United States Patent

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[54] **DISPOSABLE SQUEEZE TUBE WITH FOLDABLE NOZZLE**
7 Claims, 3 Drawing Figs.

[52] **U.S. Cl.** **206/63.2,** 128/232, 128/261
[51] **Int. Cl.** **A61m 31/00**
[50] **Field of Search** ..... 128/261, 224, 239—247, 230—232; 206/63.2

[56] **References Cited**
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ABSTRACT: A dispenser and complemental applicator comprising a disposable squeezable tube providing a container for a medicament. The applicator comprises a suitably rigid nozzle whose rearward intake end is communicatively joined to the medicament ejecting neck of the container by bendably flexible connecting means. This connecting means is also resilient and foldable and permits the nozzle to be positioned alongside one lengthwise side surface of the container whereby the side-by-side container and nozzle can be compactly and conveniently stored in a sterile marginally openable plastic envelope.

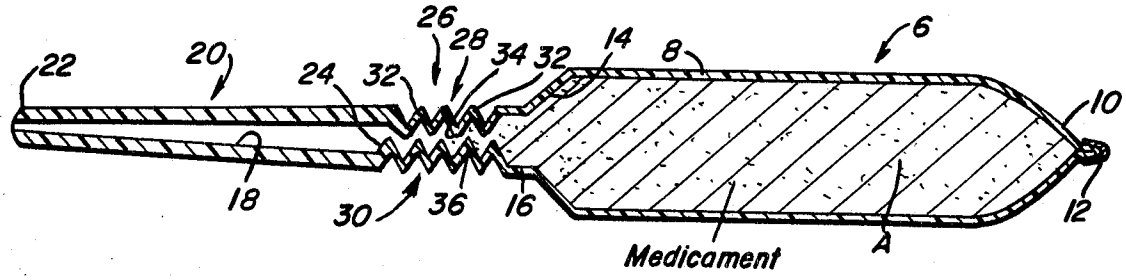


Fig. 1

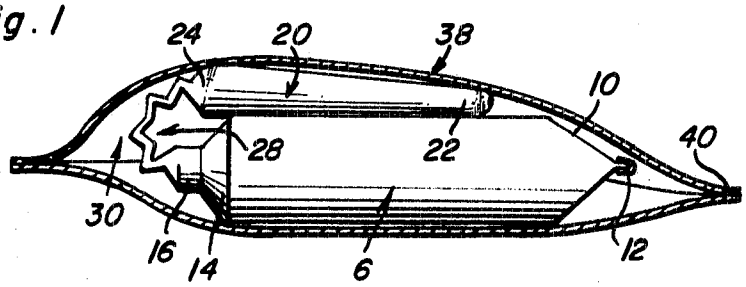


Fig. 2

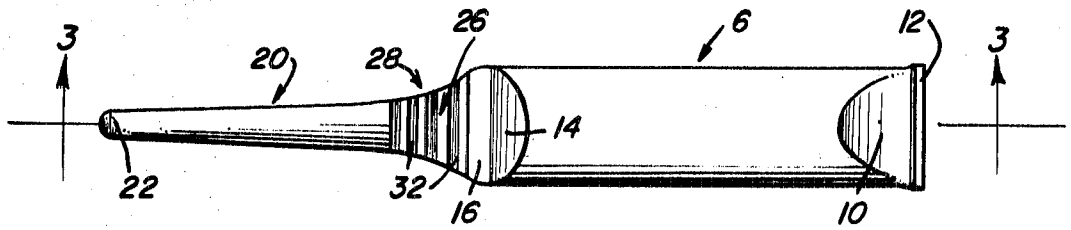
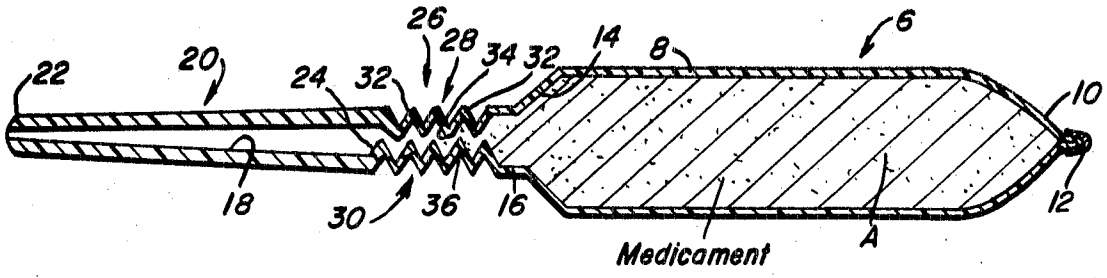


