

Aug. 1, 1939.

M. B. REACH

2,168,239

WATER BOTTLE

Filed Feb. 21, 1936

3 Sheets-Sheet 1

Fig. 1.

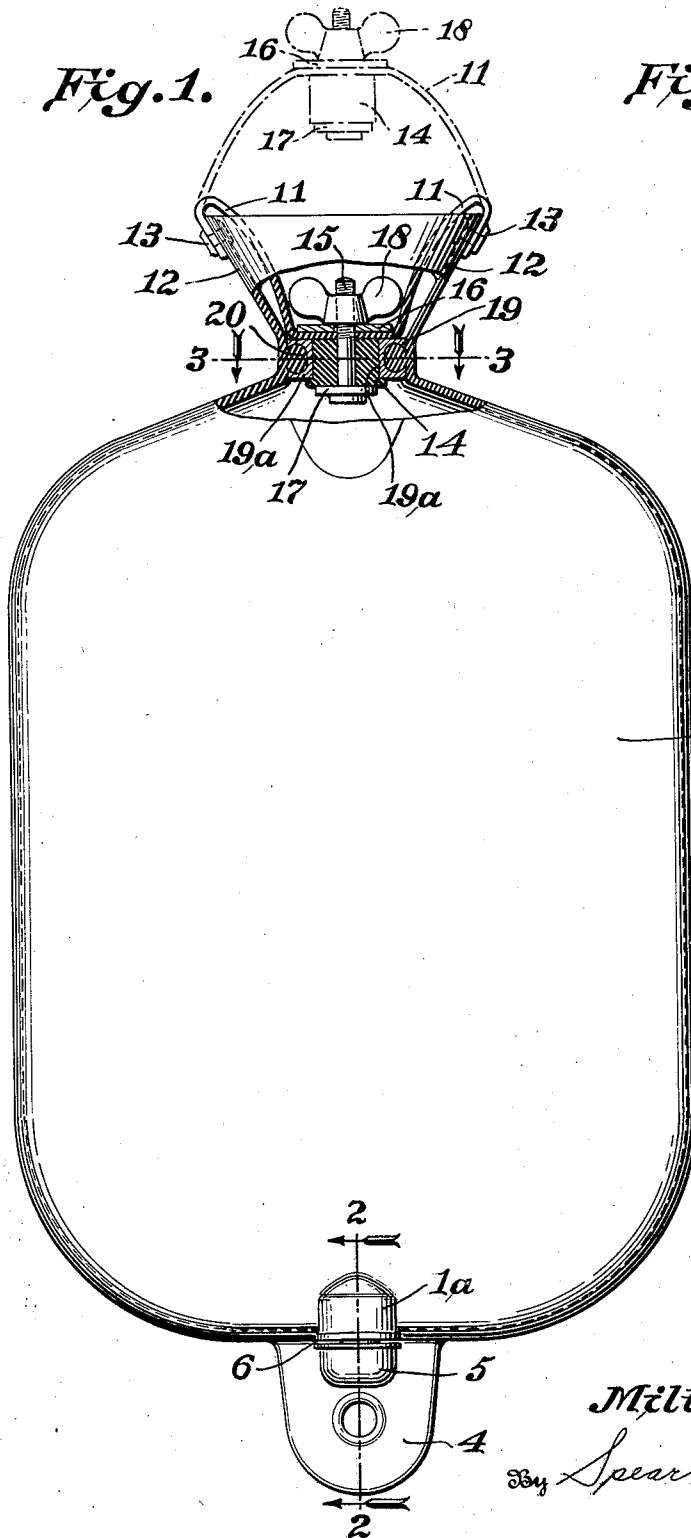


Fig. 1a.

