

Nov. 5, 1957

C. J. HYATT
SYRINGE

2,811,968

Filed Jan. 19, 1956

2 Sheets-Sheet 1

Fig. 1

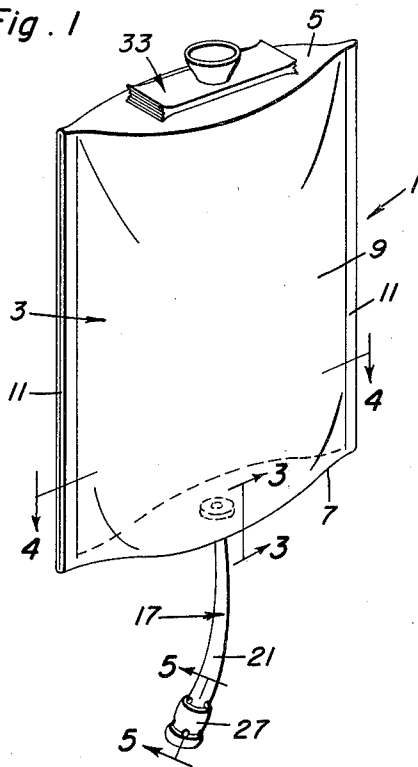


Fig. 2

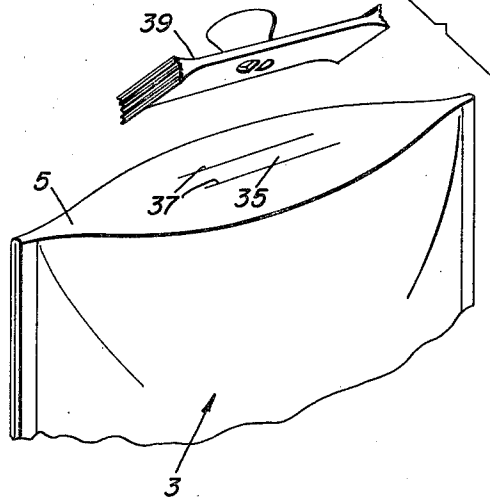


Fig. 5

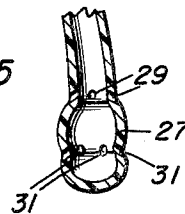


Fig. 3

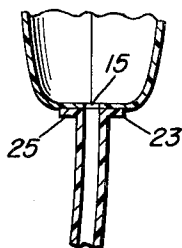
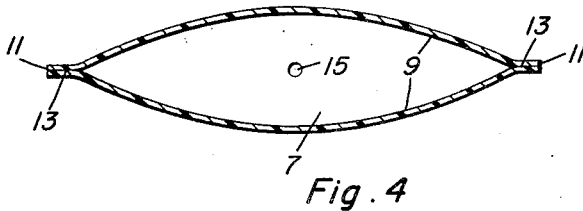
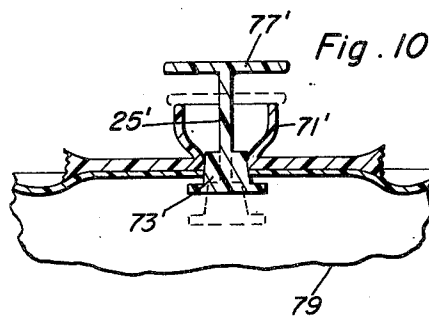


Fig. 10



Clarence J. Hyatt
INVENTOR.

