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F. LOBL

2,499,150

BAG-TYPE CONTAINER AND CLOSURE THEREFOR

Filed Sept. 13, 1947

Fig. 1

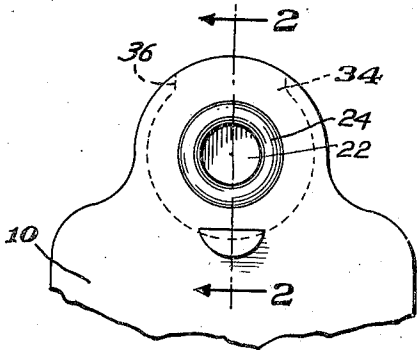


Fig. 2

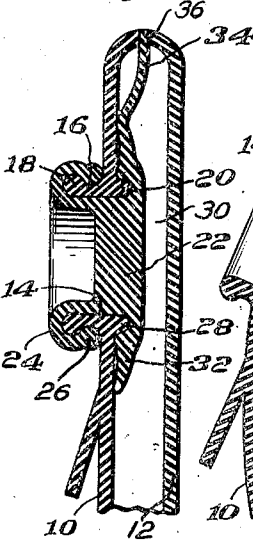


Fig. 3

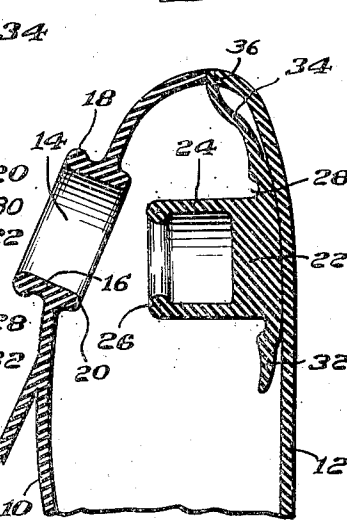


Fig. 6

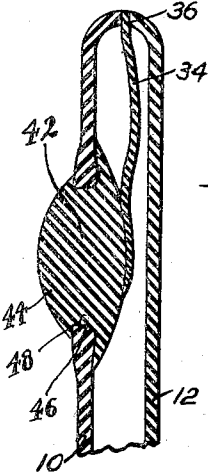


Fig. 4

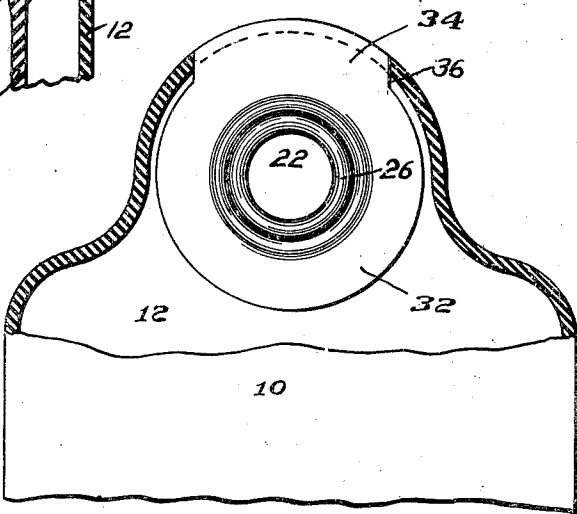
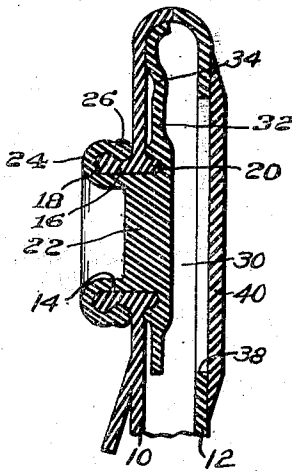


Fig. 5



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BAG-TYPE CONTAINER AND CLOSURE THEREFOR

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4 Claims. (Cl. 150—8)

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This invention relates to improvements in containers having oppositely disposed wall portions which are yieldable relatively toward and from each other and more particularly to improved means for sealing a mouth opening in a said wall portion of such a container, which may be a hot water bottle, for example, or an ice bag.

