April 1, 1930. M. B. REACH 1,752,808

CLOSURE FOR WATER BAGS

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Fig. 2

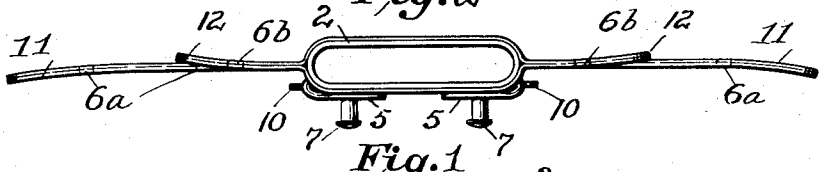


Fig. 1

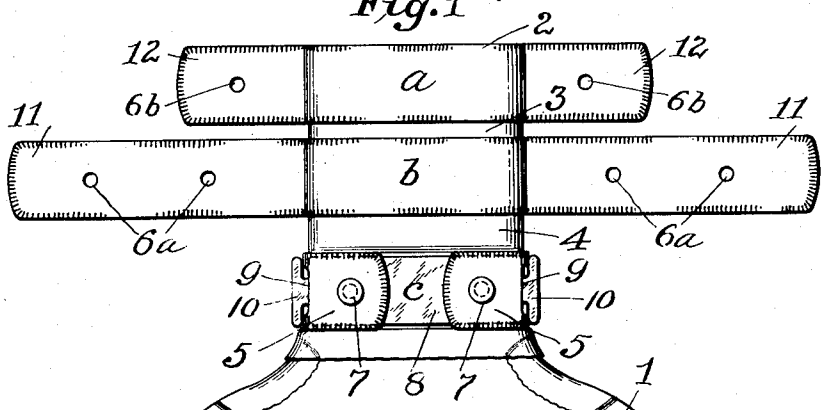


Fig. 5a.

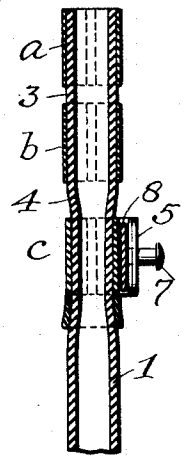
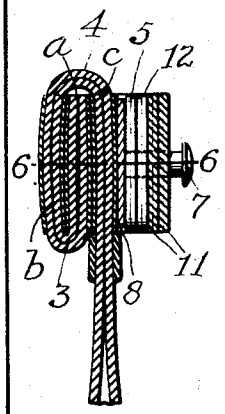


Fig. 5.



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Fig. 3.

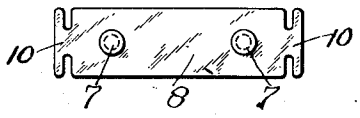


Fig. 4.

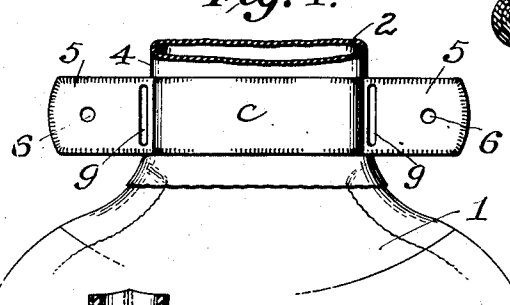


Fig. 6.

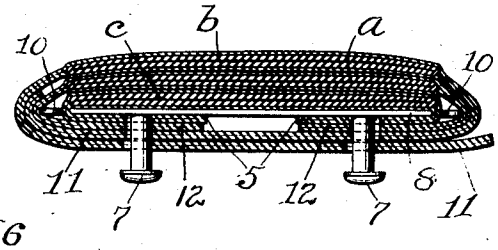


Fig. 7.

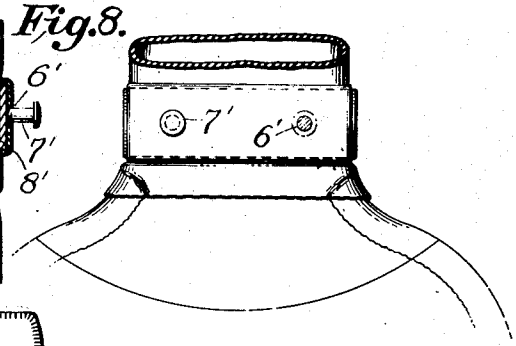


Fig. 12.

