United States Patent [19]

Harris

[11] **3,818,910**

[45] **June 25, 1974**

[54] **DISPOSABLE SYRINGE**

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[22] Filed: **Oct. 25, 1973**

[21] Appl. No.: **409,512**

[52] **U.S. Cl.**..... **128/232,** 128/227, 128/DIG. 24

[51] **Int. Cl.**..... **A61m 1/00**

[58] **Field of Search** 128/232, 227, 224, 248, 128/DIG. 24

[56] **References Cited**

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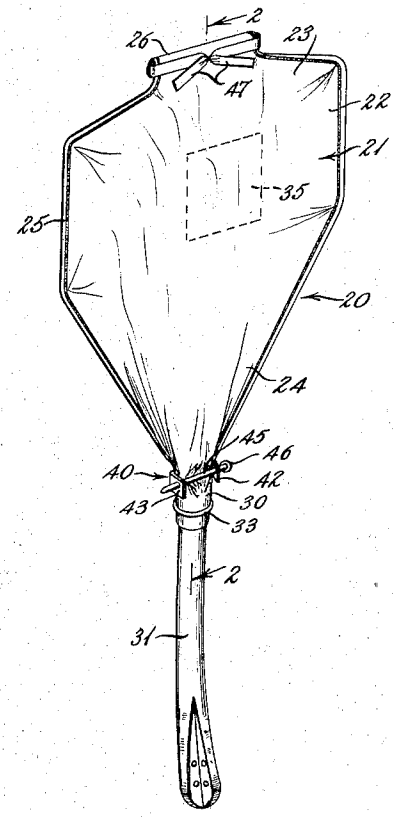
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Attorney, Agent, or Firm—A. Yates Dowell, Jr.

[57] **ABSTRACT**

Apparatus for use in feminine hygiene as a douche and including a disposable bladder having an inlet at one end and a discharge nozzle at the other end. The inlet has flexible structure for maintaining the inlet open when the bladder is being filled and for maintaining the inlet closed and sealed when the contents of the bladder are being discharged. Also, a valve is disposed at one end of the nozzle to prevent the discharge of fluid until desired.