Fig. 3



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DISPOSABLE SQUEEZE TUBE WITH FOLDABLE NOZZLE

This invention relates to a squeezable collapsible tube providing a container for a jellylike medicament adapted to injected in a body cavity, the forward end of said tube being provided with a nozzle-type applicator, and said applicator having its rearward intake end operatively and communicatively connected with the forward end of said tube through the medium of novelly functioning means.

Briefly the ready-to-use jellylike medicament is stored in the container, more particularly, a disposable manually squeezable tube similar to the tube currently used for holding and dispensing petroleum jelly, dentifrice, cosmetic creams and the like. The rearward end of the tube is closed and the forward end terminates in a reduce medicament discharging neck. The applicator takes the form of an elongated substantially rigid nozzle of requisite length and cross section and whose rearward intake end is operatively communicatively united with the neck by unique connecting means. To the ends desired, the connecting means comprises opposed interconnected webs, both webs being corrugated and the corrugations providing spaced parallel accordionlike ribs and intervening furrows. The ribs and furrows are resilient and flexible and, in addition, are extensible and retractable. Accordingly, these corrugated webs are possessed of the inherent bending capabilities necessary to permit the nozzle to be folded and compactly stored alongside one side of the container, preparatory to use, and in a manner to facilitate compact and convenient as well as safeguarded placement in a openable plastic envelope or wrapper.

In carrying out the principles of the invention the ribs on the second-named web are aligned with and capable of being nested in the furrows provided in the first-named web whereby the two webs can be interlocked in a manner to block communication between the neck and intake end of the nozzle. Thus the interlocking ribs and furrows provide a closing or valving action. In addition, the inherent resilient properties cause the nozzle to spring into axial alignment with the axis of the container when the appliance has been removed from the envelope and is readied for vaginal or other use.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIG. 1 is a view showing the packaged appliance, that is the nozzle folded back and alongside the tube or container and with the connecting means in elevation and suitable bent or folded and also showing the enveloping wrapper or envelope intact but appearing in section.

FIG. 2 is a plan view of the appliance with the injecting nozzle in approximate axial alignment with the axis of the squeezable container.

FIG. 3 is a longitudinal section on a slightly enlarged scale taken approximately on the plane of the central section line 3–3 of FIG. 2.

The medicament container is denoted, generally stated, by the numeral 6 and comprises a disposable squeezable or collapsible tube 8 of requisite length, cross section and capacity. The rearward end portion 10 is closed and sealed as at 12. The forward tapering or conical end portion 14 is joined with an integral reduced discharge neck 16. The applicator comprises a longitudinally bored substantially rigid plastic or equivalent nozzle, the bore of which is denoted at 18. The nozzle is designated, generally stated, by the number 20 and is of requisite length and cross section. The blunt leading or forward end 22 is normally open to facilitate ready-to-dispense use. The rearward or trailing end portion 24 is connected with the neck 16 by way of novel uniting or connecting means which is designated generally stated, by the numeral 26. This means functions to integrally and communicatively join the rearward trailing or intake end 24 of the nozzle 20 with the forward discharge neck. This means is flexible and bendable

and permits the axis of the nozzle to be angled with respect to the longitudinal axis of the container. This means is also resilient and is designed and adapted to be bent and folded upon itself in a manner that the nozzle can be compactly positioned proximal to and stored alongside one side of the container or tube in the manner shown in FIG. 1. More specifically the means comprises a corrugated first web 28 and a similarly corrugated second companion web 30. These webs are substantially wedge-shaped in plan as shown perhaps best in FIG. 2. The first web embodies several spaced parallel corrugations or ribs 32 and intervening hollow furrows 34. The ribs or corrugations 36 of the web 30 are so staggered and arranged that the ridge portions can be nested in the furrows 34 so that when the nozzle is bent and folded to assume the position shown in FIG. 1, the coacting ribs and furrows provide a closing or valving action which virtually blocks the passage of the medicament A from the container to the nozzle. On the other hand, when the nozzle is straight, that is in axial alignment with the axis of the container as shown in FIGS. 2 and 3, it will be evident that the medicament can be squeezed and caused to pass by way of the corrugated connecting means 26 into the bore of the nozzle.

