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REMOTELY ACTUATED PRESSURE DISPENSING CONTAINER HAVING A DISTENDABLE BODY

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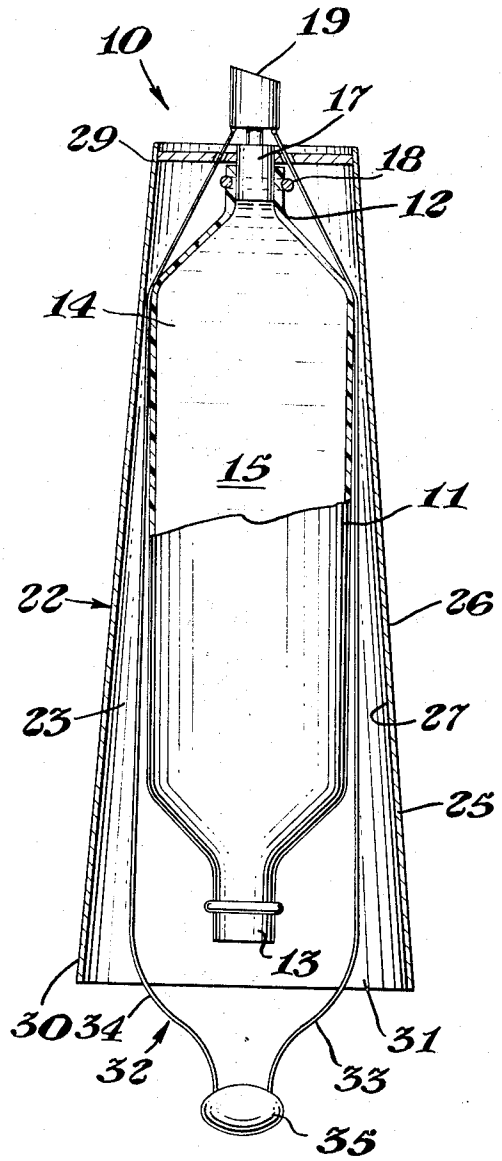


Fig. 1

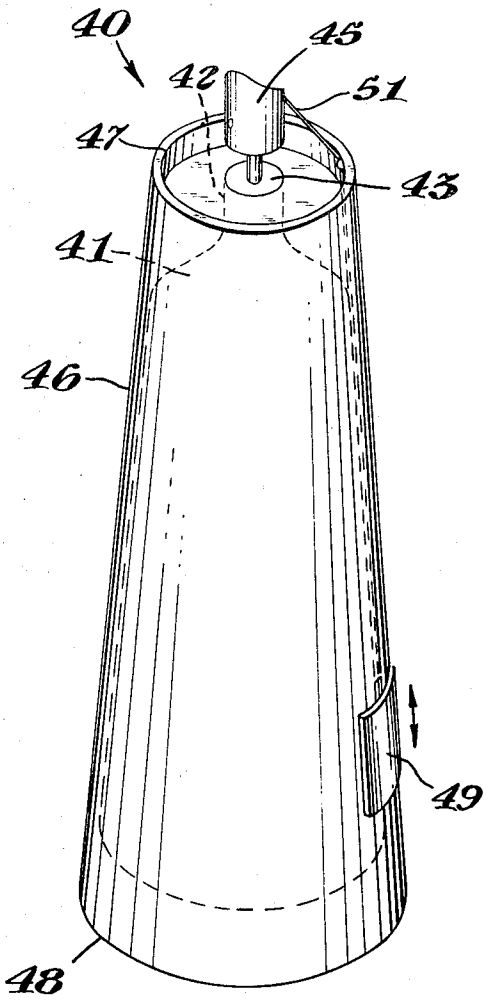


Fig. 2

INVENTOR.
Glenn C. Wiggins
BY
AGENT

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REMOTELY ACTUATED PRESSURE DISPENSING CONTAINER HAVING A DISTENDABLE BODY

Glenn C. Wiggins, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

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7 Claims. (Cl. 222—183)

This invention relates to an improved pressure dispensing container having a remotely actuated dispensing valve, and more particularly relates to an improved dispensing container having a remotely actuated valve coupled to a distended elastomeric body.