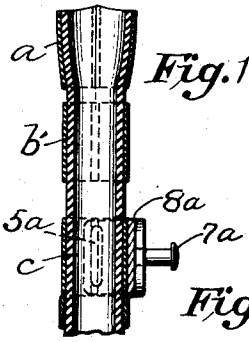


Fig. 8.



Fig. 10.

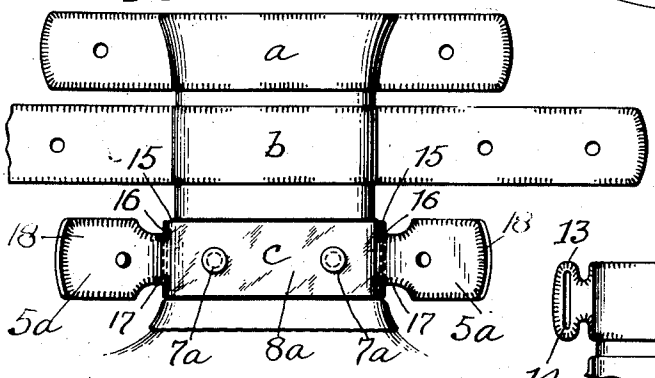


Fig. 9.

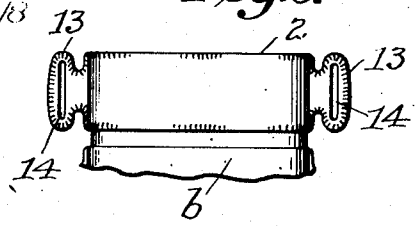
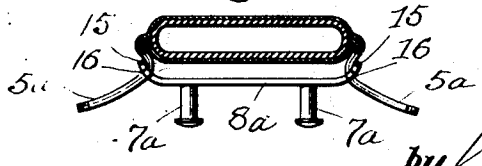


Fig. 11.



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UNITED STATES PATENT OFFICE

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CLOSURE FOR WATER BAGS

Application filed January 26, 1927. Serial No. 163,708.

This invention relates to a closure for a water or ice bag which is effected by constricting the neck of the bag by rolling or folding it over upon itself and holding it in rolled or folded condition by compressing the folds.

An object of the invention is to provide compressing means for the folds whereby they are constricted and drawn one against the other by tension applied at the ends thereof.

A further object of the invention is to provide separate elastic clamping tabs for each fold, the clamping tabs having a common fastening plate with which they cooperate to compress the folds by tension applied at the ends of the folds.

The invention consists in the features and the combination and arrangement of parts hereinafter described and particularly pointed out in the claims.

In the drawings:

Figure 1 is a front view showing the bag in open position.

Fig. 2 is a plan view of Fig. 1.

Fig. 3 is a view of the fastening plate.

Fig. 4 is a detail view showing the means for holding the plate to the neck.

Fig. 5 is a central vertical sectional view of the bag in closed position.

Fig. 5ª is a vertical section of the neck open.

Fig. 6 is a section on line 6—6 of Fig. 5.

Fig. 7 and Fig. 8 are views of a modification.

Fig. 9 is a view of a modified form.

Figs. 10 and 11 are views of a further modification.

Fig. 12 is a vertical sectional view of Fig. 10.

In the accompanying drawings the rubber water bag 1 is provided with an elongated flattened neck 2 of substantial width for receiving either ice or water. The thickness of the wall of the neck 2 varies in its longitudinal cross-section and is provided with thinned sections 3 and 4, to establish predetermined lines of folding and facilitate the folding of the neck. The thick portions are formed by vulcanizing cross bands of elastic material integral with the neck, the thinned portions being the wall of the neck between the thick portions. The thinned section 4 is of greater area than the thinned section 3. At the base of the neck 2 a pair of elastic tabs 5 of rubber are connected to opposite sides thereof at the edges of the flattened portions. The tabs are provided with openings 6 to engage buttons 7 on a metal plate or stiffening member 8 and the tabs are provided with openings 9 to cooperate with the key portions 10 on the ends of the plate 8.

The stiff plate 8 is adapted to be securely held in place against the neck at the base thereof by the tabs 5. In fastening the plate to the neck, it is placed against the wall thereof in line with the tabs 5 and the tabs are then each hooked over the key portions 10 through the openings 9 and are buttoned over the buttons 7 through the holes 6. The openings 6 and 9 in the elastic tabs are preferably so disposed with relation to the plate that it is necessary to stretch the tabs in order to fasten them to the plate, thus holding the plate securely under tension. Elasticity in the neck contributes to the forming of an effective watertight closure since the tension in the tabs stretches the neck and brings the walls of the neck forcibly together. With regard to opening and closing the neck, the plate is permanently held in place, there being no necessity of removing it. The removable function of the tabs 5 is incidental to the function of holding the plate permanently under tension.

