April 14, 1959 S. J. McGIVERAN ET AL. 2,881,760

VAGINAL SYRINGE

Filed April 1, 1957

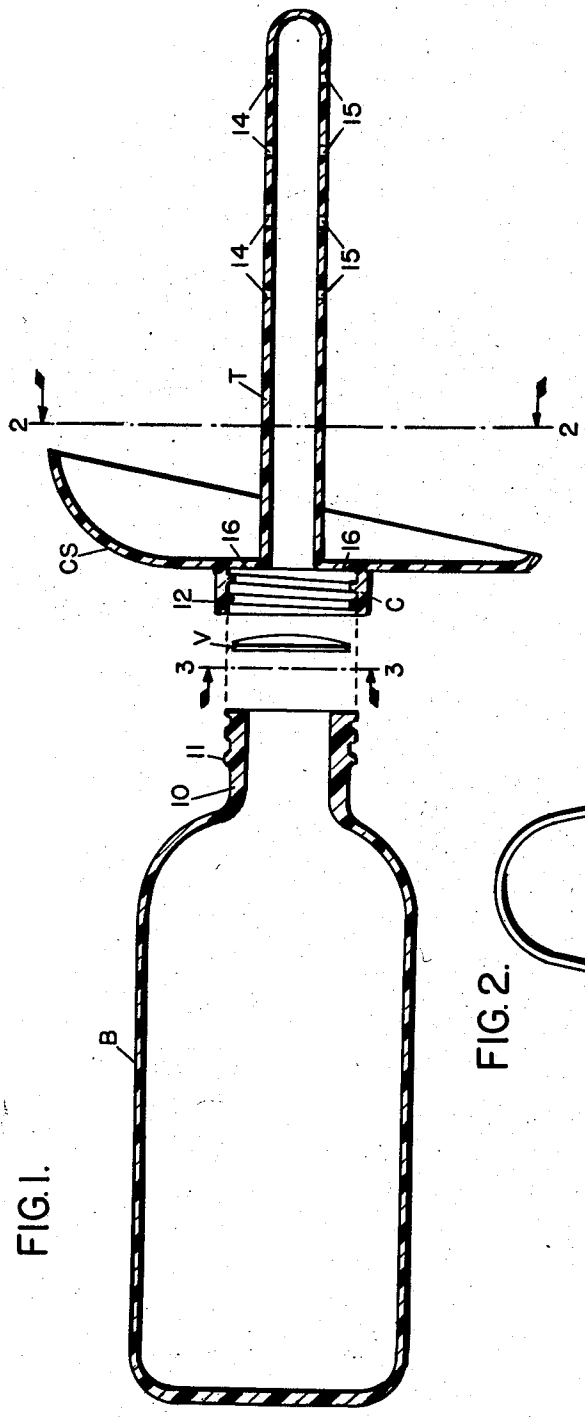


FIG. 1.

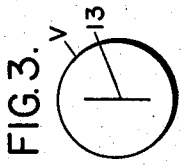


FIG. 3.



FIG. 4.

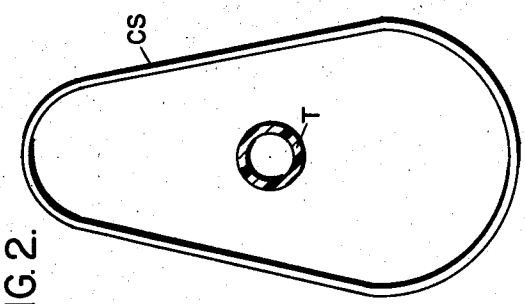


FIG. 2.

INVENTORS
S. J. MC GIVERAN
AND J. G. MYERS

BY

THEIR AGENT

United States Patent Office 2,881,760 Patented Apr. 14, 1959

2,881,760

VAGINAL SYRINGE

Stanley J. McGiveran and Julian G. Myers, Chicago, Ill., assignors to Emanem Laboratories, Inc., Chicago, Ill.

Application April 1, 1957, Serial No. 649,794

6 Claims. (Cl. 128—251)

This invention relates to vaginal syringes for female use, and it more particularly pertains to such syringes wherein a charge of medicating fluid can be maintained in the area to be treated for any desired time interval.

Most vaginal syringes are of the irrigational type, wherein the medication may not be applied thoroughly to all areas to be treated, and is not maintained in contact with the treated area long enough to be fully effective. Many of these syringes are dangerous to use because of momentary excessive pressures and back pressures caused by the use of a compressible bulb.

A syringe constructed according to the present invention overcomes these difficulties and provides improved medication contact with the area to be treated. This syringe has a shield that is formed like a cup, and is made of yieldable plastic with the edges of the cup contacting the body so as to form a tight seal, and thus maintain a medicating charge in contact with the area to be treated as long as the syringe is held substantially tightly in contact with the body.

The present invention prevents the building up of harmful pressures. The use of a very thin-wall squeeze bottle reservoir that lacks the resilience of other bulbular syringes because of being constructed of soft plastic eliminates the pumping action that makes other such syringes dangerous to use.

Back pressures are equally harmful, and back pressures are prevented by a valve between a squeeze bottle reservoir for medicating fluid and the syringe tube. This valve not only prevents flow back into the squeeze bottle, but it also prevents a suction from being formed within the syringe tube when pressure on the squeeze bottle is released. In other words, after the bottle is squeezed, it does not restore to its original shape because the valve prevents flow back into the bottle.

