United States Patent [19]

Dash

[11] **3,850,173**

[45] **Nov. 26, 1974**

[54] **FLUSHABLE VAGINAL APPLICATOR**

[75] Inventor: **Barry H. Dash,** Englewood Cliffs, N.J.

[73] Assignee: **American Home Products Corporation,** New York, N.Y.

[22] Filed: **Apr. 30, 1973**

[21] Appl. No.: **355,393**

[52] **U.S. Cl.** **128/261,** 128/270

[51] **Int. Cl.** **A61m 31/00**

[58] **Field of Search** 128/260, 263, 261, 270, 128/264, 265; 222/249, 386

[56] **References Cited**

UNITED STATES PATENTS

2,077,176	4/1937	Lermer	128/261
2,486,056	10/1949	Oclassen	128/261
2,616,423	11/1952	Kurkjian	128/261
2,691,980	10/1954	Jones	128/261
3,656,482	4/1972	Sunnen	128/261

Primary Examiner—Aldrich F. Medbery

Attorney, Agent, or Firm—Joseph Martin Weigman

[57] **ABSTRACT**

The disclosure is directed to a single use vaginal applicator for oil and water emulsion medicaments such as spermicides which maintain the medicament during a long shelf life but are composed in large part of low wet strength paper which decomposes readily upon contact with water. This makes the applicators disposable by flushing in a toilet. The only non-water decomposable members are relatively small in size and will not cause obstructions in plumbing.

2 Claims, 3 Drawing Figures

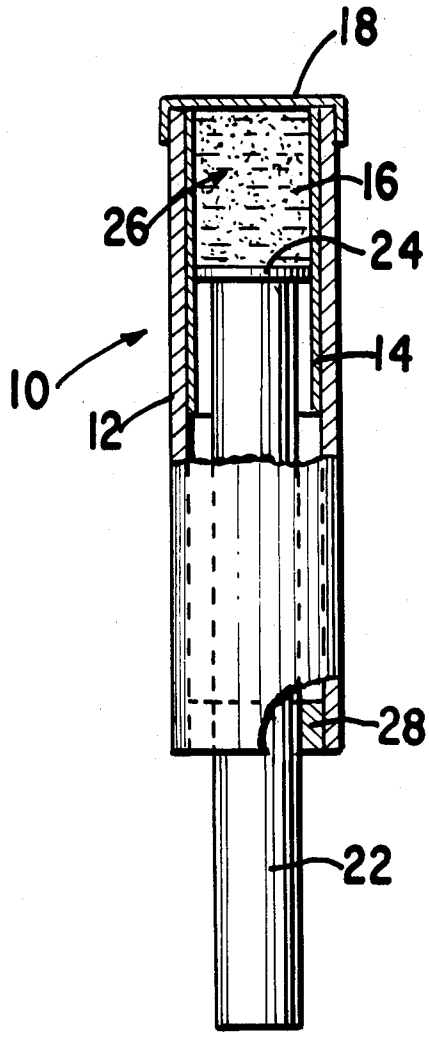


FIG. 1

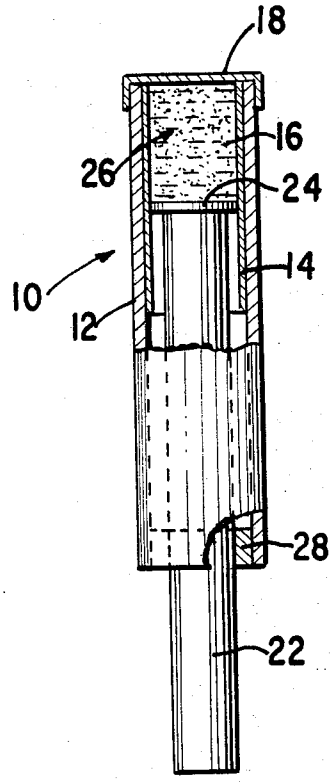
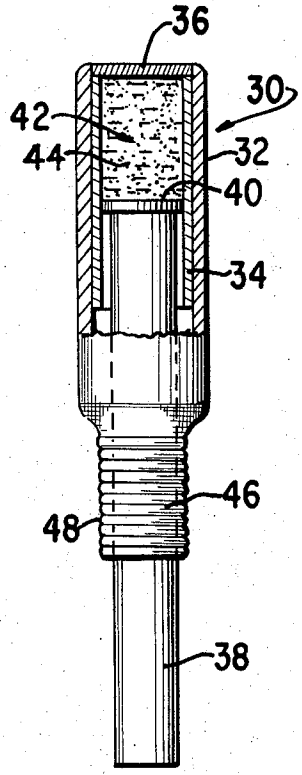


FIG. 3



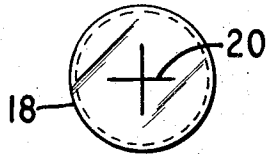


FIG. 2

FLUSHABLE VAGINAL APPLICATOR

The present invention is directed to disposable vaginal applicators. More particularly it is directed to single use disposable vaginal applicators which decompose upon contact with water and so are flushable down a toilet. The only non-water disposable water decomposable elements are relatively small and do not cause blockage in the plumbing system.