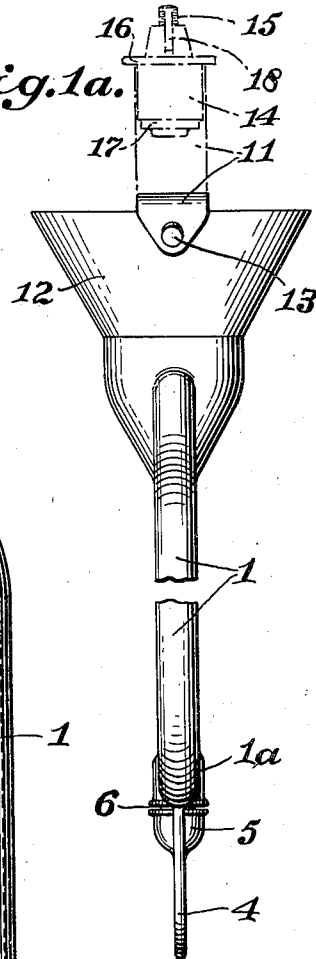
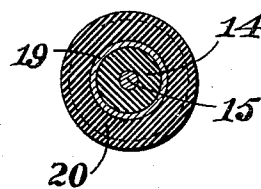


Fig. 3.



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Fig. 2. Fig. 2a. Fig. 5. Fig. 5a.

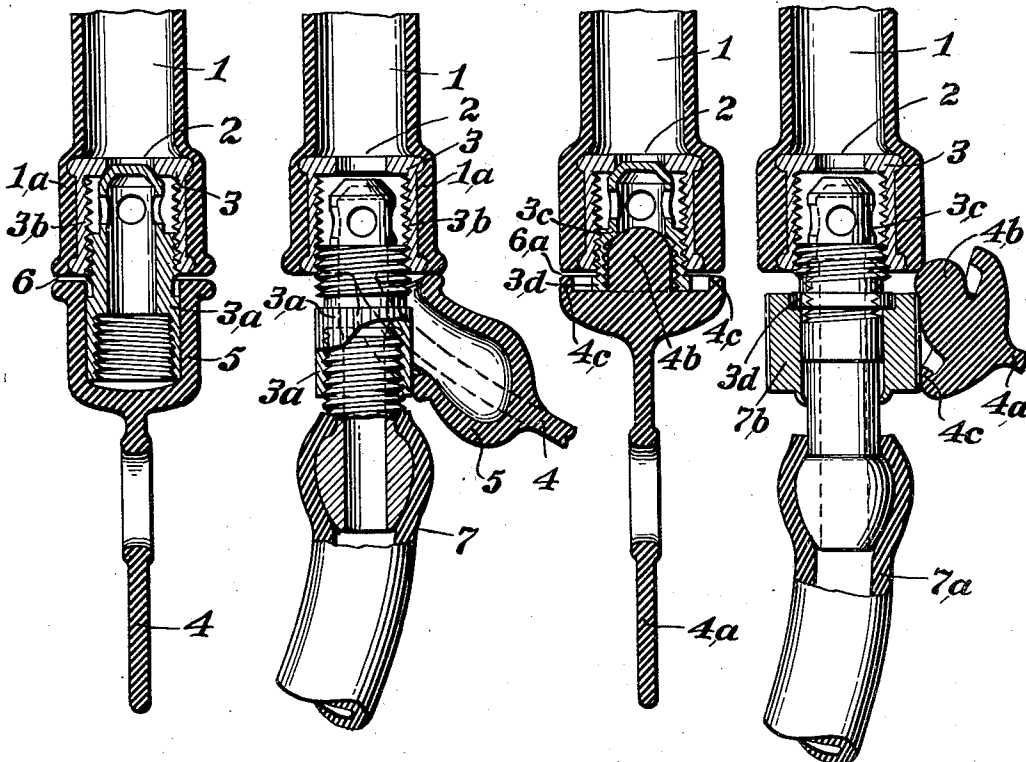
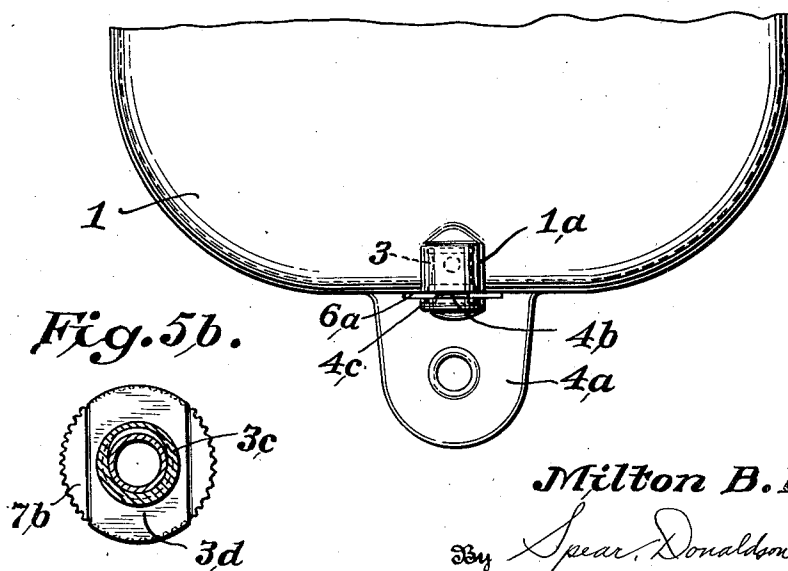