BY *Clarence A. O'Brien*
and *Harvey B. Jacobson*
Attorneys

Nov. 5, 1957

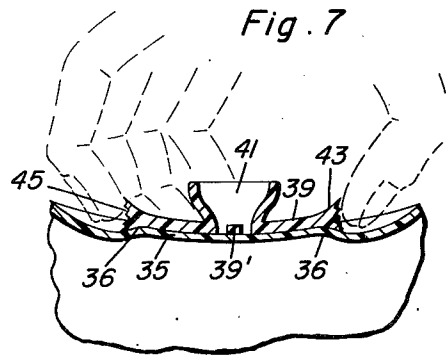
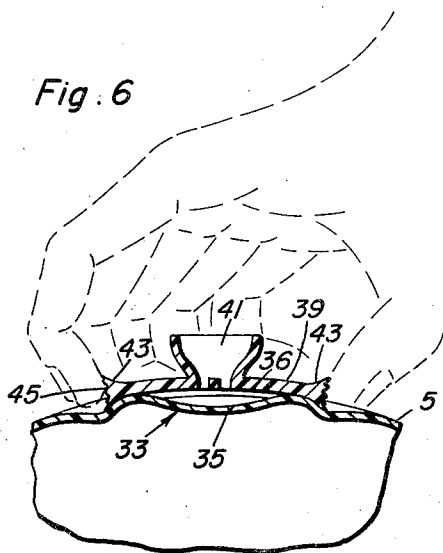
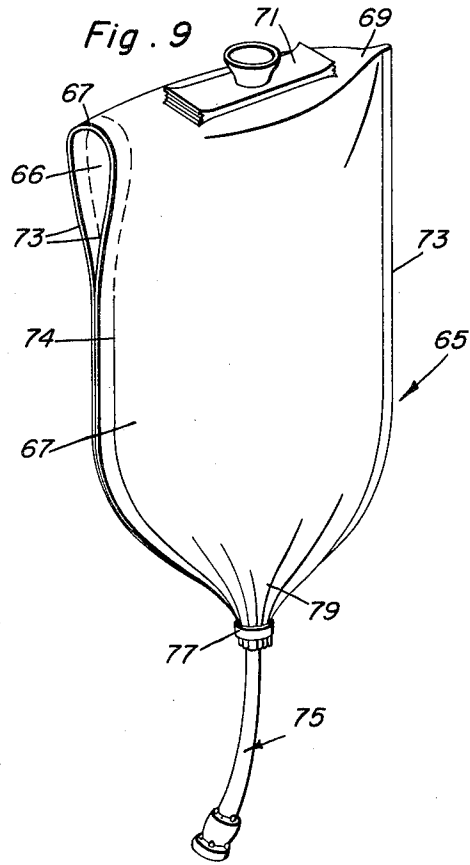
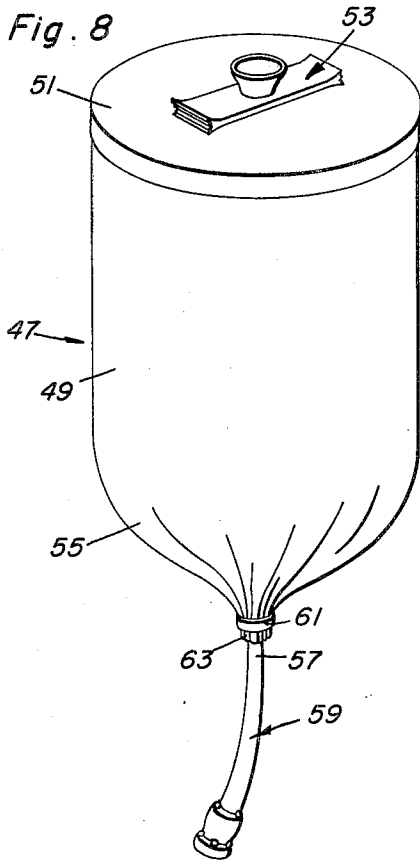
C. J. HYATT

2,811,968

SYRINGE

Filed Jan. 19, 1956

2 Sheets-Sheet 2



Clarence J. Hyatt
INVENTOR.

BY *Clarence A. O'Brien*
and *Harvey B. Jacobson*
Attorneys

1

2,811,968

SYRINGE

Clarence J. Hyatt, Redding, Calif.

Application January 19, 1956, Serial No. 560,193

4 Claims. (Cl. 128—225)

My invention relates to improvements in syringes for vaginal douche purposes.

The primary object of my invention is to provide an efficient syringe for the above purpose which is adapted to be so cheaply manufactured that it can be sold at a nominal cost, for instance, in vending machines in women's rest rooms, and discarded after use and whereby a necessary article of feminine hygiene can be rendered available at a minimum expense to women traveling or away from home.

