

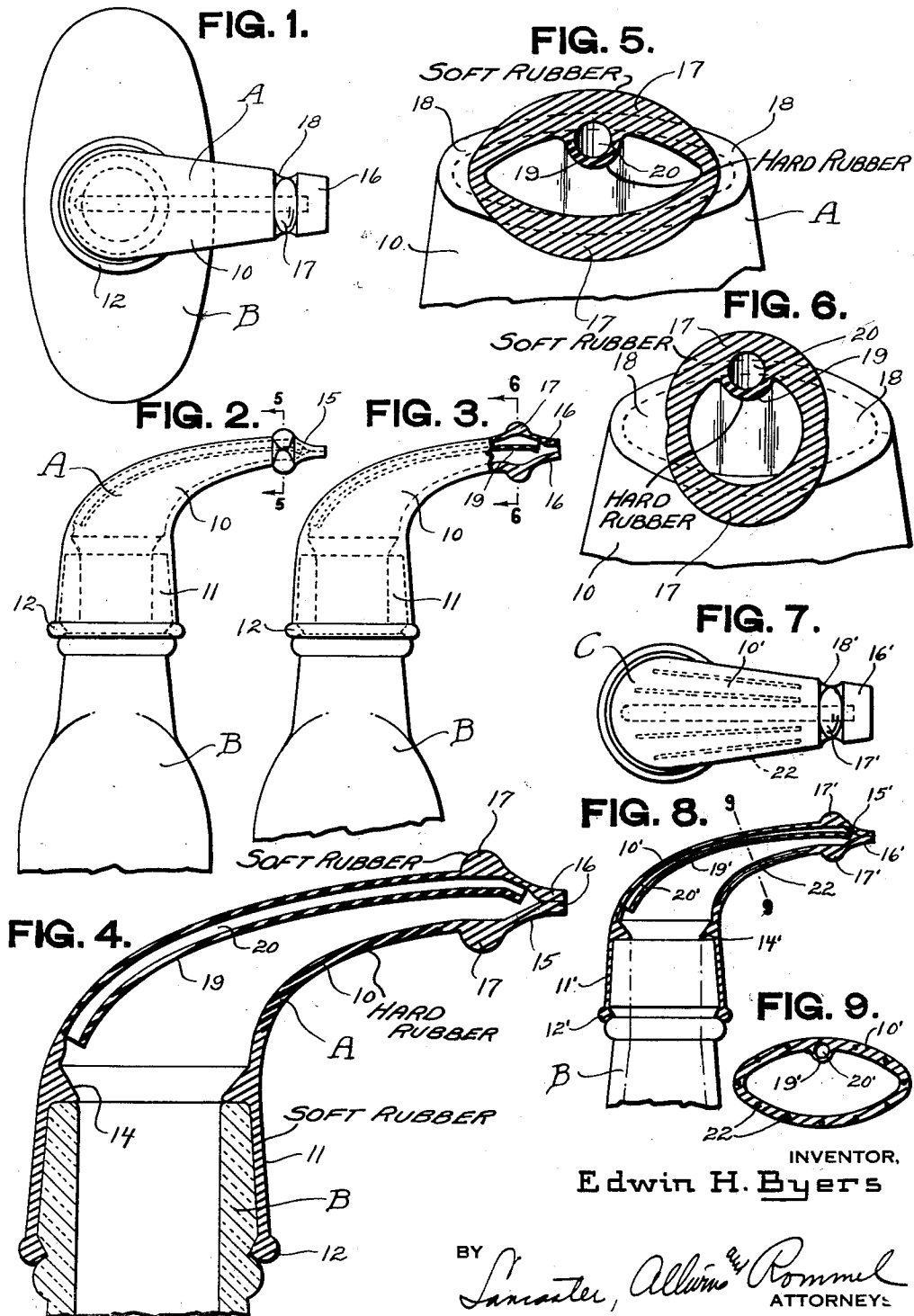
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DISPENSER CAP FOR CONTAINERS

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DISPENSER CAP FOR CONTAINERS

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The present invention relates to closures for liquid containers such as bottles and jars and the primary object of the invention is to provide a dispenser cap or closure for liquid containers which normally forms a closure for the container and is capable of being temporarily distorted at one portion so as to open a passageway and permit pouring all or any desired portion of the liquid contents of the container.

A further object of the invention is to provide a moulded, one piece dispenser cap for liquid containers, having a novel vent passageway arrangement whereby the container will be properly vented when a portion of the cap is distorted to open a passageway there thru.

A further object resides in the novel shape and construction of the dispenser cap whereby the cap will retain its general shape against collapsing when one end portion thereof is distorted to open a pouring passageway.

A further object is to provide a dispenser cap which may be readily applied and removed from a bottle or jar, and which may be easily opened by exerting a slight pressure upon opposite sides of the cap adjacent the discharge end of the cap.