4 Claims, 13 Drawing Figures



PATENTED JUN 25 1974

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SHEET 1 OF 2

FIG. 1

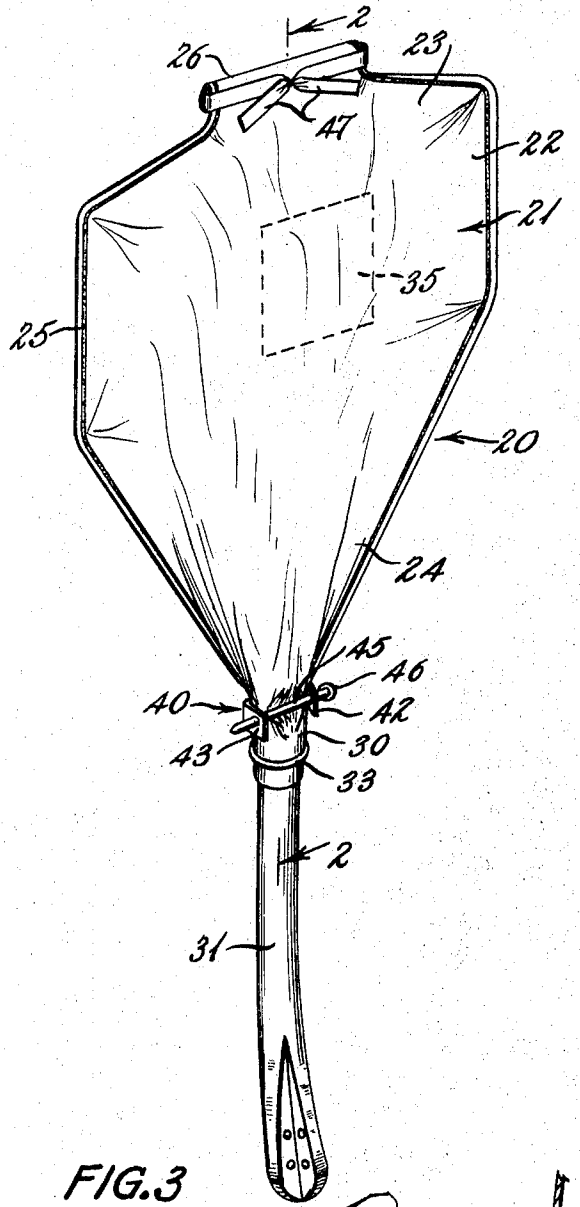


FIG. 2

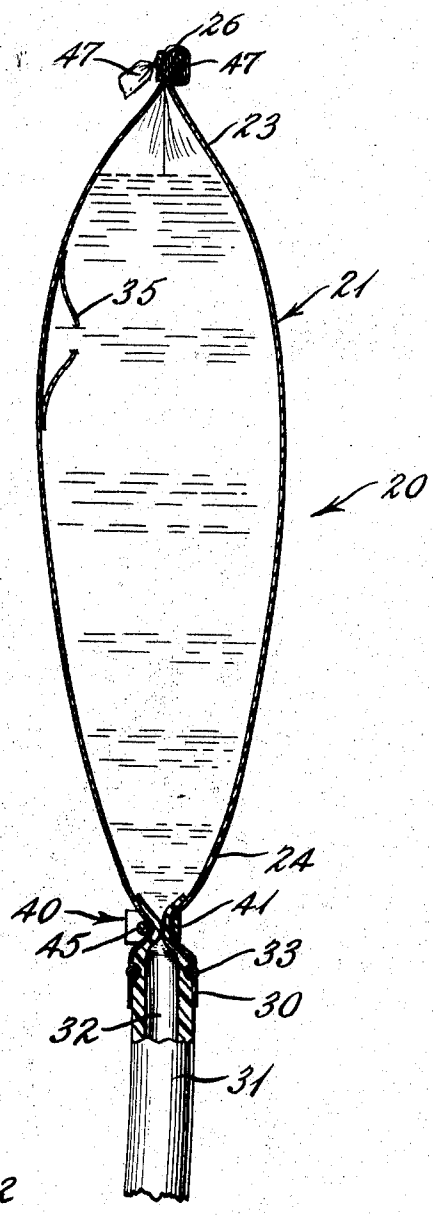
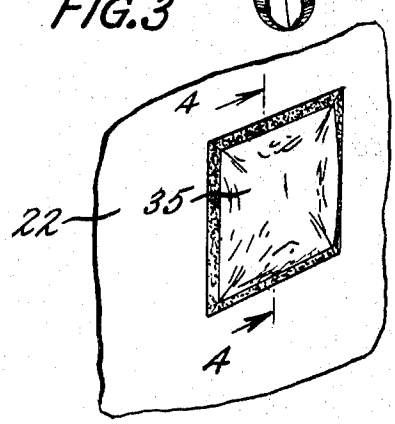