Containers of the general type to which the invention relates are disclosed in United States Letters Patent Nos. 2,171,730, 2,200,395, and 2,413,721, granted to me September 5, 1939, May 14, 1940, and January 7, 1947, respectively, over which my present invention provides improvements. In the said patented constructions Nos. 2,171,730 and 2,413,721, the closure element for sealing the mouth opening in one wall of the container is fixed on the opposite wall generally opposite the mouth opening, so that the closure element can be projected into the mouth opening to seal the opening, or preparatory to sealing of the opening by roll-back of a flexible annular portion of the closure means. Patent No. 2,200,395 discloses an exteriorly mounted plug for sealing a wall opening. In both of the said patented constructions Nos. 2,171,730 and 2,413,721, the fact that the closure means is fixed to the wall opposite the mouth opening permits of no appreciable relative spreading apart of the container walls at the region of the mouth when the mouth is sealed, and pressure of contents of the container, when the container is subjected to pressure, tends to spread the wall portions apart at the sealed mouth region and thereby tends to break the seal. While the seals in the patented constructions may be made secure against forces and stresses of ordinary and normal usage, an extreme and abnormal internal pressure of contents might be sufficient to actually spread apart the wall portions at the sealed mouth with consequent breaking of the seal.

It is an object of my present invention to provide a container of the mentioned general type wherein a closure means interiorly of the container may be projected outward to close and seal a mouth opening generally in the manner of the said patented constructions, but with interior pressures acting to augment the sealing rather than tending to break the seal. The closure means is on an intermediate member between the wall having the mouth opening and the rear wall opposite the mouth opening, being relatively loosely supported or arranged between the walls so that, when the closure means is sealed in the mouth opening, contents of the container can flow between the intermediate member and the rear wall of the container, with such interior pressure as there may be acting to hold the closure means in the mouth opening.

Another object is to provide a sealable container closure of the mentioned general descrip-

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tion having a flanged mouth opening in a wall portion of the container and generally opposite another wall portion of the container, and a flap arranged between said wall portions with a plug thereon insertable in the mouth opening and sealable therein while leaving said wall portions free to spread relatively apart.

A further object is to provide a container having generally opposite wall portions relatively movable toward and from each other, of which one has a mouth opening therein, and having a plug-carrying flap swingably secured between the wall portions and movable to project its plug into the mouth opening independently of any movement of the other wall portion.

It is, moreover, my purpose and object generally to improve the structure and efficiency of containers having self-contained closure means for their mouth openings.

In the accompanying drawing:

Fig. 1 is a front elevation of the upper portion of a hot water bottle embodying features of my present invention;

Fig. 2 is a cross-sectional view on line 2—2 of Fig. 1 on a larger scale;

Fig. 3 is a view similar to Fig. 2 but showing the mouth open;

Fig. 4 is a view similar to Fig. 1, on a larger scale, but with the front wall broken away;

Fig. 5 is a view similar to Fig. 2 but showing a modified form of the invention; and

Fig. 6 is a view generally similar to Fig. 2 but showing a modified form of plug closure.

Referring to the drawing, the walls 10, 12 of the illustrated hot water bottle may be of rubber or other suitable flexible material with the mouth 14 opening through the wall 10 near one end of the bottle.

The mouth 14, as shown, is surrounded by the exteriorly projecting flange 16 which, preferably, has its interior surfaces tapering slightly and has a beaded lip 18. An annular rib or bead 20 extends around the mouth 14 interiorly of wall 10 for a purpose which presently will appear.

The closure plug 22 is arranged within the bottle and is adapted to be projected outwardly into the mouth opening 14, it preferably having slightly tapering exterior surfaces for nicely fitting the interior surfaces of the mouth, and having an annular tubular extension 24 of flexible stretchable material which projects outward beyond the lip 18 of mouth 14 when the plug is seated in the mouth. The outer end of tubular extension 24 preferably is beaded as at 26, and the extension is adapted to be rolled backward over the lip 18 to effectively seal the mouth opening exteriorly of the bottle and to draw the plug tightly into the mouth with a consequent tight seating of the interior rib or bead 20 in an annular groove 28 around the base of plug 22,

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thereby to effect an interior seal around the mouth. This sealing coaction between a closure plug and the walls of a mouth opening is disclosed in my said Patent No. 2,413,721, and variations in the manner of effecting the seal or seals may be made as illustrated and described in my two said prior patents.