Many pressure dispensing containers are available which contain a wide variety of products. Frequently, it is desired to operate a pressurized dispensing container in an inverted position or in a position where the dispensing valve is remotely located relative to the operator's hand or hands. Typically, certain cleaning solutions, paints, dyes and the like when packaged in a pressurized dispensing vessel are not always as desirable as they might be in that the operator's hand must be disposed in relatively close proximity to the valve or to a lever actuating mechanism spaced from the valve. Many conventional pressurized dispensing containers are not readily provided with a remote actuating means in that this remote actuating means is disposed externally to the container and oftentimes interferes with packaging and may unintentionally open the dispensing valve.

It would be beneficial if there were available an improved pressurized dispensing container which could be remotely actuated and a major portion of the actuating mechanism disposed within the container.

It would also be beneficial if the there were available an improved pressurized dispensing container which has a valve which can be remotely activated and which does not require special precautions in packaging and handling.

It would also be desirable if there were an improved dispensing container available having a remotely actuated valve which is simple and inexpensive to produce.

These benefits and other advantages in accordance with the present invention are achieved in a pressurized dispensing container comprising a pressure distendable elastomeric body having a first end and a second end, the body defining an internal cavity, the body being composed of a pressure distendable elastomeric material, a dispensing valve affixed to the first end of the body and providing selective communication with the interior thereof, a housing disposed about the distendable body, and a flexible valve actuating element operatively affixed to the valve, the valve actuating element extending within the housing from the first end of the elastomeric body to a position generally adjacent the second end of the elastomeric body.

Further features and advantages of the present invention will become more apparent from the following specification when taken in connection with the drawing wherein:

FIGURE 1 schematically depicts a sectional view of a container in accordance with the present invention.

FIGURE 2 is a schematic representation of an alternate container in accordance with the invention.

In FIGURE 1 there is depicted a pressurized dispensing container generally designated by the reference numeral **10**. The container **10** comprises in cooperative combination a hollow distended elastomeric body **11**. The body **11** in its undistended form has a generally cylindrical configuration. The body **11** has a first end **12** and a second end **13**. The body **11** defines an internal cavity or chamber **14** having disposed therein a liquid **15**. Because of the elastomeric nature of the body **11**, the liquid **15** is under

pressure. A dispensing valve **17** is affixed to the first end **12** of the body **11** in such a manner that the valve **17** provides selective communication between the cavity and a location external to the body **11** when the valve is actuated. The valve **17** is maintained in sealing engagement with the first end **12** of the body **11** by means of a compression ring or collar **18**. The dispensing valve **17** has an actuating means or cap **19** which, on being depressed toward the first end **12** of the body **11** permits flow of liquid **15** from the cavity **14**. A housing **22** is disposed generally coaxial about the body **11**. The housing **22** defines an internal cavity **23**. The housing **22** has a wall **25** having an external surface **26** and an internal surface **27**. The housing **22** has a first end **29** and a second end **30**. The valve **17** beneficially is affixed to the first end **29** of the housing **22** and passes therethrough in such a manner that the actuating means or cap **19** is disposed external to the cavity **23**. The second end **30** of the housing **22** defines an aperture or opening **31**. A flexible actuating means **32** passes from a location generally adjacent the second end **13** of the distendable body **11** between the internal surface **27** of the housing **22** and the body **11** and is secured to the cap **19**. The flexible actuating element **32** comprises a first flexible element **33** and a second flexible element **34**. The elements **33** and **34** remote from the cap **19** are secured to a finger engaging means **35**.

