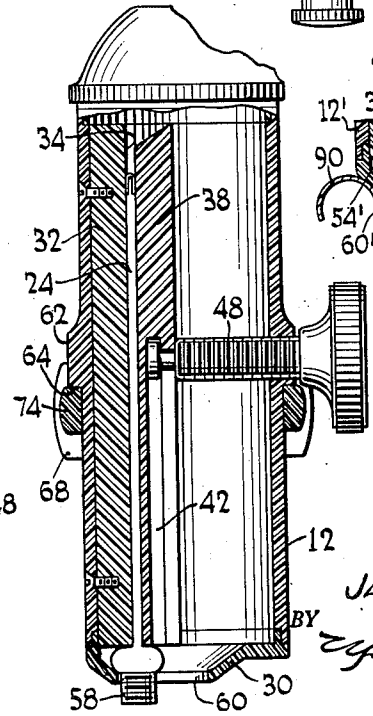


Fig. 5.

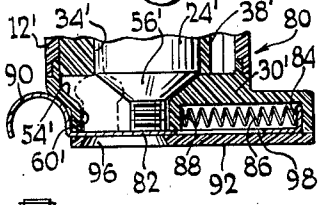
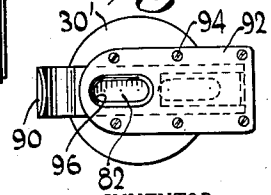


Fig. 6.



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DEVICE FOR DISPENSING MATERIAL CONTAINED IN COLLAPSIBLE RECEPTACLES

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2 Claims. (Cl. 222—103)

1

This invention relates to devices for dispensing, by squeezing, material contained in collapsible receptacles.

It is an object of the invention to provide a device of the character described, which comprises relatively few and simple parts, is economical to manufacture, and is easy and positive in operation.

It is another object of the invention to provide a device of the character described whose parts may be readily disassembled and put back together for replacement or cleaning purposes.

It is a further object of the invention to provide a device of the character described which has an attractive appearance.

Other objects of the invention will in part be obvious and in part hereinafter be pointed out.

The invention, accordingly, consists in the features of construction, combinations of elements, and arrangements of parts which will be exemplified in the devices hereinafter described, and of which the scope of application will be indicated in the claims.

In the accompanying drawings in which are shown various possible embodiments of this invention,

Fig. 1 is a vertical sectional view through a dispensing device embodying the invention;

Fig. 2 is a side view of said device;

Fig. 3 is a horizontal sectional view through said device, the same being taken substantially along the line 3—3 of Fig. 1;

Fig. 4 is a view similar to Fig. 1, showing the relative arrangement of the parts after substantially all the material within the collapsible receptacle has been extruded;

Fig. 5 is a fragmentary sectional view similar to Fig. 1 of the bottom of a device embodying a modified form of the invention; and

Fig. 6 is a bottom view of the modified device shown in Fig. 5.

Referring now in detail to the drawings, and more particularly to Figs. 1 through 4, the reference numeral 10 denotes a device embodying the invention, and comprising a tube 12 which is open at both ends. This tube can be fabricated from any suitable self-form-maintaining material, as for example, sheet metal or any one of the well-known moldable plastics. The tube 12 is provided at its top with an internal annular step 14 which is adapted to have seated therein a flange 16 depending from the lower end of a top cap 18. The fit between the flange and seat is snug so that these two members can be coupled or disengaged by hand, but when once coupled

2

will not tend to come apart accidentally. Optionally, said two parts can be matingly threaded. The upper surface of the top cap is formed with a recess 20 which is adapted to have disposed therein the screw cover 22 of a collapsible receptacle 24 when said cover is not in use.