The closest known prior art is U.S. Pat. Nos. 2,486,056, 2,720,881 and 2,691,980. The present invention is distinguishable from the prior art in the use of relatively small non-water decomposable elements supported by necessarily large elements which are water decomposable. The fact of water decomposition, or low wet strength, makes the applicators disposable with substantially no risk of plugging of a plumbing system.

The oil in water emulsion and water based resistant components may be made of polyethylene, polyvinyl or other suitable plastic or metal, as is known in the art.

It is an object of the present invention to provide a disposable vaginal applicator which is suitable for use with oil in water emulsions of water based medicaments.

It is another object of the present invention to provide a single use vaginal applicator which readily decomposes on contact with water.

Other and further objects will be apparent to those skilled in the art from reading the following specification in conjunction with the drawings in which:

FIG. 1 is an elevational view partly in section of a preferred embodiment of the applicator of the present invention;

FIG. 2 is an end view of the applicator of the present invention as shown in FIG. 1; and

FIG. 3 is an alternate embodiment of the applicator of the present invention.

The objects of the present invention may be achieved as is seen in FIG. 1 with an applicator **10** which is made up of a first cylindrical body member **12** which is preferably made up of a low wet strength paper. Disposed within the first cylindrical body member **12** is an oil and water impervious liner **14** which serves to contain the oil-water emulsion medicament **16.** An outer seal **18** is applied to the exterior of the first cylindrical body member **12** in sealing engagement, for instance by use of adhesives. Scores **20** are provided in the outer surface of the seal **18** to increase its frangibility and insure controlled breaking under pressure during discharge of the contents **16.**

An alternate means of sealing the ends of the applicator is a tear strip around the end of the outer seal **18.** This is particularly suitable when relatively strong seals are used.

A second cylindrical member **22** is disposed partly within and partly without the first cylindrical body member **12.** A diaphragm or plunger seal **24** of oil and water impervious material is fixably attached to the end of the second cylindrical member **22.** It serves to retain the medicament **16** within a chamber **26** formed by the liner **14,** thie seal **18** and a diaphragm **24.**

If desired a guide **28** may be applied at the end of the first cylindrical member **12** opposite the seal **18.** The guide contains an orifice which is adapted to permit easy passage of the second cylindrical member **22** but

to control its direction of application and to prevent its falling out of the first cylindrical member.

In operation the medicament-containing end of the applicator **10** is inserted into the body orifice to be medicated, and the medicament **16** is expelled by moving the second cylindrical body member **22** relative to the first cylindrical body member **12** so as to reduce the size of the chamber **26,** cause increased pressure on the seal **18** which ruptures along the score **20,** causing the contents to be discharged into the body opening.

An alternate embodiment of the present invention is shown in FIG. **3.** There an applicator **30** which is comprised of a first cylindrical body member **32** which has disposed in its adjacent one end a liner **34.** The liner is closed by a seal **36** which may be fastened directly to the liner and made of the same material as the liner. The connection of the two may take place by use of adhesives, by heat or by ultrasonics. If desired the seal may be scored in the same manner as the embodiment of FIG. **1** was scored as is shown in FIG. **2.** A second cylindrical body member **38** has at one end a diaphragm or plunger, **40** which is preferably of the same material as the liner **34.** The diaphragm **40** along with the liner **34** and the seal **36** define a chamber **42** to contain a medicament **44.**

If desired the end portion **46** of the first cylindrical member may be necked down to provide a sleeve through which the second cylindrical member passes and is guided in its movement. Also, if desired, knurling **48,** or a series of annular ridges, may be applied on the outer surface of the end portion in order to provide a firmer finger grip.

In operation the second cylindrical member **38** is moved relative to the first cylindrical member **32** creating a pressure in the chamber **42** causing the seal **36** to rupture and the medicament **44** to be discharged into the body opening.

What is claimed is:

1. A single use vaginal medicament applicator comprising:

A. A low wet strength first cylindrical body member having a distal end,

1. An oil and water resistant cylindrical liner disposed inside said first cylindrical body member extending along and adjacent said distal end thereof,

2. Means for providing a medicament protection and discharge means comprising a frangible oil and water resistant seal fixedly connected to the outer end of said liner and to said first cylindrical body distal end;

B. A low wet strength second cylindrical body member slidably received within said first cylindrical body member and said liner with one end extending outside thereof,

1. An oil and water resistant plunger diaphragm mounted on the end of said second cylndrical member extending inside said liner and defining a chamber and sealing the contents of said liner and constituting a means to expel the contents from the liner by force applied to said second cylindrical member.

2. A vaginal applicator as defined in claim **1** further including a means on said first cylindrical body members proximal end for guiding said outside extending second cylindrical body member in said first cylindrical body member.

* * * * *