Another object is to provide a syringe for the above purposes which embodies a liquid containing bladder which can be rolled up to force liquid out of a nozzle.

Another object is to provide the bladder with a novel combination measuring cup and filler valve for introducing a measured quantity of disinfectant or the like into the bladder and filling the bladder with liquid.

Still another object is to provide a highly efficient inexpensively constructed spray nozzle on the bladder which is preformed in the proper curvature and flexible for easy painless insertion into the vagina.

Other and subordinate objects together with the precise nature of my improvements will become readily apparent when the following description and claims are read with reference to the accompanying drawings in which:

Figure 1 is a view in perspective of my improved syringe in a preferred embodiment thereof;

Figure 2 is a fragmentary enlarged exploded view in perspective of the bladder and parts of the combination measuring cup and filler valve;

Figure 3 is an enlarged fragmentary view in vertical section taken on the line 3—3 of Figure 1;

Figure 4 is an enlarged view in transverse section of the bladder taken on the line 4—4 of Figure 1;

Figure 5 is an enlarged fragmentary view in longitudinal section of the nozzle taken on the line 5—5 of Figure 1;

Figure 6 is a fragmentary enlarged view in longitudinal section of the bladder and combination measuring cup and valve illustrating the manner in which the valve is held open for filling the bladder;

Figure 7 is an enlarged fragmentary view in longitudinal section of the combination measuring cup and valve illustrating the manner in which the valve is held closed;

Figure 8 is a view in perspective of a first modification of the syringe;

Figure 9 is a perspective view of a second modification of the syringe; and

Figure 10 is an enlarged view in longitudinal section of a third modification of the syringe.

Referring to the drawings by numerals, and first to Figures 1 to 5 and 6 and 7, according to the preferred embodiment of the invention my improved syringe designated generally by the numeral 1, comprises a substantially rectangular bladder 3 having upper and lower filler and discharge ends 5, 7, sides 9 formed in one piece and longitudinally sealed together edges 11. This bladder 3 is inexpensively constructed of a rectangular section of

2

flexible tubing with its ends closed by heat sealing as at 13 to form the edges 11. Preferably material such as polyethylene, or the like is utilized, which is light in weight, sufficiently strong to withstand pressure required in a syringe and flexible for folding or rolling up as desired.

At its lower end 7 the bladder is formed with a central discharge opening 15 communicating with a discharge nozzle 17. The nozzle 17 is formed of the same material as the bladder 3 and is molded in one piece in the form of a short tube 21 having a collar 23 on its inner end heat sealed, as at 25, to the lower end 7 of the bladder 3 concentrically of the opening. The tube 21 flares toward its outer end at which it terminates in an enlarged bulb 27 of hourglass shape provided at its base and at its restricted center with series of circumferentially spaced spray discharge openings 29, 31 staggered in the series relatively and inclining forwardly to direct spray forwardly. The tube 21 flares forwardly toward the bulb 27 and is curved as best shown in Figure 1.

The combination measuring cup and valve designated generally by the numeral 33 comprises an elongated valve flap 35 in the longitudinal center of the upper end 5 of the bladder 3 formed by slitting said end along two parallel lines 37, as indicated in Figure 2, so that the flap 35 is connected at both ends to the end 5. A flexible molded strip 39 of the same material as the bladder 3 extends longitudinally over the flap 35 and slits 37 and is heat sealed, at 36, to said end 5 around said flap, provided with a central measuring cup 41 integral therewith and open at its bottom with a bottom cross bar 39' preventing the flap 35 from bulging into said cup 41.

As best shown in Figure 7 the strip 39 is flexible to curve toward the top 5 of the bladder 3 and thereby draw the flap taut to seat against the strip 39 and close the bottom of the cup 41, whereas, as best shown in Figure 6 said strip 39 is flexible to curve away from said end 5 and thereby form a slack in said flap 35 to unseat the same for opening the bottom of the cup 41 and said strip 39 is flexible, as described by squeezing its ends together by hand. To facilitate flexing of the strip 35 said strip 35 is provided with thickened, enlarged concave, finger grip ends 43 serrated as at 45. As will be seen the flap 35 and strip 39 and cup 41 form a composite valve including an elongated flexible seat member bendable in opposite directions by pressure against its ends to seat and unseat a flap valve and thereby close and open the valve respectively.