The lower end of the tube 12 is formed with an internal annular step 26 in which there is tightly received an erect flange 28 integral with a bottom cap 30. These two parts also can be matingly threaded if desired. Furthermore, said two parts can be permanently secured to one another, if desired, as by soldering, brazing, or welding in the event that they are metal, or by heat fusion or cementing in the event they are plastic, inasmuch as it will be seen hereinafter that the bottom cap need not be removed in order to insert or take out the collapsible receptacle 24, this being intended to be accomplished by removal of the top cap 18.

Means is provided within the cap for pressing together the opposite side walls of the collapsible receptacle. Pursuant to this invention, said means comprises a member 32 providing a surface 34 which extends in a vertical direction. Optionally this surface may be plane, although the device will function equally well if the surface is somewhat curved in any direction. The member 32 may be a separate piece, as indicated in the figures, or it can be formed in one piece with the tube 12. This latter arrangement is particularly desirable when said tube is made by molding of a plastic material. In the event that the member 32 is separately fabricated, it is held in place by suitable attaching means, e. g. screws 36.

The pressing means includes a second member 38, likewise disposed within the tube. This member has a surface 40 which extends in a generally vertical direction and negatively matches, i. e. is parallel to, the surface 34. In the event the surface 34 is flat, the surface 40 likewise is flat so that these two surfaces, when pressed together, can squeeze substantially all the material out of the collapsible receptacle.

The member 38 is mounted in such fashion that it can be shifted toward or away from the member 32. In accordance with the invention, such mounting is performed by providing said member 38 with a vertical slot 42 of T-shaped configuration (see Fig. 3). Said slot, in addition to opening along the back surface 44 of the member 38 extends down to and opens at the bottom of said member, whereby to permit insertion in said slot of the T-shaped tip 46 of a threaded spindle or screw 48. Said screw is threaded

through a tapped bore 50 in the tube 12 whereby rotation of the spindle in an appropriate direction will force the member 38 toward the surface 34. This bore is larger than the tip 46. The slot 42 is of such length that when the lower end of the member 38 rests on the inner surface of the bottom cap 30, the top of the slot will be just slightly above the T-shaped head 46 of the screw 48. Said screw has its free end provided with a handle 52, so as to expedite manual manipulation thereof.

The foregoing construction and arrangement of the member 38 and bolt 48 permit the dispenser to be assembled with great ease and allows such parts to be easily removed for cleaning.

The bottom cap 30 is formed with a cavity 54 in which the frusto-conical portion 56 of the collapsible receptacle immediately beneath the dispensing tip 58 thereof is adapted to be seated. The base of said cavity is provided with a downwardly extending aperture 60 which is elongated in a direction parallel to the longitudinal axis of the screw 48 whereby to permit shifting of the dispensing tip 58 as the tube is squeezed.

The tube 12 is formed with an external annular projection or rib 62 through which the bore 50 extends. This rib serves a dual function, to wit, to strengthen said bore and to provide an abutment or shoulder 64 whose purpose soon will be apparent.

Means also is included to detachably secure the dispenser in operative position. Such means includes a bracket 66 comprising a base 68 which is adapted to be secured, as by screws 70, to a wall W or the like. A shank 72 extends forwardly from the base 68 and terminates in a ring 74 having an internal diameter such that it can snugly slidably receive the tube 12 therein. When the tube is inserted into the ring it can slide therethrough until the shoulder 64 strikes the upper rim of the ring. Said bracket may be provided with a socket 76 which is adapted to receive a lug 78 projecting from the tube in order to prevent angular movement of the tube when operatively disposed in the bracket.