A pair of long elastic rubber tabs 11 are secured to the neck at the thick portion between the thinned portions 3 and 4 and a pair of short elastic rubber tabs 11 are secured to the neck at the thick portion above the thinned portion 3. The tabs 11 are each provided with two holes 6ª as shown and the tabs 12 are each provided with one hole 6ᵇ.

To operate the closure for the bag the section *a* is folded backwardly about the thinned portion 3 and contacts with the rear face of section *b*. Section *b* and *a* folded against it are then folded backwardly about the thinned portion 4 until *a* contacts with section *c*, the mouth of the neck then being directed upwardly. The tabs 12 then being nearer the

plate 8 than tabs 11 are buttoned thereon, and thereafter the tabs 11 are successively buttoned over the buttons 7, one tab over the other. The closure is then complete, the folds *a*, *b*, and *c* of the neck being compressed together by the action of the elastic tabs which exert a tension thereon by reason of the tabs being so designed that they must be stretched into engagement with the buttons. Also, as before stated, the neck itself being elastic materially aids in forming the watertight closure by stretching under tension of the tabs, so that the walls of the folded neck are forced tightly together.

The modification shown in Figs. 7 and 8 shows a pocket receiving section of elastic material open at its ends and provided with button holes 6′ to receive the studs 7′ of the metal plate and hold the said plate 8′ in position at the base of the neck.

The compression of the folded neck by the elastic tabs and by its own elasticity effects a watertight closure.

The bag may be vary readily and economically manufactured, the entire bag and closure being molded simultaneously with one operation, the only assembly necessary being the securing of the metal strip stiffening member, which serves as the base or foundation against which the folds are drawn and compressed by the tension of the elastic tabs.

The tabs may be formed as extensions of cross bands vulcanized to the neck, these bands being spaced apart to leave the material of the neck proper uncovered as at 3, 4 to thus provide the predetermined lines of fold.

Instead of complete tabs being formed integral with the neck of the bag I may provide short extensions 13 Fig. 9 of the cross bands. These extensions have slots 14 and a removable elastic strap or belt may be threaded through these slots to answer as tabs, and these may be renewed. I have found, however, that the permanent tabs are durable and will endure as long as the life of the bag.

Figs. 10 and 11 show a further modification of the invention employing a plate 8^a curved at its ends as at 15 to conform to the neck of the bag. A slot 16 is provided in each of these curved ends 15 to receive the rubber tabs 5^a. The elastic tabs have narrow portions 17 which may pass freely through the slots 16 and wide portions 18 which are wider than the slots so as to limit the movement of the tabs therethrough. When it is desired to fill the bag with ice the tabs 5^a are unfastened from the metal plate and the plate is pulled away from the neck, the tabs slipping through its slots until stopped by the wide portions 18 of the tabs as shown in Fig. 11. This permits flexing of the neck wall to provide space for the passage of ice through the neck.

It will be noted (Fig. 6) that when the neck is in folded and closed position the tabs at the intermediate section *b* on being fastened on the buttons of the plate, transmit their compressing action also to upper section *a* which lies between sections *a* and *b*.

I claim:

1. A water bottle having an elongated neck of elastic material adapted to be folded over and over upon itself in one direction and means for applying tension to the elastic material of the neck for holding and compressing the folds in folded position, said tension means connected to and applying its force to the opposite edges of the neck and in opposite directions transverse to the axis of the neck.

2. A water bottle having an elongated flattened neck of elastic material adapted to be folded over and over upon itself in one direction and a tab at each of the opposite edges of the flattened neck for applying tension to the folded portion of said neck laterally thereof in opposite directions to make the walls contact in a watertight closure.

3. A water bag having an elongated flattened neck of elastic material, a stiffening member at one side of the neck near its base, said neck being adapted to be rolled over and over upon itself in one direction and upon one side of said stiffening member, and means attached to the opposite edges of the flattened neck for applying tension to the elastic walls of the said neck in opposite directions.

4. A water bag according to claim 3 in which the tension means consists of a tab extending from each of the opposite edges of the flattened neck and detachably secured to the stiffening member, substantially as described.

5. A water bag having an elongated neck of elastic material to be folded over upon itself, tabs protruding laterally from each folding section to stress the elastic material in opposite directions transverse to the axis of the neck and means adapted to cooperate with said tabs to hold the folds in position to effect a watertight closure.