Other objects and advantages of the invention will be apparent from the following detailed description taken in connection with the accompanying drawing, forming a part of this specification and in which drawing:—

Figure 1 is a top plan view of the cap or closure shown applied to a bottle.

Figure 2 is a side view of the cap attached to a bottle and in its normally closed condition.

Figure 3 is a view similar to Figure 2 but showing a fragmentary portion of the mouth or discharge end of the cap in section and opened.

Figure 4 is an enlarged longitudinal section thru the cap applied to a bottle.

Figure 5 is an enlarged transverse section on the line 5—5 of Figure 2.

Figure 6 is an enlarged transverse section on the line 6—6 of Figure 3.

Figure 7 is a top plan view showing a slightly modified form of closure cap.

Figure 8 is a longitudinal section thru the cap shown in Figure 7.

Figure 9 is an enlarged transverse section on the line 9—9 of Figure 8.

Referring to the drawing in detail and wherein like reference characters designate corresponding parts thruout the several views, the form of dispenser cap A disclosed in Figures 1 to 6 inclusive is preferably moulded in one piece from rubber and is substantially of L-shape in formation,

The dispenser cap A in the example illustrated is in the form of a spout designed for attachment to the neck of a bottle B, altho it is to be understood that the attaching end of the cap may vary slightly in shape and size to permit attachment of the cap to jars or any other liquid container to form a normally closed dispensing cap therefor. The cap A embodies a hollow arcuate-shaped intermediate or body portion 10 having walls of uniform thickness and being of a relatively hard rubber as indicated by the heavy section lines in Figure 4 whereby the intermediate portion 10 is sufficiently stiff so as to retain its shape against collapsing. This elongated body portion 10 preferably tapers towards its outer end, the inner or bottle attaching end of the body being of circular formation and gradually running into oval-shape at the outer or discharge end of the body.

Formed at the inner end of the body portion 10 is a tubular coupling or attaching portion 11 adapted to snugly engage over the neck of the bottle B and provided at its open end with a retaining bead or ring 12 adapted to engage in an annular external groove on the bottle neck to securely retain the cap against displacement. Provided in the coupling portion 11 at its point of juncture with the body portion 10, is an internal rest ring or stop flange 14 forming an abrupt shoulder which engages upon the end of the bottle neck and limits movement of the attaching portion over the bottle neck. The attaching portion 11 is of a relatively softer rubber than that of the intermediate body portion 10 so that the portion 11 may readily yield to permit attachment and removal of the dispenser cap from the bottle.

The outer oval-shaped end of the body portion 10 has formed thereon, a hollow oval-shaped head portion 15 formed of a relatively softer rubber than that of the body portion 10 whereby this head portion may be readily distorted to open a normally closed passageway there thru. This head portion 15 is formed with a companion pair of flat lips 16 which are normally held in close contact with one another providing a slit between the lips which may be opened by pressure exerted upon the head at opposite ends of the slit. The head portion 15 is provided at its inner end with a pair of stiffening ribs 17 which extend transversely of the head along the inner portion of each lip 16 and have their ends tapering off and terminating in shallow recesses 18 formed diametrically in the head portion. These recesses 18 provide gripping points for the thumb and forefinger whereby

when a pressure is exerted upon the head at the recesses 18, the ribs 17 will be spread apart at their intermediate portions as shown in Figure 6 and cause the flat lips 16 to spread apart and form an opening therebetween providing a passageway for escape of liquid from the bottle. Upon releasing pressure at the ends of the ribs 17, the lips 16 will automatically close upon one another as in Figure 4. The ribs 17 will not only provide a stiffening means for the head 15, but also serve to return and retain the lips 16 in closed engagement upon one another by normally exerting a pulling action upon the ends of the lips tending to lengthen the lips.

Extending along the longitudinally concaved inner side of the intermediate body portion 10 is a hollow venting rib 19 providing a vent passageway 20 for admitting air into the bottle while the liquid is being poured. This hollow venting rib 19 is open at both ends and has its inner open end terminating in slightly spaced relation above the stop flange 17 whereby the inner end of the vent passageway will not become closed when the cap is applied to a bottle for use. The outer open end of the venting rib 19 terminates just inwardly of the closure lips 16 whereby the cap is airtight when not in use. The venting rib 19 is of a relatively hard rubber similar to that of the intermediate cap portion 10 to prevent collapsing and closing of the vent passageway 20. The outer end portion of the venting rib, where it extends between the stiffening ribs 17, is preferably of the relatively harder rubber on its inner half as shown more clearly in Figures 5 and 6 so that this outer end portion of the venting rib will not be collapsed and close the vent passageway when the outer end of the cap is distorted for opening the lips 16.

Thus it will be seen that by having the intermediate body portion 10 of relatively hard rubber of a substantially rigid character, the cap is retained in proper shape and against collapsing, and by having the ends of the cap of a relatively softer rubber of a yieldable character, the end portion 11 may be readily and easily applied to a bottle, while the outer end or head portion 15 may be readily distorted to open the lips 16.