FIG. 3



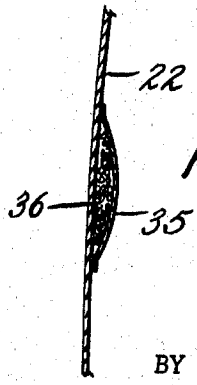


FIG. 4

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FIG. 5

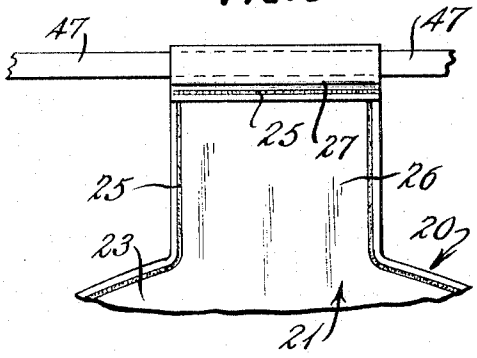


FIG. 6

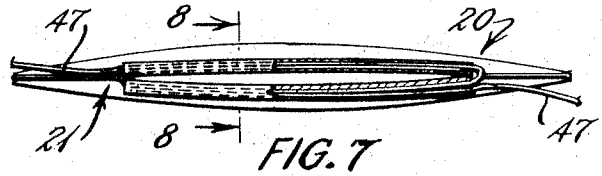


FIG. 7

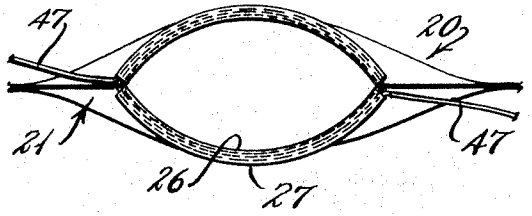


FIG. 8

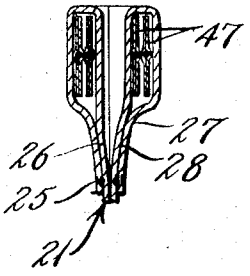


FIG. 9

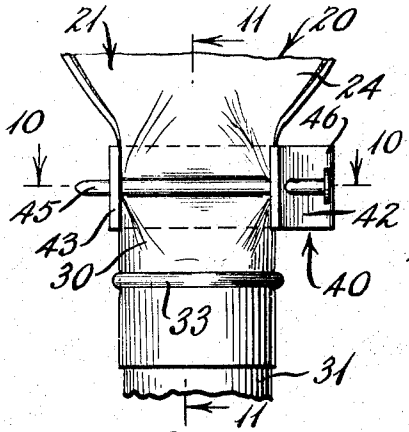


FIG. 10

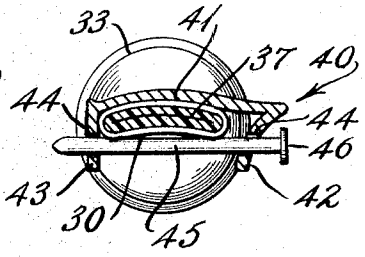


FIG. 11

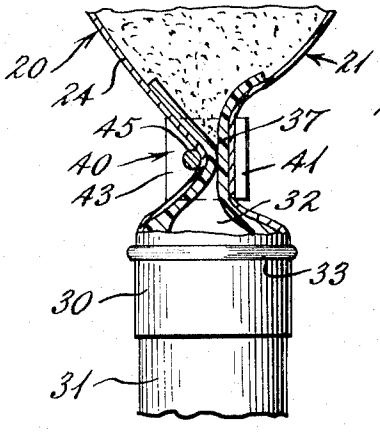


FIG. 12

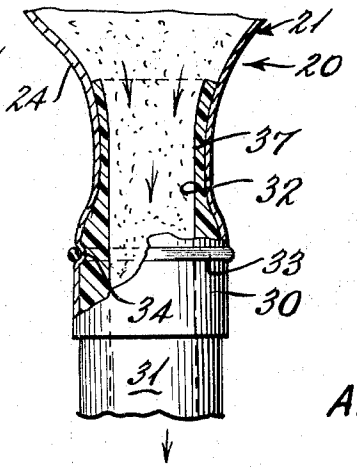
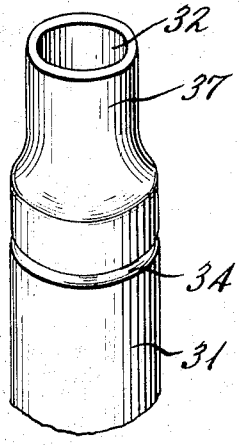


FIG. 13



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DISPOSABLE SYRINGE

BACKGROUND OF THE INVENTION

1. Field of the Invention

This application relates generally to liquid medicators of various kinds and more specifically to disposable vaginal douche bags of the syringe type.

2. Description of the Prior Art

Syringe type douche bags have been in general use for feminine hygiene for many years; however, most of these syringes have been of a semi-permanent nature which were reused time after time. These syringes necessarily have been of rugged construction to withstand repeated usage and consequently have been relatively expensive. Some efforts have been made to provide a douche syringe which is sufficiently economical that it could be discharged after a single use. However, these prior disposable syringes have not been satisfactory since they have been difficult to fill with liquid, have been difficult to seal after being filled, and have not provided simple valve means to prevent the discharge of liquid therefrom until desired. Some examples of prior art structures are the Patents to Kempel, No. 2,664,891, Hyatt, No. 2,811,968 and McKenna No. 3,057,352.

SUMMARY OF THE INVENTION

The present invention is a disposable syringe including a bladder having a discharge nozzle at one end and a filler neck at the other end around which elongated flexible material is provided to maintain the neck open while filling the bladder but which can be collapsed to secure the neck in closed sealing position. A portion of the elongated flexible material is attached to the filler neck and another portion remains unattached and extends away from the filler neck to provide a free end for use in sealing the filler neck in closed position.

It is an object of the invention to provide a disposable syringe including a bladder having a flexible open-ended neck at one end and a discharge nozzle at the other end and in which the flexible neck has elongated members mounted thereon in a manner to retain the neck in open position during filling but which can be collapsed to seal the open end when the bladder has been filled.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a perspective illustrating the disposable syringe.

FIG. **2** is an enlarged section on the line **2—2** of FIG. **1.**

FIG. **3** is a perspective illustrating a medicament pocket on the interior wall structure of the bladder.