According to the present invention, the closure plug 22 is loosely mounted between the walls 10, 12 so that it may be projected into mouth opening 14 while leaving the wall 12 free to spread away from the closure plug thereby to provide free interior space at 30 between the plug and wall 12. This ensures that any interior pressure of contents of the bottle will act on plug 22 in a direction tending to hold it seated in mouth 14 rather than tending to break the seal and withdraw the plug.

As herein illustrated, the closure plug 22 is on a member 32 which may be a disk of rubber or the like having a flap 34 thereon by means of which the disk 32 may be suspended between the walls 10, 12 for relatively free swinging movement toward and from wall 10, thereby to move the plug 22 into and out of the mouth opening 14.

In the form of the invention shown in Figs. 1-4, a relatively long slit or slot 36 may be provided along the top edge of the bottle through which the member 32 and its plug 22 may be inserted, and the edge portion of flap 34 of member 32 is clamped between the walls of the slit or slot and the surfaces vulcanized or cemented together, to close the slit or slot 36 and to anchor the flap with the member 32 and plug 22 loosely suspended within the bottle.

Fig. 5 shows a modified form wherein a relatively large opening 38 is provided in wall 12, generally opposite mouth 14, and the member 32 with its plug 22 may be inserted through the opening 38 and the flap 34 be cemented or vulcanized interiorly of the upper edge portion of the bottle, after which the opening 38 may be closed by the cover piece 40 which may be cemented or vulcanized in place.

In the modified form of Fig. 6, the plug 42 is of a type generally similar to the plugs as disclosed in my said Patent No. 2,171,730, having the enlarged head portion 44 which is adapted to be forced through wall opening 46, the annular peripheral portion 48 of the head being resilient so that it can yield and ultimately snap to its illustrated seated position exteriorly of the bottle. It will be obvious that this form of plug requires no manual roll-back of a flange for the sealing, yet the seal is effective and secure with interior pressures tending to hold the plug in the wall opening as in the previously described forms.

It will be obvious from the foregoing description, in conjunction with the drawing, that I have provided definite and important improvements over the structures disclosed in my said prior patents, in that pressure of contents of a hot water bottle, or other comparable container, acts to preserve and augment the sealing rather than tending to break the seal and withdraw the plug from the mouth opening.

While I have shown the closure plug in suspended relation between the walls 10, 12, it should be understood that it may be otherwise held in operative position between the walls 10, 12 without departing from the scope of the invention as defined in the claims.

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I claim as my invention:

1. A container having two generally oppositely disposed wall portions movable relatively toward and from each other, one of said wall portions having a mouth opening therein, a member permanently supported between said wall portions and movable toward and from each of said wall portions, said member having a closure plug thereon for seating outwardly in said mouth opening of said one wall portion while the other wall portion continues free to spread relatively away from said member.

2. A container having two generally oppositely disposed wall portions movable relatively toward and from each other, one of said wall portions having a mouth opening therein, a flap member permanently mounted between said wall portions and swingable generally toward and from each of said wall portions, said flap member having a closure plug thereon movable with the flap member for closing and opening said mouth opening, means on the closure plug projecting exteriorly beyond said mouth when the mouth opening is closed, said means being manually operable exteriorly of the container for releasably securing the closure plug in the mouth opening of said one wall portion while the other wall portion continues free to spread relatively away from said flap member.

3. A container having two generally oppositely disposed wall portions converging together at an upper edge region of the container, one of said wall portions having a mouth opening therein, said edge region having an edge opening there-through, a closure-plug-carrying member adapted to be inserted through said opening to a position between said wall portions with its closure plug disposed generally opposite said mouth opening, said member having a flap thereon projecting into said edge opening, and means sealing said edge opening around the flap whereby said member and closure plug are movably suspended between said wall portions.

4. A container having two generally oppositely disposed wall portions movable relatively toward and from each other, one of said wall portions having a mouth opening therein, a disk substantially larger in diameter than said mouth opening arranged between said wall portions and having a closure plug thereon adapted to seat in said mouth opening, said disk having a flap thereon by which it is loosely suspended between said wall portions, whereby the closure plug may be seated in said mouth opening in said one wall portion with margin portions of said disk seated interiorly against an annular region of said one wall portion around the said mouth opening.

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The following references are of record in the file of this patent:

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2,413,721	Lobl	Jan. 7, 1947