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Reese

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[54] **CLOSURE FOR LIQUID CONTAINER**

[75] Inventor: **Stanley Reese,** Cincinnati, Ohio

[73] Assignee: **Dome Chemical Corporation,** Cincinnati, Ohio

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[52] **U.S. Cl.** **222/153;** 215/216; 222/570

[51] **Int. Cl.²** **B67B 5/00;** B67D 5/32

[58] **Field of Search** 215/216, 9; 222/153, 570, 222/182

[56] **References Cited**

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Primary Examiner—George T. Hall

Attorney, Agent, or Firm—James W. Pearce; Roy F. Schaeperklaus

[57] **ABSTRACT**

A locking closure for a liquid container. A hollow spout member is mounted on the container. The spout member includes a lower portion having outwardly extending ribs and an upper externally threaded portion. A cap member includes an upper portion threaded on the upper portion of the spout member, downwardly extending resilient strap portions and an annular stop portion supported on the strap portions. Radially inwardly directed ribs on the stop portion can engage the ribs of the spout member when in a normal position to lock the cap member against turning. The stop portion can be displaced from its normal position by an adult for freeing the rib means so that the cap member can be turned to release the cap member but cannot be displaced by a small child concurrently with turning of the cap member.

1 Claim, 9 Drawing Figures

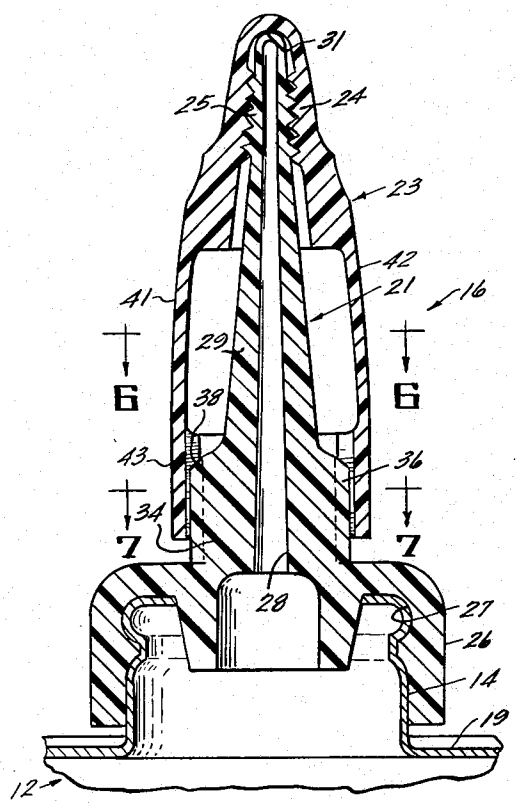


Fig 1

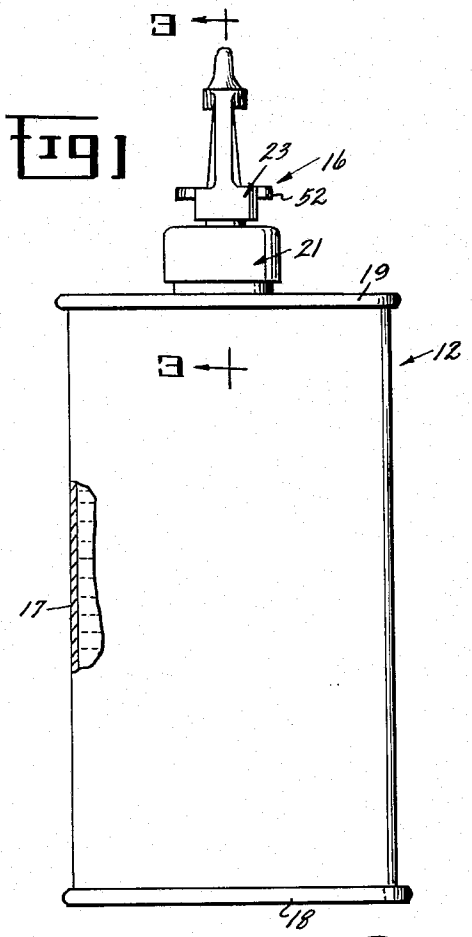


Fig 3

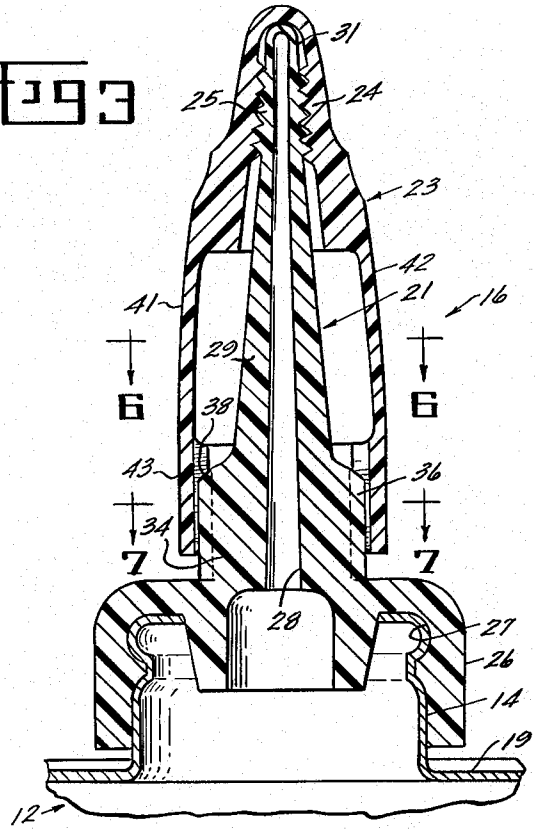


Fig 2

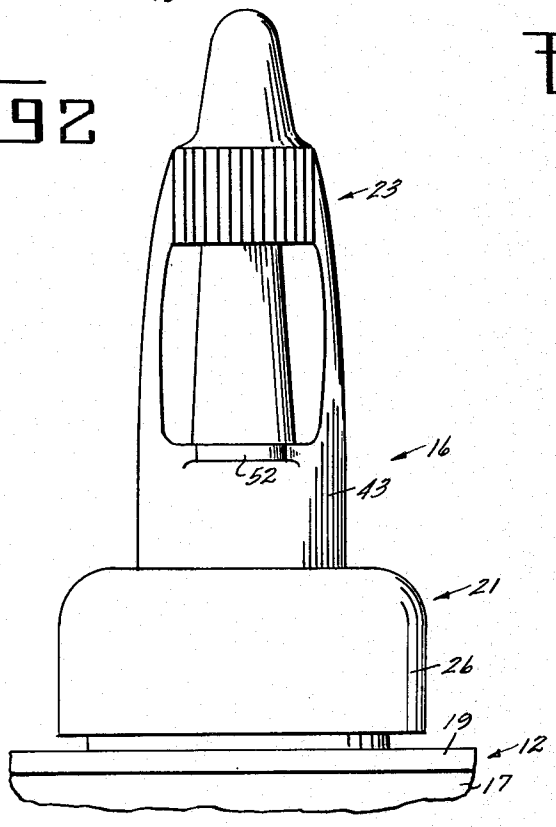


Fig 4

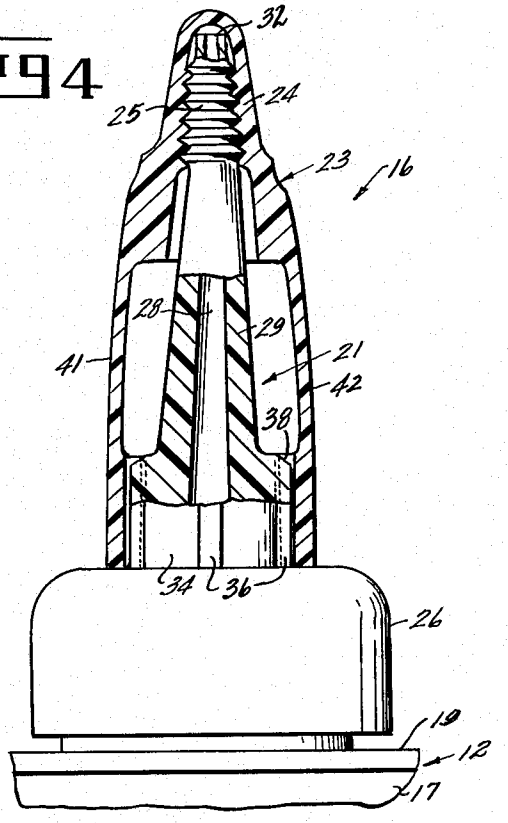


Fig 5

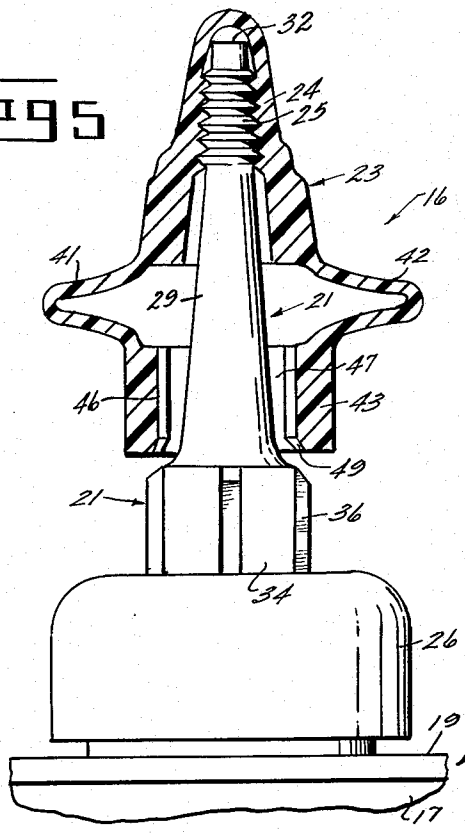


Fig 6

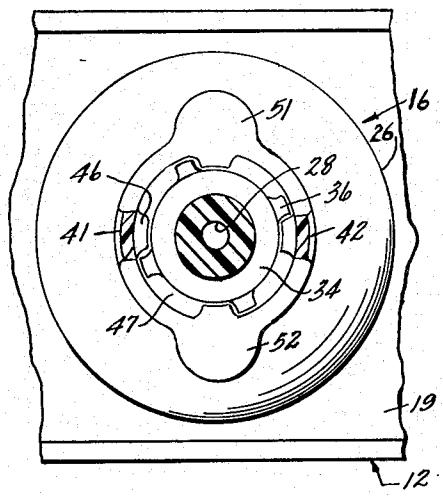
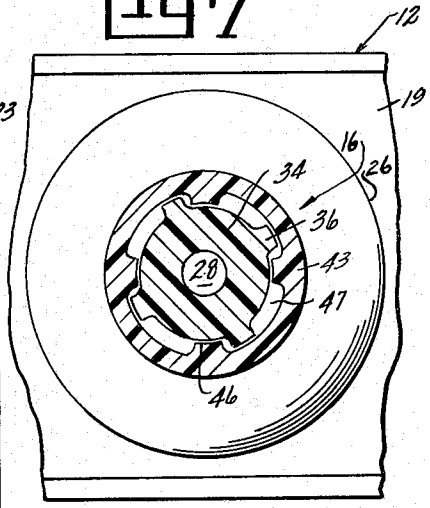