FIG. **4** is a section on the line **4—4** of FIG. **3.**

FIG. **5** is a fragmentary side elevation of the filler neck.

FIG. **6** is an enlarged top plan view thereof.

FIG. **7** is a top plan view of the filler neck in open position.

FIG. **8** is an enlarged section on the line **8—8** of FIG. **6.**

FIG. **9** is a fragmentary side elevation of the joint between the bladder and the discharge nozzle.

FIG. **10** is a section on the line **10—10** of FIG. **9.**

FIG. **11** is a section on the line **11—11** of FIG. **9.**

FIG. **12** is a section similar to FIG. **11** with the clamp removed.

FIG. **13** is a perspective of one end of the discharge nozzle.

DESCRIPTION OF THE PREFERRED EMBODIMENT

With reference to the drawings, a syringe device **20** is provided having a flexible bag or bladder **21** which is relatively wide at the middle **22** and has relatively narrower upper and lower elongated end sections **23** and **24,** respectively. The bladder **21** is constructed of two sheets of flexible thermoplastic material such as acrylics, cellulose acetate, cellulose acetate butyrate, vinyl polymers and copolymers, polyethylene and the like which are heat sealed along side seams **25.**

At the upper end **23** of the bladder, the side seams converge to form an elongated filler neck **26** which is open at the top end for reception of liquid. The convergent side seams terminate below the end of the plastic sheet material thereby forming a pair of flaps **27.** Such flaps are folded over and attached along their bottom edges to the outside of the bladder in any desired manner, as by an adhesive **28** to form a rim or pocket around the top of the elongated neck **26.** The side edges of the flaps adjacent the side seams **25** are not joined to the bladder and thus the pocket formed by the flaps is open at opposite ends for a purpose to be described below.

At the elongated lower end section **24** of the bladder, the side seams converge to form an outlet sleeve **30** which receives the upper end of a tubular discharge nozzle **31** having a longitudinally extending passageway or bore **32** through which fluid in the syringe **20** may be discharged. The discharge nozzle **31** is constructed of any desired semi-flexible material and has relatively thick walls of sufficient rigidity to maintain the passageway **32** open when the nozzle is inserted into the human body or otherwise appropriately used.

The outlet sleeve **30** is secured to one end of the nozzle **31** by any suitable means, such as an elastic member **33,** which resiliently clamps a portion of the outlet sleeve into a transverse annular groove **34** formed in the outer surface of the nozzle adjacent to the upper end. Although generally the nozzle **31** is removably mounted within the outlet sleeve **30,** it is contemplated that in some cases the nozzle may be permanently fixed within the outlet sleeve by adhesive or other suitable means.

With reference to FIGS. **1, 3** and **4,** it may be desirable to add a medicament to the liquid within the bladder **21** and this can be done by mixing the medicine directly with the liquid either before or after the liquid is introduced into the bladder. However, to insure that a correct amount of medicament is added to the liquid, a container or pouch **35** having a prescribed quantity of medicament **36** is attached to the inner wall of the bladder **21.** The pouch **35** may be constructed of an easily rupturable material or it may be constructed of a gelatinous material which will dissolve in the presence of a liquid. When the liquid is introduced into the bladder the medicament is mixed with the liquid to provide a desired solution.

As illustrated best in FIGS. **2** and **9–13** the upper end of the nozzle **31** is provided with a portion **37** of reduced wall thickness, while the diameter of the passageway **32** remains substantially constant. Due to the reduced thickness, the portion **37** is substantially more flexible than the remainder of the nozzle **31** and is

adapted to be compressed so as to close the upper end of the passage **32.** In order to compress the reduced portion and to maintain the same in compressed condition, a clamp **40** is provided having a base **41** of generally rectangular configuration with upstanding ears **42** and **43** at opposite ends thereof. The ears **42** and **43** may extend outwardly substantially at right angles to the base **41,** or, as illustrated, the ear **42** may be curved or angled inwardly. Each of the ears has an opening **44** in which a pin **45** having a head **46** is received. Preferably, the pin is inserted through the ear **42** so that a portion of the head **46** engages such ear and the remainder of the head is spaced from the ear to provide for ready grasping of the head when the pin is to be removed.

As illustrated in FIGS. **9–11,** the base **41** is placed in engagement with the reduced portion **37** of the nozzle and the overlying portion of the outlet sleeve **30** of the bladder. Then the nozzle end portion is collapsed or compressed and the pin **45** is inserted through the openings **44** to retain the nozzle end portion in collapsed condition and prevent the passage of liquid therethrough. It is noted that the clamp **40** be applied only to the outlet sleeve **30** to prevent the discharge of liquid from the bladder.