Fig. 4.



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Fig. 6.

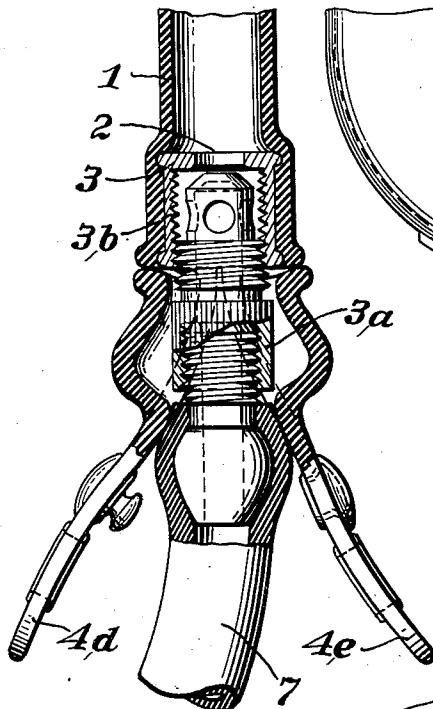


Fig. 7.

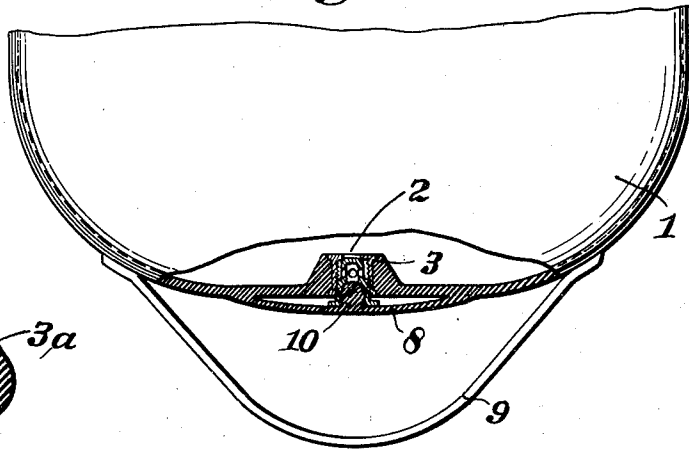


Fig. 7a.

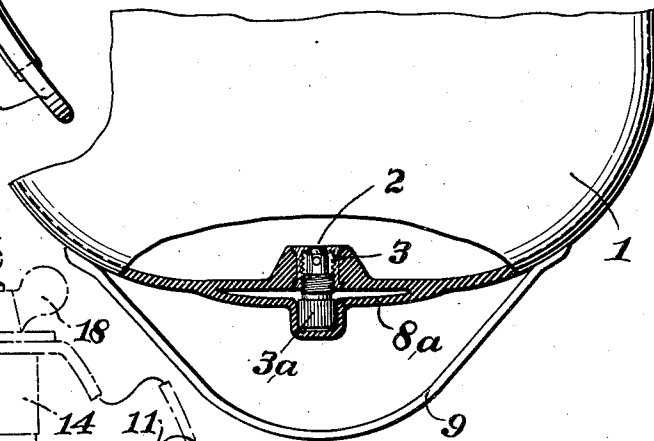
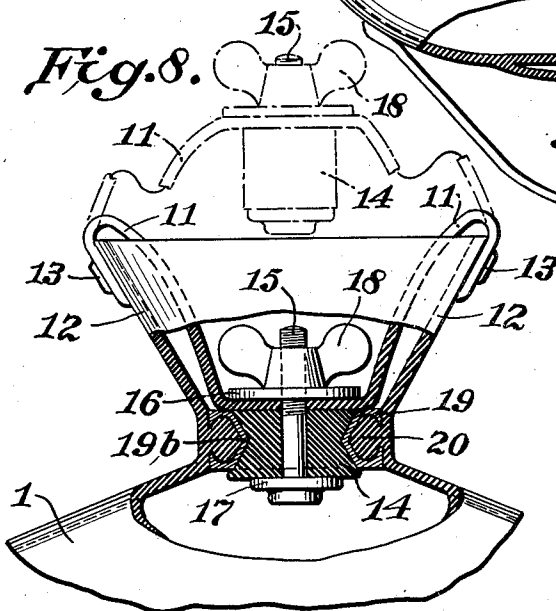