An object of the present invention is to provide an improved vaginal syringe having a cup shaped shield formed with the cup edges in the direction of the syringe tube so as to be able to retain a medicating charge for any desired time interval in contact with the area to be treated.

Another object of the present invention is to provide a vaginal syringe having a syringe tube, bottle cap, and valve seat molded as an integral unit.

Another object of the present invention is to provide a vaginal syringe wherein the syringe tube is detachably connected to a very thin walled squeeze bottle, and a resilient disc type plastic valve is disposed between the bottle and the syringe tube.

Another object of the present invention is to provide a convenient syringe that eliminates the danger of excessive pressures.

Other objects, purposes, and characteristic features of the present invention will be in part obvious from the accompanying drawings, and in part pointed out as the description of the invention progresses.

In describing the invention in detail, reference is made to the accompanying drawings in which similar reference characters are used to designate corresponding parts in the different views, and in which:

Fig. 1 is an elevational sectional view of a vaginal syringe constructed according to the present invention in which separate elements are shown in exploded relationship;

Fig. 2 is a view partly in cross section of the cup shaped shield, taken along the line 2—2 of Fig. 1, and viewed in the direction of the arrows:

Fig. 3 is an elevational view of the syringe valve, taken along the line 3—3 of Fig. 1, and viewed in the direction of the arrows; and,

Fig. 4 is an enlarged fragmentary sectional view of the edge of a cup according to a modified form of the present invention.

With reference to Fig. 1, the vaginal syringe comprises, along a common axis, a squeeze bottle B, a valve V, and a syringe tube T. Integral with the tube T is a cup shaped shield CS and a cap C for the connection of the syringe tube T to the squeeze bottle B.

The squeeze bottle B is preferably of soft pliable thin-wall plastic as is illustrated in Fig. 1, having a neck **10** with threads **11** formed thereon for cooperating with threads **12** formed in the cap C so that the squeeze bottle is readily detachably connectable to the syringe tube T. By constructing the squeeze bottle B of thin and relatively soft plastic, there is little tendency for the bottle to restore to its original shape after being squeezed, and thus there is very little back pressure to be resisted by the valve V.

The valve V is formed of resilient plastic in the shape of a disc, with a slit **13** (see Fig. 3) through the center portion. The valve V may be formed slightly convex, as is shown in Fig. 1, so that the slit **13** is readily opened for passage of fluid from the bottle B to the syringe tube T, but is closed tightly by any back pressure that may be formed upon the release of pressure applied to the squeeze bottle B. The valve V is of a size to fit over the end of the neck **10** of the bottle B, and within the cap C.

The syringe tube T has an inside diameter substantially less than diameter of the neck **10** of the squeeze bottle B, and it is formed to extend from substantially the center of the inside of the oval shaped cup CS and along the axis of the bottle B, valve V, and cap C. The tube T has upper openings **14** and lower openings **15** for the passage of medicating fluid to the area to be treated.

The cup CS, when viewed elevationally as is shown in Fig. 1, has a base that extends normal to the axis of the syringe tube T. The base merges into curved edges that are curved in the direction of the tube T. Thus the cup CS is formed in a manner so that the cup edges contact the body in the use of the syringe to form a tight seal for retention of medicating fluid. The bottom of the cup CS serves as a seat at the point **16** for the valve V.

In the use of the vaginal syringe provided by the present invention, because of the entire mechanism being constructed of yieldable plastic, it readily adapts itself to the distinctive angles, sizes and contours of different individuals who may use it, and in each case, when held reasonably tight to the body when used, a charge of medicating fluid is maintained as long as is desired. At the end of this time, the charge is released upon initiating removal of the tube T.

A modified structure for the cup edge to insure a tight seal is shown in Fig. 4, wherein the cup CS1 has been illustrated as having a double edge formed therein. In this structure, two laterally spaced double edges **20** are formed of relatively thin soft plastic so as to insure a tight seal when the cup CS1 is pressed against the body.

Having thus described a specific structure of a vaginal syringe as one embodiment of the present invention, is it

to be understood that various modifications, adaptations, and alterations may be applied to the specific form shown, without departing from the spirit and scope of the present invention, except as limited by the appending claims.

What we claim is:

1. A vaginal syringe comprising, a vaginal tube having openings formed therein, a cup shaped shield secured to one end of the tube with the inside of the cup facing the tube, the edges of said cup being formed of a plurality of laterally spaced soft plastic ridges, and a squeeze bottle detachably secured to said one end of the tube.

2. A vaginal syringe comprising, a vaginal tube having openings formed therein, a cup shaped shield of soft plastic material secured to one end of the tube, a squeeze bottle, and a cap for said squeeze bottle secured to said one end of said tube and adapted to be detachably secured to said squeeze bottle.

3. A vaginal syringe according to claim 2 wherein the cap of the integral unit is larger in diameter than the inside diameter of the vaginal tube and thereby forms a seat for a disc type valve.

4. A vaginal syringe comprising, an integral vaginal tube and shield and bottle cap, a squeeze bottle adaptable to be detachably secured to said vaginal tube by said cap, and a valve comprising a plastic disc disposed in said cap between said squeeze bottle and said vaginal tube.

5. A vaginal syringe according to claim 4 wherein the valve has a slot formed therein for the passage of fluid.

6. A vaginal syringe according to claim 5 wherein the valve is formed with a convex surface whereby the slot is readily opened in response to passage of fluid out of the bottle, but is closed by back pressure to prevent flow of fluid back into the bottle.

References Cited in the file of this patent

UNITED STATES PATENTS

1,092,684 Wilde ---------- Apr. 7, 1914