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Pehr et al.

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[54] **ONE PIECE MOLDED DISPENSING SPOUT CAP**

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[52] **U.S. Cl.** **222/513**; 222/536; 222/538

[51] **Int. Cl.²** **B67D 3/00**

[58] **Field of Search** 222/206, 212, 213, 513, 222/529, 530, 536, 538

[56] **References Cited**

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[57] **ABSTRACT**

A one piece dispensing spout cap closure for use on hollow bodied containers with the closure having a body portion adapted to be secured to the container. The body portion has a flexible top wall portion with an integral spout biased to an open position and interengaging portions to hold the spout in closed position. The interengaging portions on the spout and body providing a resistance to opening movement of the spout and thereby a safety dispensing closure. Torque members are integral with the top wall portion and extend from opposite sides of the spout and are generally normal to the plane of movement of the spout. Seal means are provided on the spout retaining means for closing a dispensing opening through the spout portion when same is in the nondispensing position. The closure is adapted to be manufactured as an integral structure by molding same from a resilient plastic resin.

7 Claims, 4 Drawing Figures

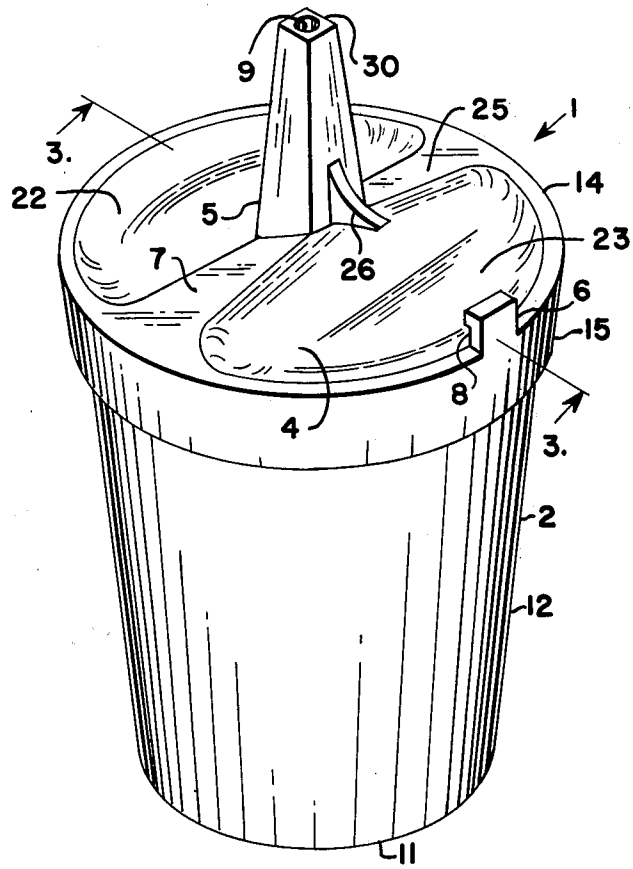


Fig. 1.

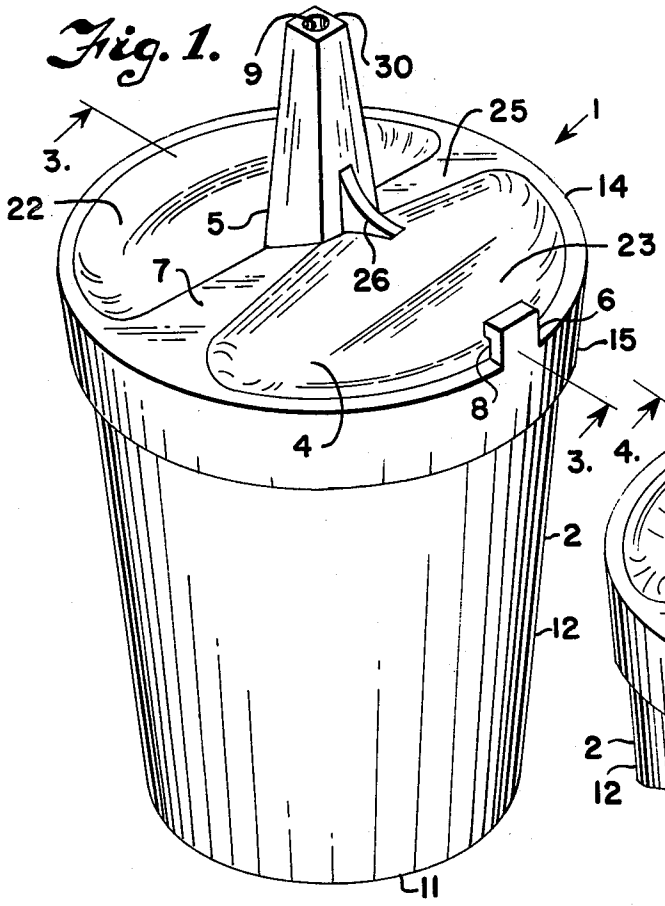


Fig. 2.