In operation of the container as depicted in FIGURE 1, the distendable body **11** is filled with a liquid which is desired to be dispensed. Beneficially, filling may be accomplished in the conventional manner through the valve, or alternately, may be injected through the second end **13** and the second end **13** clamped to provide a suitable seal. Beneficially, such filling may be accomplished by means of a hollow needle or the like. The valve **17** beneficially is secured to the housing **22** and the flexible actuating elements **33** and **34** are disposed between the distendable body **11** and the wall **27** of the container. Grasping the housing **22** adjacent the bottom between the thumb and middle finger permits the index finger to grasp the finger engaging means **35** and exerting pressure on the finger engaging means away from the opening **31** the cap **19** is moved toward the second end **12**, the body **11** and liquid is released. When the pressure of the index finger is removed from the finger engaging means **35**, the tension in the valve **19** causes the flexible elements to move toward the first end **12** of the body **11** and the valve to close. Thus, the container of FIGURE 1 is readily held and operated in one hand or two hands, as desired.

In FIGURE 2 there is depicted an alternate pressure dispensing container in accordance with the present invention generally designated by the reference numeral **40**. The container **40** comprises a distended elastomeric container **41** generally similar to the body **11** of FIGURE 1. The body **41** has a first or valve end **42** having disposed therein a dispensing valve **43**. The dispensing valve **43** has a cap or actuating means **45** which is adapted to selectively open or close the valve **43** as the cap is tilted. A hollow housing **46** surrounds the body **41**. The housing **46** defines a first or upper end **47** and a second or lower end **48**. A sliding control means **49** projects from the housing **46** adjacent the second end **48**. The control means **49** is in communication with an elongate flexible actuating means **51** which passes from the control means **49** to the cap **45** between the housing **46** and the distendable body **41**. Motion of the control means **49** toward the second end **48** within a slot not shown causes the flexible control means **51** to tilt the cap **45** and permit the contents of the body **41** to discharge.

Dispensers in accordance with the present invention are readily prepared employing a wide variety of materials for the outer housing including rigid and flexible plastics, metal and the like. Most often, however, it is desirable

to employ a rigid material such as sheet steel, aluminum, polystyrene, polyvinyl chloride and the like. The distendable body **11** or **41** beneficially is prepared from an elastomer such as vulcanized natural rubber, neopentane rubber and the like. Such distendable bodies are often readily prepared employing gum rubber tubing which has a valve clamped in one end and a plug in the opposite end. Beneficially, the plug may be solid gum rubber and a rigid material such as a synthetic resin which is non-reactive with the contents of the dispenser. The flexible elements beneficially may be prepared from flexible wire, oriented plastic monofilament, braid or light cord.

Containers in accordance with the present invention are readily actuated when held at a location remote from the valve and may be operated with one or two hands as desired and offer substantially little or no difficulty in packaging and shipping.

As is apparent from the foregoing specification, the present invention is susceptible of being embodied with various alterations and modifications which may differ particularly from those that have been described in the preceding specification and description. For this reason, it is to be fully understood that all of the foregoing is intended to be merely illustrative and is not to be construed or interpreted as being restrictive or otherwise limiting of the present invention, excepting as it is set forth and defined in the hereto-appended claims.

What is claimed is:

1. A pressurized dispensing container comprising

a pressure distendable elastomeric body having

a first end and

a second end, the body defining

an internal cavity, the body being composed of a pressure distendable elastomeric material,

a dispensing valve affixed to the first end of the body and providing selective communication with the interior thereof,

a housing disposed about the distendable body,

a flexible valve actuating element operatively affixed to the valve, the valve actuating element extending within the housing from the first end of the elastomeric body to a position generally adjacent the second end of the elastomeric body.

2. The container of claim **1** wherein the elastomeric body is disposed entirely within the housing.

3. The container of claim **2** wherein the valve actuating element has secured thereto a finger engaging means adjacent the second end of the elastomeric body.

4. The container of claim **3** wherein the finger engaging means is disposed generally within the housing.

5. The container of claim **3** wherein the finger engaging means is disposed generally external to the housing.

6. The container of claim **1** wherein the distendable body is distended by means of a fluid disposed therein.

7. The container of claim **1** wherein the flexible valve actuating element comprises

a first flexible element

and a second flexible element, the first and second flexible elements being joined adjacent the second end of the container.

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ROBERT B. REEVES, *Primary Examiner.*

K. N. LEIMER, *Assistant Examiner.*