Fig. 8.



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UNITED STATES PATENT OFFICE

2,168,239

WATER BOTTLE

Milton B. Reach, Springfield, Mass.

Application February 21, 1936, Serial No. 65,131

15 Claims. (Cl. 128—227)

My present invention relates to water bottles and more particularly to water bottle closure means and including means providing fountain syringe features in novel arrangement and relation to the water bottle. It may be stated that the combination form of syringe and water bottle now common consists of a hose attachment having a threaded connection with screws into the stopper end of the bottle. This form of combination is not wholly satisfactory, and in most cases an open end syringe is used in preference, because the combination above referred to creates a partial vacuum as the body of water descends, and the flow loses speed and force in consequence.

The invention provides syringe features in combination with other closure means for the water bottle readily enabling the use of the water bottle as such, without the use of the fountain syringe features, and enabling the use of the device as a fountain syringe efficiently and with cooperation between the elements thereof.

Other objects will appear hereinafter as to the various features, combination, and arrangement of parts comprising the invention as particularly pointed out in the claims.

In the drawings:

Fig. 1 is a view of a water bottle embodying features of the invention.

Fig. 1a is an edge view of the device of Fig. 1.

Fig. 2 is an enlarged sectional view on line 2—2 of Fig. 1.

Fig. 2a shows this construction connected for use.

Fig. 3 is a section on line 3—3 of Fig. 1.

Fig. 4 is a fragmentary view of a modification of the construction of the lower portion of the device.

Fig. 5 is an enlarged sectional view of the modified construction of Fig. 4.

Fig. 5a shows this construction and connection for use. Fig. 5b is a horizontal sectional view showing the nut and wrench.

Fig. 6 is a view of a further modification of the construction of the lower part of the device.

Figs. 7 and 7a are views of another modification of the lower part of the device.

Fig. 8 shows a preferred modified construction of opening at the top of the water bottle.

Referring to the drawings, 1 represents the body of the water bottle which is provided with a filling opening and closure means therefor, the preferred forms of which according to the present invention are shown in the drawings and will be hereinafter described.

The bottle is also provided, according to the invention, with another opening 2. This opening may serve as an outlet for the discharge of the contents of the bottle, in the use of the device as a fountain syringe or the like. The opening 2 is preferably provided in the lower part of the bottle and is provided with a screw valve 3 as shown.

The valve 3, as shown, may have a portion substantially depending from the body of the water bottle. The invention includes the provision of means to cover and protect the valve and to guard it against accidental turning.

One way of covering and protecting the valve, is to provide means associated with the usual tab 4 used for hanging the bottle, and formed in connection with the bottle for covering the valve.

Such valve protecting means, as shown in Figs. 1, 2 and 2a, may comprise a pouch 5, providing a recess or socket for receiving the depending portion of the valve, the pouch 5 being formed as a part of the tab 4, as in the molding of the tab and bottle. The depending or protruding portion 3a of the valve 3, may comprise a nozzle or connection, and constitutes a means for manually adjusting the valve by turning of the projecting portion 3a.

As shown in Fig. 2, when the valve 3 is not in use, it is embraced by the pouch and protected and retained in closed position by the pouch 5 which protects the valve against accidental turning.

The valve seat portion 3b is embraced and held by the walls of the bottle which are suitably formed for this purpose as indicated at 1a.