Fig 7



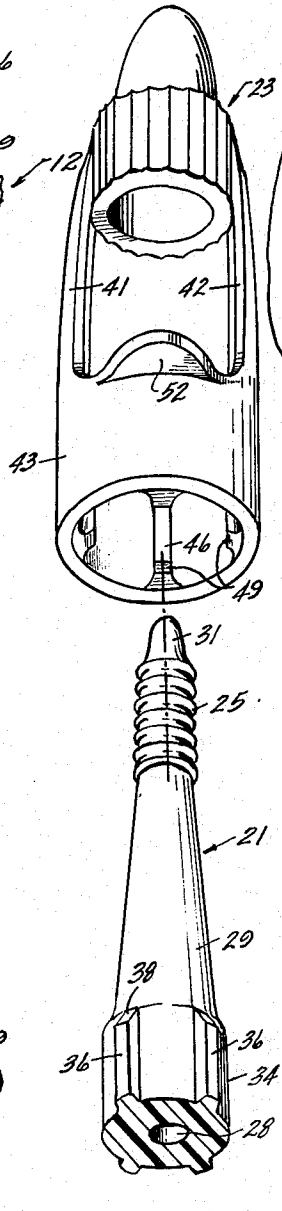


Fig 8

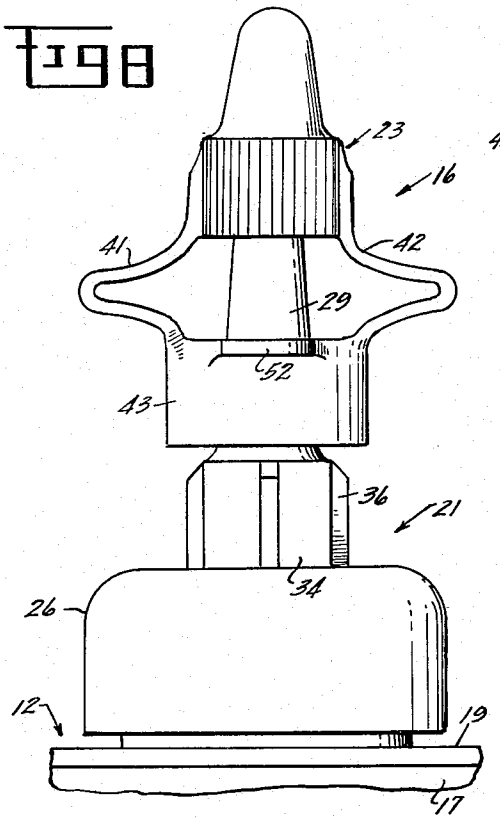


Fig 9

CLOSURE FOR LIQUID CONTAINER

This invention relates to a closure for a container.

An object of this invention is to provide a container which can be opened and closed readily by an adult but which resists opening by a young child.

A further object of this invention is to provide such a closure which requires a releasing action and a turning action to be performed concurrently to permit release of the closure.

Briefly, this invention provides a closure for a container for liquid such as lighter fluid which includes a spout member mounted on and in communication with the interior of the container. A cap member of the closure has a portion threaded on the spout member and arranged to close a spout of the spout member. The spout member includes outwardly extending ribs and the cap member includes an annular stop portion having inwardly extending ribs which can cooperate with the ribs of the spout to lock the cap against turning. The annular stop portion is connected to the threaded portion by resilient straps which normally urge the stop portion to locked position. An adult can readily urge the stop portion away from locked position to permit unscrewing of the cap but a child cannot cause release of the locking portion while concurrently unscrewing the cap.

The above and other objects and features of the invention will be apparent to those skilled in the art to which this invention pertains from the following detailed description and the drawings, in which:

FIG. **1** is a view in front elevation of a container of lighter fluid provided with a closure constructed in accordance with an embodiment of this invention, partly broken away and in section to show details of construction;

FIG. **2** is a view in side elevation of the closure of the container shown in FIG. **1**;

FIG. **3** is a view in section taken on the line **3—3** in FIG. **1** showing the closure with a spout thereof in shipping condition;

FIG. **4** is a view in section taken on the same line as FIG. **3** but showing the spout in dispensing condition;

FIG. **5** is a view in section taken on the same line as FIG. **3** but showing the closure with a lock portion thereof released;

FIG. **6** is a view in section taken on the line **6—6** in FIG. **3**;

FIG. **7** is a view in section taken on the line **7—7** in FIG. **3**;

FIG. **8** is a view in end elevation showing the closure with the lock portion released; and

FIG. **9** is an exploded fragmentary perspective view showing details of construction of a spout member and a cap member of the closure.

In the following detailed description and the drawings, like reference characters indicate like parts.

In FIG. **1** is shown a container **12** provided with an upstanding flange **14** (FIG. **3**) on which a closure assembly **16** constructed in accordance with an embodiment of this invention is mounted.

