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J. SHAPIRO

2,173,288

ICE AND THE LIKE BAG

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Fig. 1.

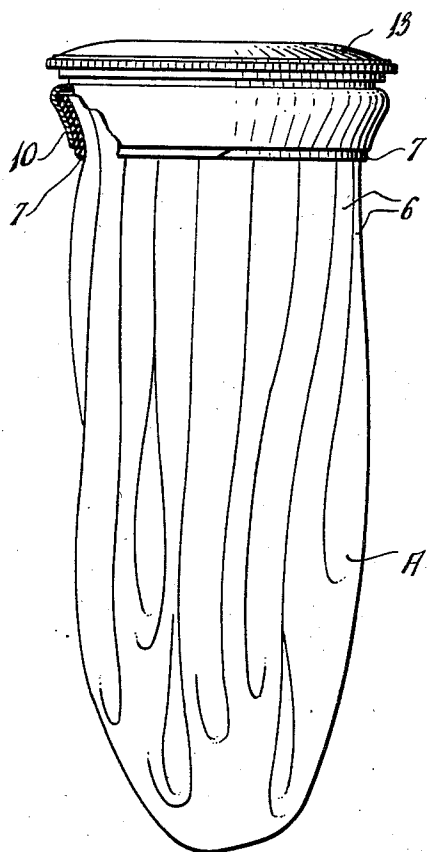


Fig. 4.

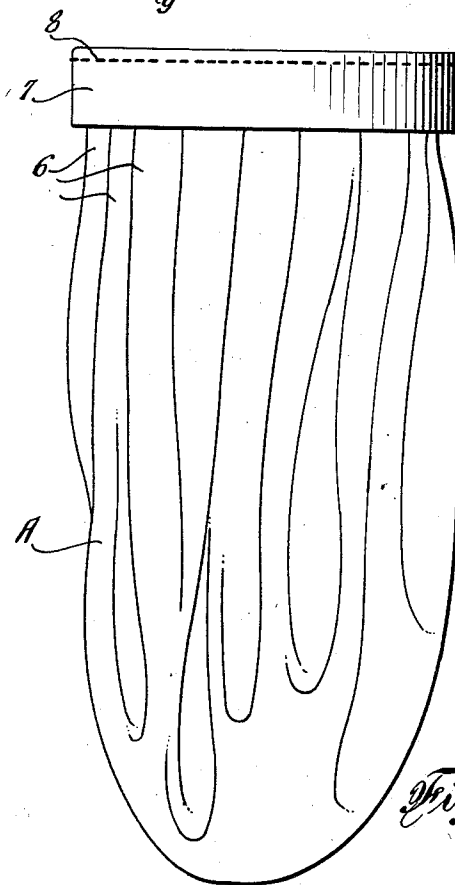
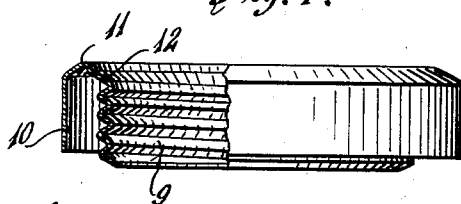


Fig. 2.

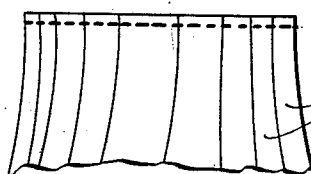


Fig. 3.

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ICE AND THE LIKE BAG

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1 Claim. (Cl. 150—8)

This invention relates to receptacles to contain ice or hot water and commonly termed ice or hot water bags to serve as a cold or hot compact wherein the body consists of a flexible and water-proof material adapted to be conformed to the object to which it is applied, with a rigid neck connected to the body having a relatively large mouth to readily fill ice or water there-through into the bag, the neck being arranged with screw threads for threaded connection thereto of a closure.

A body or bag of this character is formed from a sheet of water-proof material, such as rubber or water-proofed fabric, preferably of circular form. The marginal portion of the sheet is gathered upon itself in longitudinal pleats to shape the sheet to bag form and the pleated marginal portions constituting a substantially circular throat portion of the bag. To retain the sheet in bag form a rigid member of sheet material substantially of U shape in cross section is engaged upon the end of the pleated portion of the bag, the inner portion of the neck engaging within the throat and being arranged for screw threaded connection of a closure. The neck is secured upon the pleated throat of the bag by pressing the opposite wall portions of the neck together and clamping the pleated throat between the same, the outer wall portion of the neck pinching the pleats of the throat together. The pleats normally extend longitudinally of the bag and in use the pleats are extended, thereby expanding the bag laterally and providing the same with a substantially flat bottom. Due to the pinching of the pleats of the throat between the walls of the neck member as the neck member is clamped to the bag this expanding of the bag exerts a stress and strain on the material of the bag where it is pinched between the walls of the neck member that ruptures and tears the same rendering the bag useless for the purpose intended.

It is an object of the invention to overcome this disadvantage in bags of this character in securing the neck member to the body of the bag by applying a reinforcing member of flexible and yielding material about the pleated throat of the bag to which the neck member is clamped.

It is another object of the invention to provide a neck member for bags of this character of sufficient length whereby when it is applied to the body of the bag it may be grasped by the hand in applying or removing the closure therefrom and thus prevent force being applied to the bag that

will tend to rupture or tear the pleated throat at its connection with the neck member.