In the form of the invention disclosed in Figures 7, 8 and 9, the dispenser cap C is moulded from rubber of a flexible character and is also substantially L-shape in formation like that of the cap A. The cap C embodies a hollow arcuate-shaped intermediate or body portion 10' formed at its inner end with a tubular coupling or attaching portion 11' having the retaining bead or ring 12' and the internal stop flange 14'. The outer oval-shaped end of the body portion 10' is formed with the head 15' provided with the pair of flat lips 16' which normally contact one another to close the outer end of the cap. The head 15 is also provided with the transverse stiffening ribs 17' terminating at their ends in recesses 18'. A hollow venting rib 19', providing a vent passageway 20', extends along the longitudinal concaved inner side of the body 10' with its inner end terminating adjacent the stop flange 14' and its outer end terminating just inwardly of the lips 16'.

Embedded in the intermediate or body portion 10' and extending longitudinally thereof, is a suitable number of stiffening wires 22 which serve to retain the shape of the portion 10' and prevent ready collapsing thereof. These stiffening wires 22 have their ends terminating in

slightly spaced relation to the stop flange 14' and the stiffening ribs 17' whereby the end portions of the cap may readily yield for accomplishing their intended functions.

Thus, in both forms of the dispenser caps A and C there is provided an intermediate or body portion which is sufficiently stiff to function nicely as a cap of predetermined shape and provided at one end with a flexible portion for ready attachment to a bottle or jar and at its opposite end with a flexible head portion having lips which may be opened by distorting the head portion.

With a dispenser cap of the specific shape shown it will be seen that liquid when poured from the bottle will flow along the longitudinally concaved inner side of the cap and will not enter and prevent proper functioning of the vent passageway extended along the longitudinally concaved inner side of the cap.

Changes in details may be made to the forms of invention herein shown and described, without departing from the spirit of the invention or the scope of the following claims.

I claim:

1. A dispenser cap comprising a hollow substantially rigid body portion having an attaching portion at one end, and a yieldable head at the opposite end of the body portion embodying a pair of flat, normally contacting lips, and a narrow stiffening rib extending along the inner portion of each lip and having their ends tapering off into finger gripping recesses at diametrically opposite points on the head.

2. A dispenser cap for liquid containers, comprising a hollow body portion, an attaching portion at the inner end of the body portion, a head portion at the outer end of the body portion embodying a pair of flat, normally contacting lips and a rib extending along the inner portion of each lip and terminating at diametrically opposite points on the head, and a vent passageway in the body portion with its outer end terminating inwardly of said lips.

3. A dispenser cap for liquid containers, comprising an elongated hollow body portion, a tubular attaching portion at the inner end of the body portion having an internal stop flange, a yieldable head at the outer end of the body portion embodying a pair of normally contacting lips, and a hollow venting rib in the body portion providing a vent passageway having its inner end spaced from said stop flange and its outer end terminating in said head inwardly of the lips.

4. A dispenser cap for liquid containers, comprising a hollow arcuate-shaped body portion having an attaching portion at its inner end, a yieldable head at the outer end of the body portion embodying a pair of normally contacting lips closing the outer end of the head, and a venting rib extending along the longitudinally concaved inner side of the body portion with its outer end terminating in the head.

5. A dispenser cap for liquid containers, comprising a hollow arcuate-shaped body portion of circular shape at its inner end and running into oval-shape at its outer end, a tubular yieldable attaching portion at the inner end of the body portion, a yieldable head at the outer end of the body portion embodying a pair of normally contacting lips parallel with the major dimension of the outer end of the body portion, and a venting rib extending along the longitudinally concaved inner side of the body portion.

6. A dispenser cap for liquid containers, com-

prising a hollow, substantially rigid body portion, a yieldable attaching portion integral with the inner end of the body portion, a yieldable head integral with the outer end of the body portion
5 embodying a pair of normally contacting closure lips, and a venting rib in the body portion between the attaching portion and said head.

7. A dispenser cap for liquid containers, comprising a hollow intermediate portion of relatively hard rubber and inner and outer end portions of relatively softer rubber, said outer end
10 portion embodying a pair of normally contacting closure lips, and a venting rib of the harder rubber extending along the inner side of the intermediate portion between said end portions.
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8. A dispenser cap for liquid containers, comprising a hollow longitudinally arcuated body portion of relatively hard rubber, an attaching

portion of yieldable rubber integral with the inner end of the body portion, a head of yieldable rubber integral with the outer end of the body portion and embodying a pair of normally contacting lips, and a venting rib of hard rubber
5 extending along the longitudinally concaved inner side of the body portion.

9. A dispenser cap for liquid containers, comprising a hollow longitudinally arcuated body portion of yieldable material, stiffening wires embedded in the body portion, a yieldable attaching
10 portion at the inner end of the body portion, a yieldable head at the outer end of the body portion embodying a pair of normally closed lips, and a venting rib extending longitudinally in the
15 body portion and terminating inwardly of said lips.

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