The container **12** can be of the usual construction used for liquids such as lighter fluid or the like and includes a side wall **17** (FIG. **1**), a bottom panel **18,** and a top panel **19** which are formed into a hollow body. The flange **14** is a part of the top panel **19,** as shown in FIG. **3.**

The closure assembly **16** includes a spout member **21** which is mounted on the flange **14,** and a cap member **23** having an upper portion **24** threaded on an upper portion **25** of the spout member **21.**

The spout member **21** includes a base portion **26** provided with an annular slot **27** in which the flange **14** is received in liquid tight relation therewith. An elongated channel **28** extends lengthwise of the spout member **21** and communicates with the interior of the container. An outer wall portion **29** of the channel **28** extends outwardly of the base portion **26.** The outer wall **29** is generally frusto-conic in shape. An outer end of the channel **28** above the threaded upper portion **25** is closed by a tip **31** during shipping of the container. The tip **31** can be cut off at an end edge **32** as shown in FIG. **4** so that during use the spout member **21** is tubular. Between the base portion **26** and the outer wall portion **29** is formed an annular locking portion **34** provided with radially outwardly extending ribs **36.** Upper ends of the ribs **36** are provided with downwardly and outwardly sloping bevel faces **38** as shown in FIG. **3.**

The cap member **23** is formed of resilient rubber-like material such as polyethylene plastic material and includes resilient strap portions **41** and **42** which extend downwardly from the upper portion **24** and support an annular stop portion **43.** The stop portion carries inwardly directed radial ribs **46** which extend into slots **47** (FIG. **7**) between the ribs **36** so that the ribs **36** and **46** cooperate to lock the cap member **23** on the spout member **21.** Lower end portions of the ribs **46** are provided with downwardly and outwardly extending bevel faces **49** as shown in FIG. **5.** The stop portion **43** also carries outwardly extending tabs **51** and **52** as shown in FIG. **6.** The tabs **51** and **52** can be grasped by the user of the container and can be advanced upwardly so that the cap member **23** assumes the condition shown in FIG. **5** at which the ribs **36** of the spout member **21** and the ribs **46** of the cap member **23** are released and the cap member **23** can be turned to release the cap member **23** from the spout member **21** permitting discharge of contents of the container **12** through the channel **28** in the spout member **21.** The cap member **23** can be held in the FIG. **5** configuration while it is screwed back on the spout member **21,** and resiliency of the strap portions **41** and **42** causes the cap member **23** to tend to return to the configuration of FIGS. **2–4.** If the ribs **46** of the cap member **23** are aligned with the ribs **36** of the spout member **21,** the bevel faces **49** and **38** abut and guide the stop portion **43** to centered position on the locking portion **34,** and any turning of the cap member **23** sufficient to release the ribs **36** from the ribs **46** will permit the cap member **23** to return to the FIG. **2** configuration at which the cap member **23** is locked on the spout member **24** and cannot be removed without the manipulation outlined above so that a child cannot effect removal of the cap member.

The closure structure described above and illustrated in the drawings is subject to structural modification without departing from the spirit and scope of the appended claims.

Having described my invention, what I claim as new and desire to secure by letters patent is:

1. A closure for a liquid container which comprises a hollow spout member including a lower portion mounted on and in communication with the interior of the container, an intermediate tubular portion, and an upper externally threaded portion, radially outwardly

extending rib means on the lower portion, a cap member including an upper portion threaded on the upper portion of the spout member, downwardly extending resilient strap portions, and an annular stop portion supported on the strap portions, and radially inwardly directed rib means on the stop portion, the rib means on the stop portion including a plurality of first rib members, each of said first rib members including a downwardly and outwardly sloping bevel face at a lower end thereof, the rib means on the lower portion of the spout member including a plurality of second rib members, each of said second rib members including a downwardly and outwardly sloping bevel face at an upper end thereof, the bevel faces being engageable to cause centering of the stop portion of the cap member on the lower portion of the spout member, the strap portions normally urging the stop portion to a position where the rib means are arranged to engage and lock the cap member on the spout member, the stop portion being displaceable from normal position for freeing the rib means.

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