A slit or opening 6 is provided between the pouch 5 and the walls of the bottle embracing the valve at 1a, the slit 6 enabling the uncovering of the valve 3 by pulling the tab 4 and its pouch 5 to one side to assume the position shown in Fig. 2a, with the wall of the pouch 5 engaging the side of the valve part 3a.

The projecting portion 3a of the valve being uncovered as shown in Fig. 2a, may be readily manipulated to adjust the valve as desired, the valve in Fig. 2a being shown in an open position. The valve part 3a may be internally screw threaded to receive a threaded nipple of a connecting tube 7 for discharge of the contents of the water bottle therethrough in using the device as a fountain syringe or the like.

A modified construction is shown in Figs. 4, 5 and 5a, the valve in this instance being normally contained within the lower part of the bottle, the rotary valve part 3c having a nut 3d en-

gageable by a wrench 7b loosely carried by the hose or tube 7a which tube is screw connected as before into the rotary valve part 3c. The tab 4a is molded with a plug 4b which projects upwardly and fills and engages the valve socket to provide against accidental turning of the valve. Flange 4c is also provided, molded with the tab 4a and embraces the nut 3d, with space or slit 6a therebetween enabling the pulling aside of the tab and plug to the position shown in Fig. 5a and the attachment of the tube 7a.

Fig. 6 shows a further modified form of the construction of the lower part of the water bottle of the present invention in which the tab is formed in two parts 4d and 4e edgewise of the tab suitable fastening means such as a button or a snap fastener being provided to hold the tab parts or aprons in closed position enclosing the protruding valve portion 3a and engaging it to prevent accidental turning of the valve. This form of construction is particularly suitable for the type of valve having the protruding portion 3a.

Figs. 7 and 7a provide a modification of the construction of the lower part of the water bottle in respect to both types of valve shown.

As shown in Figs. 7 and 7a, a strap 8 is provided to serve as a guard for the valve and instead of the usual tab a bail 9 is provided for handling or for hanging purposes as when the bottle is not in use. In Fig. 7 the strap 8 which is molded at its ends with the bottom of the bottle, is provided with an upwardly extending rubber plug 10 to seat within the walls of the valve to prevent its turning. The rubber strap 8 with its plug 10 may be pulled outwardly and aside to expose the valve for use.

In Fig. 7a is shown a strap 8a shaped and adapted to receive and engage the protruding portion 3a of the type of valve shown, and to guard it against turning. The rubber strap 8a may readily be pulled outwardly and to one side to uncover the valve. The bail 9 may be of rubber or cord molded within the rubber of the bag.

Although any form of closure means or construction at the filling opening end of the bottle may be employed with the valve constructions described for the lower end of the bottle, according to the present invention, the filling opening end of the bottle is preferably constructed as shown in the drawings.

The closure for the water bottle consists of a band 11 of rubber or other material which is secured to the flaring walls 12 of the mouth of the bottle above the filling opening by any suitable means such as buttons 13 or the like. Molded integrally with the band 11 is a soft rubber plug or stopper 14, through which passes a bolt 15 with washers 16 and 17 and wing nut 18 which in operation squeezes the rubber so that it overflows the walls of the filling opening and effects a tight closure.

The walls of the filling opening comprise a channel shaped ring member 19. The channel member is preferably of the clinch type, the rubber wall of the bottle being molded with a bead construction 20 of a size such that when forced into the clincher channel it is held under compression. This avoids any costly assembly of the bottle because of cementing or moulding operations, the bottle being molded in one part, the stopper and plate assembled in another part and the two snapped together in a leak-proof union in the final assembly.

The walls 19a of the filling opening provided by the channel member are straight in the form shown in Fig. 1, but these may be shaped as shown at 19b in the enlarged view of Fig. 8 to provide an "hourglass" shape which will be assumed by the rubber plug under compression to form an effective sealing closure.

The rubber strap or bail 11 in the filling operation will swing sideways over the neck of the bottle and completely out of the way during the filling stage, while being adapted for use as a bail to hang the bottle in use as a fountain syringe.

Features relating to the stopper for the upper filling opening of the bottle have been made the subject in part of an application Serial No. 97,681, filed August 24, 1936.