With reference to FIGS. **5–8,** the upper or open end of the neck **26** is provided with a pair of tie strips **47** which are carried within the pockets formed by the flaps **27.** Each of these strips includes a thin wire or other stiff material sandwiched between two narrow lengths of paper, plastic or other flexible material. When the ties are to be inserted into the pockets at the top of the neck **26,** each of such ties is bent into a J-shape having a short leg of a length substantially equal to the width of the neck and a long leg approximately twice as long as the short leg. When the strips are inserted into the pockets, the long leg is passed through one of the pockets and the short leg is received within the other pocket in such a manner that the bight portion abuts the side seams **25** and provides a reinforcement therefor. The strips are arranged so that one leg extends from one side of the neck and the other long leg extends from the other side of the neck so that both side seams will be reinforced and the short leg of one strip will be disposed within the same pocket as the long leg of the other strip.

When it is desired to introduce liquid into the bladder **21,** the open end of the neck **26** is spread apart in the central portion. In doing this the tie strips **47** are bent to retain the neck in spread apart position. After the liquid has been introduced into the bladder, the open end of the neck is collapsed so that the legs of the tie strips are generally parallel with each other, after which the upper end of the neck is rolled upon itself to close the upper end of the bladder. Thereafter the free ends of the long legs are bent toward each other and twisted together to seal the neck.

The syringe **20** together with the clamp **40** may be folded to form a small compact unit which is stored in a suitable small container, for example, like a hard pack cigarette package (not shown). In certain cases when the nozzle **31** is detachable from the bladder **21,** it is contemplated that the nozzle could be packaged in a separate container. Also, if desired, several bladders could be packaged together with a single nozzle.

In the operation of the device, the passageway **32** is first closed by the clamp **40,** the open end of the neck **26** is spread apart and remains in the open position due to the added rigidity provided by strips **47.** The medicament pouch **35** is ruptured and discharges its contents into the bladder. A suitable quantity of liquid is introduced through the elongated neck **26** and then the neck is rolled upon itself and locked into a closed position by twisting the free ends of strips **47** together. Thereafter, the nozzle **16** is inserted into the human body, and the pin **45** is removed to permit discharge of the liquid contents of the bladder through passageway **32** of the nozzle. Pressure may be applied to the bladder to discharge the liquid from the bladder with suitable force. When such pressure is applied to the bladder, liquid is prevented from leaking through the closed neck **26** or around the joint between the outlet sleeve **30** and the nozzle **31.**

I claim:

1. A disposable syringe for use in feminine hygiene comprising a bladder of front and rear sheets of flexible heat sealable material joined together along opposite edges to form side seams, said bladder having an enlarged central portion with an elongated open end filler neck at one end and an open end outlet sleeve at the opposite end, said side seams extending substantially from the open end of the filler neck to the open end of the outlet sleeve, a semi-rigid discharge nozzle having one end received within said outlet sleeve, means for removably connecting said outlet sleeve to said nozzle, releasable clamp means selectively engaging said outlet sleeve above the connection of said discharge nozzle and outlet sleeve to close said sleeve and prevent passage of liquid from the bladder through the nozzle, means for releasing the clamp means, a pocket formed in each of said front and rear sheet material adjacent to the open end of said filler neck, two tie strips mounted in said pockets, each of said strips having a shorter leg portion extending into one pocket and a longer leg portion extending through and beyond the other pocket, the short leg of one tie strip being disposed within the same pocket as the long leg of the other tie strip and the long legs of each strip extending in opposite directions through and beyond said filler neck, whereby said tie strips extend across and reinforce said side seams and selectively retain the open end of the filler neck in a spread-apart position, said elongated filler neck being adapted to be rolled upon itself and a portion of the long legs of the tie strips extending beyond the filler neck being adapted to be twisted around the rolled up filler neck to retain the filler neck in a rolled up position.

2. The structure of claim **1** in which said nozzle has a flexible portion located within said outlet sleeve and adapted to be compressed by said clamp means.

3. The structure of claim **1** in which said nozzle includes an annular groove located within said outlet sleeve, and an elastic member mounted on said sleeve for forcing said sleeve into said groove.

4. The structure of claim **1** including a medicament pouch located within said bladder, and means for discharging medicament from said pouch into the liquid within said bladder.

* * * * *