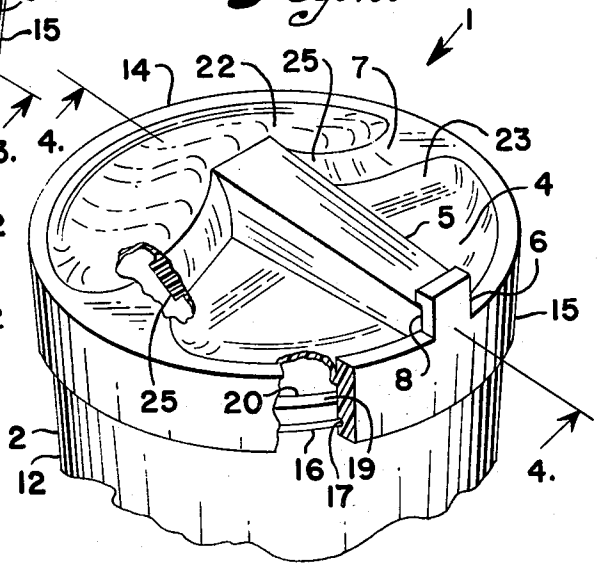


Fig. 3.

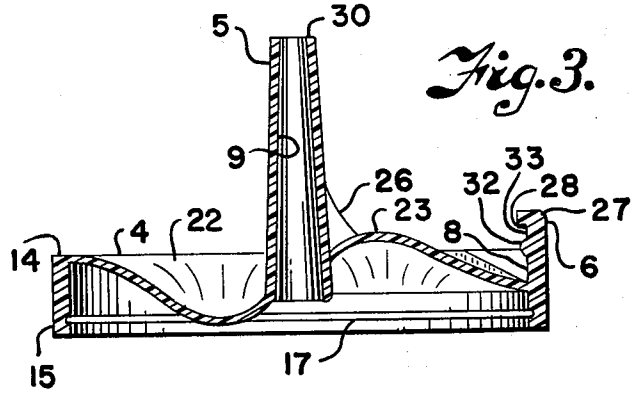
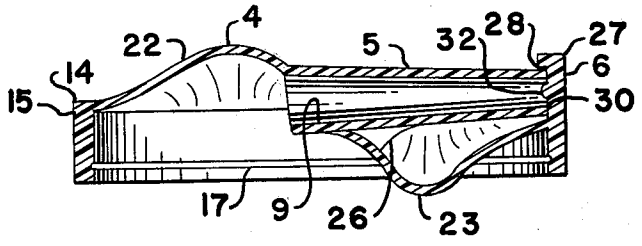


Fig. 4.



ONE PIECE MOLDED DISPENSING SPOUT CAP

The principal objects of the present invention are: to provide a one piece integrally molded safety dispensing spout cap or closure for use on hollow container bodies; to provide such a closure body portion having a flexible top wall and a dispensing spout member which permits movement of the dispensing spout between a discharge and non-discharge position; to provide such a dispensing closure with means for releasably retaining the spout portion in the non-discharge position and to seal the dispensing opening when same is in the non-discharge position; to provide such a closure which is adapted to be manufactured by an injection molding process from a resilient plastic material; to provide such a dispensing closure with a flexible top wall portion which is adapted for biasing the spout portion to the discharge position wherein release of the retaining means allows said spout portion to move to the discharge position; to provide such a dispensing closure which is adapted to be attached to a container body and is separate therefrom; to provide such a dispensing closure which is adapted for dispensing of viscous materials, and the like, from the container body; to provide such a safety dispensing closure which is economical to manufacture with mass production methods; and to provide such a dispensing closure which is well adapted for its intended use.

Other objects and advantages of the present invention will become apparent from the following description taken in connection with the accompanying drawings wherein are set forth by way of illustration and example certain embodiments of the present invention.

FIG. 1 is a perspective view of the dispensing closure on a container body with a spout portion in the open position.

FIG. 2 is a perspective view of the dispensing closure with the spout portion in a closed position with portions broken away to show structural details thereof.

FIG. 3 is a section view of the dispensing closure taken along the lines 3—3, FIG. 1 with the spout portion in the open position.

FIG. 4 is a section view of the dispensing closure taken along the lines 4—4, FIG. 2, showing the spout portion in the closed position.

Referring more in detail to the drawings.

As required, detailed embodiments of the present invention are disclosed herein. However, it is to be understood that the disclosed embodiments are merely exemplary of the invention which may be embodied in various forms. Therefore, specific structural and functional details disclosed herein are not to be interpreted as limiting but merely as a basis for the claims and as a representative basis for teaching one skilled in the art to variously employ the present invention in any appropriate detailed structure.