6. A water bag having an elongated flattened neck of elastic material adapted to be folded over and over upon itself, said neck having a thick wall portion at the top thereof, a thick wall portion below that first mentioned, with a thin wall portion between the said thick portions, and a thin wall portion below said lowermost thick wall portion, substantially as described.

7. A water bag having an elongated flattened neck of substantial width comprising folding sections enabling it to be folded over and over upon itself, a stiffening plate having buttons, tabs secured to the opposite longitudinal edges of the neck at its base, said tabs having holes therein adapted to cooperate with the buttons to secure the plate against the neck, tabs secured to the opposite edges of each folding section and adapted when the

neck is folded to cooperate with the buttons on the plate to hold the neck in folded position under compression.

8. In combination in a water bag, tabs secured to the neck thereof, a stiffening plate held against one side of said neck by said tabs, said neck being foldable and means for holding the folded neck against said plate.

9. A water bag having a neck with a narrow thin wall portion near the top thereof and a wider thin wall portion nearer the base of the neck, said thin portions determining the lines of fold, a stiffening plate and means for holding the folded neck against said plate.

10. In combination in a water bag having an elongated neck, a stiffening plate held against one side of said neck, said neck being foldable upon itself in a direction away from said plate, and tab means secured to said neck and adapted to be secured to said plate at the side opposite to the folded neck, so as to hold the folded neck against the plate under compression.

11. A water bag having an elongated neck, a stiffening plate secured to the neck at the base thereof, means for securing said plate to the neck, said neck being adapted to be folded upon itself in a direction away from said plate, said plate having buttons extending away from said neck, and fastening means secured to the folds of the folded neck and extending around said plate into engagement with said buttons to compress the folded neck against the plate to effect a watertight closure.

12. A water bag having an elongated neck, a stiffening plate secured against one side of said neck at the base thereof, tabs secured to said neck, said tabs being connected to said plate at the ends of said plate, said plate having buttons thereon extending away from said neck, and said tabs having holes therein adapted to engage said buttons.

13. A water bag having an elongated neck, a stiffening plate adapted to be secured against one side of said neck at the base thereof, said plate having buttons extending away from said neck and having slots in the ends thereof, tabs secured to said neck and passing through the slots to provide a slip connection with the plate, said tabs having slip limiting enlargements at their ends and holes therein for removable engagement with the button on the plate.

14. A water bag having an elongated neck of elastic material in flat form adapted to be folded upon itself and means connected with the opposite edges of said neck for stressing said elastic material in opposite directions transverse to the axis of the neck to effect a water tight closure.

15. A water bag having an elongated neck of elastic material in flat form adapted to be folded over and over upon itself in one direction and means connected with the edges of said neck for stressing said elastic material laterally of the neck to effect a water tight closure, said means comprising tabs secured to the edges of said neck and adapted when the neck is folded to extend laterally around to the side of the base of the neck opposite to the folds and to be fastened at said side.

16. In combination in a water bag having an elongated neck of elastic material in flat form adapted to be folded over and over upon itself in one direction, a stiffening plate held against the side of the neck opposite to the folds, and tab means secured to the edges of said elastic neck and extending laterally therefrom around to the side of the neck opposite to the folds and against the said stiffening plate to stress the elastic material by applying tension thereto to effect a water tight closure.

17. A water bag according to claim 15 in which said tab means are of elastic material.

18. A water bag having an elongated neck of elastic material in flat form, comprising folding sections enabling it to be folded over and over upon itself in one direction, there being an upper terminal folding section, another folding section below the upper terminal section, and means connected to said other folding section at its opposite edges and adapted to apply tension laterally thereto for holding the neck in folded position.

19. A water bag having an elongated neck of elastic material in flat form comprising folding sections enabling it to be folded over and over upon itself in one direction, there being an upper terminal folding section, another folding section below the upper terminal section, and tab means connected to said other folding section at its opposite edges and adapted to apply tension laterally thereto for holding the neck in folded position.

20. A water bag having an elongated flattened neck of elastic material comprising folding sections enabling it to be folded over and over upon itself, there being a terminal folding section, an intermediate folding section and a base section, and means for holding the neck in folded position comprising means connected to the edges of the elastic neck and adapted to apply tension laterally thereto.

21. A water bottle according to claim 2 in which means are provided at the opposite edges of the flattened neck for removably securing the said tabs thereto.

In testimony whereof, I affix my signature.

MILTON B. REACH.