To use the device the top cap 18 is removed and the screw cover 22 of the collapsible receptacle unscrewed from the dispensing tip 58. The member 38 is backed away from the surface 34 by turning the screw 48 in the proper direction. Now the collapsible receptacle is slipped, dispensing end foremost, into the top of the device 10 between the members 32 and 38. The dispensing tip 58 is thrust through the slot 60 so as to allow the free end of said tip to protrude from the bottom cap 30. Next the screw cover 22 is restored on the dispensing tip 58 and the cap 18 put back in place. Thereupon, when it is desired to dispense the substance contained within the collapsible receptacle, the screw cover 22 is removed, the handle 52 turned to squeeze material out of the receptacle, and, when sufficient material has been dispensed, the cover 22 is put back on the receptacle. This operation can be repeated until substantially all the material is dispensed from said receptacle, whereupon the receptacle will have the appearance shown in Fig. 4. It will be observed in this figure that, as the member 38 moves toward the surface 34, the dispensing tip 58 moves in the same direction, and it is for this reason that the slot 60 is elongated parallel to the longitudinal axis of the screw 48.

In Figs. 5 and 6 there is shown a device 80 embodying a modified form of the invention

which is substantially similar to that disclosed in Figs. 1 through 4, but differs therefrom in that means is provided to do away with the need for removing and replacing the screw cover 22. In this modified device all parts similar to those illustrated in Figs. 1 through 4 are denoted by the same reference numerals primed.

The device 80 differs from the device 10 principally in the construction of the bottom cap 30'. Said bottom cap is attached to the tube 12' in the same manner that the cap 30 is attached to the tube 12. Also the cap 30' is provided with a through opening 60' which is elongated parallel to the longitudinal axis of the screw 48'. However where, in the cap 30 this opening was shallow enough to permit the dispensing tip 58 to protrude therethrough, in the cap 30' the opening 60' is deep enough to just fully accommodate the dispensing tip 58'.

Said cap 30' is provided with a cut-off plate 82 which is mounted to slide in the cap 30' in a plane immediately below the bottom rim of the dispensing tip 58, it being observed that this rim occupies a predetermined position in the bottom cap because of the abutment against the cavity 54' of the frusto-conical portion 56' of the collapsible receptacle 24'. The cut-off plate 82 is mounted to slide in recesses disposed within the cap and has an upturned finger 84 at one end thereof against which a compressing spring 86 bears, the other end of said spring bearing against the end of a cavity 88 located within the cap 30'.

The projecting end 90 of the plate 82 is formed into a suitable shape to facilitate manual manipulation of the plate. The under surface of the cut-off plate is supported by a panel 92 which is secured, as by screws 94, to the bottom of the cap 30. This panel is provided with an opening 96 in registry with the opening 60'. The plate 82 includes a through opening 98 which, when the plate is biased to its extreme right-hand position, as viewed in Fig. 5, is out of registry with the openings 60', 96. However, when said cut-off plate is urged to the left, as viewed in this figure, all openings will be in registry, whereupon turning the handle 52' will urge the member 38' toward the surface 34' and cause material to be squeezed out of the collapsible receptacle and through the opening 96. The fully collapsed position of the receptacle 24' is indicated by the dotted lines in Fig. 5.

It thus will be seen that there are provided dispensing devices which achieve the objects of the invention and are well adapted to meet the conditions of practical use.

As various possible embodiments might be made of the above invention, and as various changes might be made in the embodiments above set forth, it is to be understood that all matter herein described, or shown in the accompanying drawings, is to be interpreted as illustrative and not in a limiting sense.

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

1. A device for dispensing material from a collapsible receptacle having a dispensing tip, said device comprising a tube, removable means to close the top of said tube, means to close the bottom of said tube, said last named means having an opening therethrough to pass the tip of the collapsible receptacle, a vertical stationary surface within said tube, a member having a surface approximately parallel to said stationary surface, said member having a vertical T-shaped slot ex-

tending upwardly from the bottom thereof, a horizontal screw, a tapped opening in the tube for threadedly receiving said screw, the tip of said screw within the tube having a T-shaped head which is slidably received in said slot whereby turning the screw will shift the member toward or away from the stationary surface and whereby said member may be lifted off the screw and out of the tube for cleaning when the top closing means is removed.

2. A device as set forth in claim 1 wherein the T-shaped head of the screw has a smaller diameter than the tapped opening whereby said head can be withdrawn from the tube for cleaning.

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