The reference numeral **1** designates generally a dispensing container having a plurality of walls defining a hollow container body **2**. The top end of the container **1** is defined by a wall member **4** which has a dispensing spout member **5** thereon with the spout member **5** movable between discharge and non-discharge positions by flexing of the wall **4**. Retaining means **6** are provided on the container for releasably retaining the spout member **5** in its non-discharge position. Biasing means **7** are also provided which cooperate with the spout **5** whereby release of the retaining means allows the spout **5** to move under bias to the open position as illustrated

in FIG. **1**. Seal means **8** are also provided which cooperate with the spout **5** for sealing a discharge opening or passage **9** when the spout **5** is in the closed position as illustrated in FIG. **2** to prevent the discharge of materials from the container **1**.

In the illustrated structure, the container body **2** is comprised of a bottom wall **11** and a side wall **12** extending upwardly from the bottom wall **11**. Preferably the wall **4** is separate from the container body **2** but it is to be understood that the wall **4** and the wall **12** could be integral. The container body **2** can be manufactured in any method and preferably is manufactured from a synthetic plastic resin whereby the container body **2** is flexible for discharging contents through the discharge opening or passage **9** by squeezing the body **2**. When the container body **2** and the top wall **4** are separate parts, the container body **2** is provided with a dispensing closure designated by the reference numeral **14** which has the wall **4** as a part thereof. Suitable means are provided for securing the closure **14** to the container body **2** and as illustrated, the closure **14** has a depending body member or skirt **15** that is suitably sized and shaped to fit on the exterior of the container body **2**. Preferably, the container body **2** has a rib **16** on the exterior surface thereof and the closure **14** has a groove **17** in the interior of the skirt **15** wherein the rib **16** and groove **17** interengage for securing the closure **14** to the container body **2**. The side wall **12** has an upper edge **19** that defines a top opening **20** for the container body **2** wherein the wall **4** overlies and closes the top opening **20**. Preferably the wall **4** has an undulating contour wherein the surface area is greater than the area defined by the inner periphery of the skirt **15** to allow flexing thereof and movement of the spout **5**.

As described above, the wall **4** permits movement of the dispensing spout **5** between discharge and non-discharge positions both by the flexibility of the wall **4** and the excess material in the wall **4**. As illustrated, the flexible wall **4** is divided into two portions **22** and **23** which are positioned on opposite sides of the spout **5** wherein when the spout **5** moves to the discharge position it overlies a portion of the wall **23**. A torque member or increased thickness section **25** is integral with and positioned between the two wall portions **22** and **23** and is connected to opposite sides of the spout **5** extending therefrom to opposite sides of the skirt **15** wherein the torque member extends generally normal to the plane of movement of the spout **5** and provides an axis about which the spout **5** can move. As illustrated in FIG. **1**, the closure **14** is molded with the spout **5** in a generally upstanding position wherein movement from the upstanding position or discharge position to the non-discharge position induces torque in the torque member **25**. Upon release of the spout **5** from the retaining means **6**, the torque member **25** can relax to relieve the torque and resiliency of the material therein and urge the spout **5** to return to its generally upstanding position under the bias of the torque. The contours of the wall portion **22** and **23** also provide a certain amount of biasing force on the spout **5** to help return same to the generally upstanding as molded position. A gusset member **26** is integral with one side of the spout **5** and the wall portion **23** extending therebetween urging the wall **23** to be concave when the spout **5** is in the non-discharge position and to prevent same from interfering with the spout **5** when moving to or when in the non-discharge position.

The retaining means **6** in the illustrated structure includes a catch **27** of the safety type requiring force to open and has a flange portion **28** extending therefrom which is engageable with a portion of the free end of the spout **5** when same is in the non-discharge position for retaining same in that position. The catch **27** is integral with and extends upwardly from the skirt **15** and is resilient to provide for release of the spout **5.** It is to be noted that other types of catches can be used in place of the catch **27** as illustrated. The seal means **8** are provided for closing the dispensing opening **9** which opens on a free end **30** thereof. Any suitable seal means can be provided and as illustrated, a protuberance **32** is on the catch **27** and extends into the opening **9** when the free end **30** of the spout **5** is in engagement with a surface portion **33** of the catch **27** thereby sealing the spout **5** when same is in its non-discharge position. The length of the spout member **5** is such that when in the non-discharge position the wall **4** and torque member **25** are so stressed to hold the end **30** in firm and positive engagement with the surface **33** thereby requiring force to release the catch **27** and allow the spout **5** to move. Force must be applied to either the spout **5** or catch **27** to release the spout **5** wherein the force is predetermined and permits opening by persons strong enough to apply the force. The force required can be sufficiently great to prevent opening by young children and the like.