With the construction and arrangement shown a plastic envelope or wrapper of suitable plastic material is provided and it is denoted generally stated, by the numeral 38. In actual practice suitable instructions will be printed or otherwise displayed on the surfaces of the envelope with the idea in mind that the rearward marginal edge 40 as shown in FIG. 1 is to be opened to allow the overall appliance to be withdrawn so that the nozzle will then snap into its ready-to-use position.

Manifestly, the container can be employed to store a supply of any suitable jellylike medicament.

It is believed that the construction and arrangement of details will be evident by studying the several views, singly and collectively, that the manner of wrapping and packaging will be evident from FIG. 2 and the mode of use evident in FIGS. 2 and 3. Accordingly, a more extended description is thought to be unnecessary.

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.

I claim:

1. For use when called upon to inject a prescribed medicament into a predetermined cavity in a human body, a container and complemental applicator comprising a manually squeezable container for the medicament, said container having a closed rearward end and a forward end terminating in a reduced open medicament discharging neck, a substantially rigid applicator nozzle having a rearward intake end and a forward discharge end, said nozzle being in dispensing and communicating alignement with said neck when readied for injection use, and means integrally and communicatively joining the rearward intake end of said nozzle with said neck, said means being bendably flexible and permitting the axis of said nozzle to be angled with respect to the longitudinal axis of said container, said communicating and joining means being also resilient and designed and adapted to be manually bent and folded upon itself in a manner that the nozzle can be compactly positioned proximal to and alongside one side of said container prior to assuming an in-use position, and wherein said means is extensible and retractable and has the inherent properties of being transformed into a return-bend which in turn, has the capability of allowing said nozzle to be stored alongside said container.

2. The container and applicator defined in and according to claim 1, and, in combination, a protective envelope in which the conjoint container and nozzle are protectively wrapped until required for use, said envelope being made of material which can be intentionally torn open, that is, when the device is needed for use.

3. The container and applicator defined in and according to claim 1, and wherein said means is corrugated, the corrugations providing spaced parallel accordionlike ribs and intervening furrows, said ribs and furrows being extensible and retractable and having the inherent bending capability permitting said nozzle to be folded and compactly stored alongside one side of said container in a manner to facilitate compact and convenient as well as safeguarded wrapping of the container and applicator.

4. The container and applicator defined in and according to claim 1, and wherein said means comprises a first web having spaced parallel ribs and intervening hollow furrows and a second web opposed to said first web and likewise having similar spaced parallel ribs and intervening hollow furrows, the last-named ribs being aligned with and capable of being nested in the first-named furrows, whereby said webs can be interlocked in a manner to block communication between the neck and intake end of said nozzle.

5. The container and applicator defined in and according to claim 4, and, in combination, a protective envelope in which the conjoint container and nozzle are protectively wrapped until required for use, said envelope being made of material which can be intentionally torn open, that is, when the device is needed for use.

6. A manually usable holder and applicator comprising an elongated squeezable container having a closed rearward end and a forward end terminating in a reduced open commodity discharging neck, an elongated substantially rigid nozzle having a rigid trailing intake end and an open leading end, and means integrally and communicatively joining the trailing end of said nozzle with said neck, said means comprising a first flexible bendably resilient web, said web having spaced parallel ribs and intervening hollow furrows, and a second web opposed to and confronting said first web and likewise having similar spaced parallel ribs and intervening hollow furrows, the last-named ribs being aligned with and capable of being nested in the first-named furrows, whereby said webs can be interlocked in a manner to block communication between the neck and intake end of said nozzle.

7. The combination defined in and according to claim 6, and wherein the overall holder and complemental applicator is made of single-use disposable material, and, in combination, a protective-type manually openable envelope in which said holder and applicator are protectively wrapped and stored for ready and accessible use.