It is a further object of the invention to provide an improved arrangement of neck member that is used in bags of this character to provide the neck member with a seat for a closure and the closure constructed of flexible material whereby it will conform itself to its seat in the neck member as the closure is applied thereto and provide a water-tight seal.

In the drawing accompanying and forming a part of this application, Figure 1 is an elevational view of an ice or hot water bag partly in section and showing an embodiment of my invention applied thereto.

Figure 2 is a side elevation of an annular reinforcing member applied to the throat of the bag body.

Figure 3 is a side elevation of the upper or throat portion of the bag body to show the arrangement of pleating the sheet to form the bag throat.

Figure 4 is a side elevation, partly broken away, of the bag; and

Figure 5 is a side elevation of the bag body with the reinforcement member attached to the pleated throat thereof.

In carrying out the invention a sheet of flexible material, such as rubber or water-proof fabric, preferably of circular form, is folded or gathered upon itself in pleats at the marginal portions shaping the sheet to bag form, as shown at A, with the pleats forming a throat and constituting an inlet through which to fill ice or water into the bag, as shown at B in Figure 3, the pleating of the sheet arranging the bag of elongated form with the pleats extending longitudinally of the bag, as shown in Figures 1 and 5. The gathered pleated portion is secured in such condition by stitching, as shown in Figure 3.

To reinforce the pleated or throat portion of the bag there is provided an annular flat member 7, as shown in Figure 2, said member being engaged upon and disposed about the exterior of the pleated throat, as shown in Figure 5, and attached thereto to retain it in position on the throat and shown as stitched thereto adjacent the marginal edge portion of the pleated portion, as at 8. The reinforcing member is constructed of multiple plies of flexible and yielding material, and may comprise a material like that of which the bag is made, and consists of a sheet folded upon itself to arrange it of multiple ply and shaped to annular or circular form.

To arrange the bag with means for removably

connecting a closure in liquid-tight connection and close the throat of the bag there is provided an annular rigid neck member having an opening substantially equal in size to the opening in the pleated throat, and shown in Figure 4 as comprising a metallic member substantially of inverted U shape in cross section, the inner annular wall 9 of which is arranged to screw thread form and the outer annular wall 10 being flat and shown as of slightly less length than the inner wall and of less length than the width of the reinforcing member 7. The connecting portion of the annular walls of the neck member is arranged substantially of V shape, as shown at 11, the one portion thereof being of angular form in cross section to constitute a seat against which a correspondingly shaped flexible portion of a closure member arranged with an external screw threaded plug portion is adapted to seat to provide a liquid-tight joint between the closure and neck member. The neck member in the form shown in Figure 4 is engaged upon the reinforced pleated portion of the bag when the outer wall 10 is pressed inwardly toward the threaded inner wall clamping the reinforced pleated portion between said walls of the neck member, the edge portion of the outer wall terminating within the folded edge and engaging an intermediate portion of the reinforcing member, as shown in Figure 1, and clamping the interposed pleated portion to the rounded portions of the thread of the inner wall, the marginal edge portion of which extends inwardly away from the outer wall portion, as shown in Figure 4.

Bags of this character are adapted to be circumferentially enlarged to provide the bag with an enlarged flat bottom by expanding the pleated portion and thereby expanding the bag laterally. This expanding of the pleated portion exerts stresses and strains on the pleated portion clamped between the walls of the neck member and should the outer wall portion 10 of the neck member be clamped and pinched directly upon the pleated portions of the material of the bag said stresses rupture and tear the material rendering the bag useless. By arranging the bag with the reinforcing member 7 disposed about

the portion of the pleated throat and engaged by the neck member and making this reinforcing member of greater width than the length of the outer wall portion of the neck member the forces of said wall to clamp the neck member to the bag are applied to the material of the reinforcing member. Also, any stresses exerted on the connection of the pleated portion in expanding the same to expand the bag are taken up in the portion of the reinforcing member extending beyond the outer wall of the neck member, as shown in Figure 1, which will readily yield and whereby the force resisting the expanding of the pleats will not rupture or tear the material of the bag.

The annular wall portions 9, 10 of the neck member are of a length to provide an engaging surface to be gripped by the hand to facilitate the applying and removing of the closure without exerting a rupturing or tearing force upon the material of the bag at its connection with said neck member.

Having described my invention I claim:

A bag comprising a sheet of flexible water-proof material pleated upon itself at the marginal portion to shape the sheet to bag form with the pleated portion constituting the mouth of the bag, an annular reinforcing member of flexible material disposed at the mouth about the exterior of said pleated portion of the sheet, and a metallic neck member substantially of inverted U shape in cross section with approximately parallel legs and with the outer leg of less length than the inner leg and less than the width of the reinforcing member and the inner leg arranged with a rolled screw thread and the marginal edge portion deflected inwardly toward the axis of the neck member, said neck member engaged upon and embracing the edge and both sides of the marginal reinforced pleated portion at the mouth of the bag, and said neck member clamped in said position to said reinforced pleated portion at the mouth of the bag with the edge portion of the outer leg of said neck member engaging an intermediate portion of the reinforcing member.

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