It will be seen that the syringe connection is completely enclosed. This will prevent the metal of this connection, when it becomes hot from the contents of the bottle, from being contacted by the hand or by any part of the body to which the bottle may be applied.

What is claimed is:

1. A water bottle, syringe or the like having a hose attachment and a flexible tab at the lower end of the bottle, the connection for the hose being in intimate relationship with the said flexible tab at the bottom of the bottle, said flexible tab at its upper part having a slot or cut through part of its width to permit exposure of the hose connection by flexing the tab aside.
2. A water bottle, syringe or the like, having an opening therein, a manually adjustable valve in said opening, and a tab or appendage of soft flexible material connected to the body of the bottle at either side of said valve, the central portion of said tab being free from connection with said bottle and engaging said valve to guard it against accidental displacement.
3. A water bottle, syringe or the like, according to claim 14 in which the central portion of said soft flexible tab is provided with an enlarged portion for engagement with said valve.
4. A water bottle, syringe or the like, having a valve, means engaging said valve to hold it in position against accidental opening, and soft, flexible elastic connections of rubber or like material between said means and the body of the bottle elastically holding said means in position engaging said valve, said means being shiftable to a position off to one side of the axial line of the valve to permit access thereto.
5. A fountain syringe or the like comprising a container for liquid, a discharge valve member mounted in a part of said container manually adjustable to open or close a discharge opening of said container while maintaining its connection therewith, said valve member having a passage to communicate with said discharge opening when opened, and said valve member having means for attaching a discharge hose connection thereto in communication with said passage, and guard means of soft flexible material extending across said valve member for preventing its accidental operation, said flexible guard means having elastic connections with the body of the container enabling it to be moved aside from the valve member for exposing said valve for its operation and for the attaching of the hose connection thereto.
6. A fountain syringe or the like comprising a container for the liquid, a valve manually operable to open or close a discharge opening of said container, said valve having means for attaching a hose removably thereto, a guard normally

extending across the valve to prevent its accidental operation, elastic means connected to opposite sides of the guard and to the container to elastically permit the guard to be moved from its guarding position overlying the valve to a position to one side of the valve where it is retained by said elastic means pressed towards the axis of the valve and hose connection, said elastic means tending to return said guard to said normal position substantially as described.

7. A fountain syringe comprising a liquid container, a valve manually adjustable controlling a discharge opening from said container, a tab of soft resilient material connected to the container and having a central portion extending across and contacting said valve to guard it against accidental displacement, said soft flexible tab at the central portion thereof being separated from the adjacent superposed portion of the container by a cut or slot permitting said central portion to be disaligned with the valve by flexing and bending the tab aside to rest against the side of the valve or a part associated with the hose connection detachably connected with the valve, substantially as described.

8. A water bottle having means at its lower end for connecting a syringe hose thereto removably, and a flexible guard completely covering the said hose connecting means to prevent contact therewith of the body to which the bottle is applied, and elastic means connecting said flexible guard with the body of the bottle to allow said guard to be drawn aside from said hose connecting means, substantially as described.

9. A water bottle, syringe or the like according to claim 2 in which said valve engaging means is

of soft, flexible elastic material such as rubber or the like.

10. A water bottle, syringe or the like, according to claim 2 in which the bottle and said valve engaging means are of moldable material such as rubber or the like, said valve engaging means, elastic connections and bottle being integrally molded together.

11. A water bottle, syringe or the like, according to claim 2, in which said valve protrudes beyond the bottom line of the walls of the bottle and said valve engaging means comprises a pouch of flexible material receiving the protruding part of the valve.

12. A water bottle, syringe or the like, according to claim 2, in which said valve is of hollow form, and is substantially contained within the walls of the bottle and said valve engaging means comprises a plug fitting into the valve.

13. A water bottle, syringe or the like, according to claim 2, in which the elastic connections carrying the said valve engaging means, are substantially of the form of the usual tab at the bottom of the container.

14. A water bottle, syringe or the like, according to claim 2, in which the said valve engaging means comprises two parts separable from each other and when closed together protecting the valve against accidental operation.

15. A fountain syringe according to claim 7 in which the valve is provided with means for making connection with a hose, said hose having a wrench loosely carried thereon adapted to engage a complementary surface on the valve to control the same.

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