The illustrated closure **14** is adapted to be molded as an integral structure from a resilient plastic resin with the spout **5** in a generally upstanding position with the axis of the spout extending longitudinally or parallel to the axis of the container body **2.** The resiliency of the material provides for operability of the structure and permits repeated reuse of the closure **14.** The container **1** is particularly well adapted for the storage and dispensing of liquids and viscous materials such as mustard and the like.

It is to be understood that while we have illustrated and described certain forms of our invention, it is not to be limited to the specific form and arrangement of parts herein described and sworn.

What we claim and desire to secure by Letters Patent is:

1. A dispensing container comprising:

a. a plurality of walls forming a hollow container body at least one of said walls being flexible;

b. a spout member having a through dispensing opening and being integral with said flexible wall and moveable between first and second positions wherein said flexible wall flexes to permit the movement of said spout member;

c. resilient means cooperating with said spout member for biasing same to move from said second position to said first position with said first position being a discharge position;

d. a retaining member selectively cooperating with said spout member adjacent a free end thereof for releasably retaining said spout member in said second position;

e. seal means on said retaining member and engaging said spout member when same is in said second position for sealing said dispensing opening;

f. said resilient means includes an increased thickness portion integral with said flexible wall and connected to said spout member providing a biasing torque to said spout member for urging same to move from said second position to said first position, said biasing torque being induced by moving said spout member from said first position to said second position;

g. said increased thickness portion dividing said flexible wall into a plurality of portions wherein said spout member overlies a portion of one of said wall portions when in said second position;

h. a gusset member integral with and extending between said spout member and said flexible wall and urging said one wall portion to project inwardly of said container when said spout member is in said second position.

2. A dispensing closure for use with a container having a wall provided with an opening, said dispensing closure comprising:

a. a body member;

b. a flexible wall member extending between portions of said body member and being integral therewith;

c. a spout member having a through dispensing opening and being integral with said flexible wall and moveable between first and second positions wherein said wall flexes to permit movement of said spout member;

d. biasing means cooperating with said spout member for biasing same to said first position and urging movement of said spout member from said second position to said first position;

e. retaining means cooperating with said spout member adjacent a free end thereof and releasably retaining said spout member in said second position;

f. means on said body member adapted for securing same to a container body to close an opening therein;

g. seal means on said retaining means and engaging said spout member for closing said dispensing opening when said spout member is in said second position;

h. said flexible wall being on opposite sides of said spout member with said biasing means including an increased thickness portion integral with said flexible wall and extending from opposite sides of said spout member to said body member;

i. said spout member being molded in a generally upstanding position with said upstanding position being said first position whereby movement of same from said first position to said second position induces a torque in said increased thickness portion and release of said spout member allows the torque to be released and return said spout member to said first position; and

j. said body member, flexible wall, spout member and retaining means being integral and molded from a resilient plastic resin.

3. The dispensing closure as set forth in claim **2** wherein:

a. said retaining means includes a catch member having portions thereof engageable with portions of said spout member adjacent the free end thereof, said spout member being releasable by application of a predetermined amount of force to one of said catch member and said spout member.

4. A dispensing container comprising:

a. a hollow container body having bottom, side and top walls, said top wall being flexible;

b. a spout member having a through dispensing passage and being integral with said flexible wall, said

spout member and flexible wall being molded with the spout member in upright discharging position, said spout member being spaced from said side walls;

c. said flexible top wall having elongate torque member portions of increased thickness extending in opposed relation from the spout member to said side walls defining an axis of pivotal movement of said spout member from said discharge position to a second position substantially overlying a portion of said flexible wall, said flexible top wall being divided into two portions which are positioned on opposite sides of the spout member, said torque member portions being integral with and positioned between said two top wall portions and connected to the spout member and side walls and having resilient biasing action urging said spout from said second position to said discharge position, said pivotal movement of said spout being in a plane normal to the torque member portions, said spout member overlying a portion of one of said two wall portions when in said second position, and a retaining member selectively cooperating with said spout member adjacent a free end thereof when in said second position for releasably retaining said spout member in said second position.

5. The dispensing container as set forth in claim **4** including:

a. seal means on said retaining member and engaging said free end of said spout member when same is in said second position for sealing said dispensing passage;

b. said spout member having a length such that engagement of said seal means with said spout free end stresses said torque member positions to hold the spout member and retaining member engaged in said second position.

6. The dispensing container as set forth in claim **4** wherein:

a. said flexible top wall being separate from the remaining container defining walls with said flexible top wall overlying and closing a container opening defined by an edge of at least one of the remaining container walls;

b. means on said flexible top wall and cooperating with said container wall defining said container opening for securing said flexible top wall in closing relation to said container opening; and

c. said flexible top wall having an undulating contour.

7. The dispensing container as set forth in claim **6** wherein:

a. said flexible top wall, spout member, torque member portions, retainer member, seal means and said securing means being molded as an integral structure from a resilient plastic resin.

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