Referring now to the operation of the described embodiment, the measuring cup 41 is first filled with deodorant or disinfectant while the valve flap 35 is seated to close the bottom of said cup as shown in Figure 7. The valve flap 35 is then unseated to open the bottom of the cup 41, or to open the valve as shown in Figure 6 and the bladder 3 filled with water while the nozzle 17 is pinched to close the same or closed by a tear-off wrapper not shown, applied when the syringe is prepared for sale. Then the nozzle 17 is inserted while open in the vagina and the bladder 3 squeezed or rolled upon itself to discharge the contents under pressure through said nozzle 17. If the pressure in the bladder 3 fails to maintain the valve flap 35 tightly seated it may be effectively seated by the described flexing of the strip 35 or valve seat. The bladder 3 may be refilled and the nozzle closed while refilling by twisting the bladder at the inner end of said nozzle.

According to the first modified embodiment shown in Figure 8, the bladder 47 is formed of a tubular section 49 of the same material as the bladder 3 with an upper end closure cap or flap 51, also of the same material, heat sealed to said section 47 and provided with the same combination measuring cup and valve 53 as in the preferred

3

embodiment. The lower end 55 of the section 49 is gathered around and heat sealed to the inner end 57 of the nozzle 59 with a binder band 61 around the gathers 63.

In the second modified embodiment shown in Figure 9 the bladder 65 is formed of a single rectangular sheet 66 of a flexible plastic folded upon itself at its transverse center as shown at 67 to form the upper filler end 69, the combination measuring cup and valve 71 being suitably fixed in the transverse center of the sheet to position it at said end. The opposite edges 73 of the sheet are heat sealed together as indicated at 74. The ends of the strip are then gathered around and heat sealed to the nozzle 75 with a binder band 77 around the gathers 79 as in the first modified embodiment and to form the discharge end of the bladder.

In the third modified embodiment shown in Figure 10 the measuring cup 71' is adapted to be closed by a tapered flanged stopper plug 73' on the lower end of a stem 25' extending upwardly through said cup and provided with a handle forming cross bar 77' on its upper end above and longer than the diameter of the cup 71 so that the stem 75' and plug 73' cannot fall into the bladder 79'.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A syringe comprising a bladder of flexible material having filler and discharge ends, a discharge nozzle extending from said discharge end and terminating in an enlarged spray discharge bulb, and a combination measur-

4

ing cup and filler valve on the filler end of said bladder, said combined measuring cup and filler valve comprising a flexible valve flap in said filler end, an elongated member on said filler end carrying an open bottom cup and flexible in opposite directions to flex said flap into and from closing relation to the bottom of said cup.

2. The combination of a syringe comprising a bladder of flexible material having filler and discharge ends, a discharge nozzle extending from said discharge end and terminating in an enlarged spray discharge bulb, and a combination measuring cup and filler valve on the filler end of said bladder, said combination measuring valve and filler cup comprising a strip member on said filler end carrying an open bottom cup, and a stopper plug for closing the bottom of the cup having a stem extending out of said cup and provided with a manipulating cross bar thereon outside said cup.

3. A syringe according to claim 1, said valve flap having ends attached to said filler end and being free between its attached ends.

4. A syringe according to claim 1, said elongated member being flexible by squeezing its ends together and having enlarged serrated finger grip ends.

References Cited in the file of this patent

UNITED STATES PATENTS

1,274,702	Fox	Aug. 6, 1918
2,168,239	Reach	Aug. 1, 1939
2,304,708	Ritter	Dec. 8, 1942
2,353,153	Ferrel	July 11, 1944
2,612,161	Manville	Sept. 30, 1952

FOREIGN PATENTS

781,494	France	Feb. 25, 1935
---------	--------	---------------