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DISPENSING DEVICE

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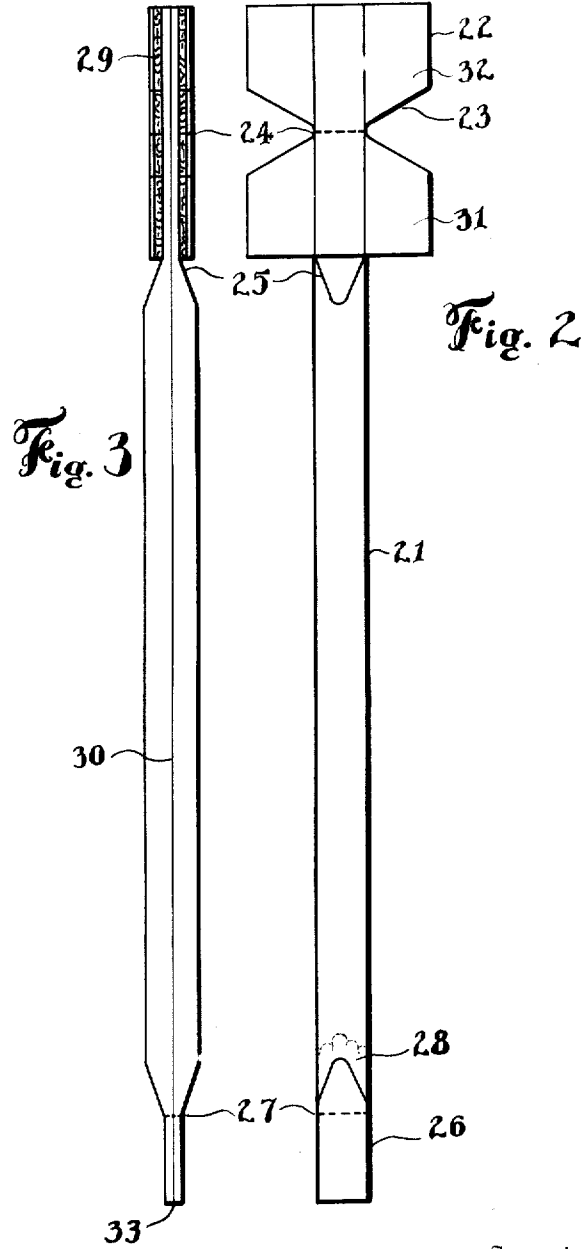
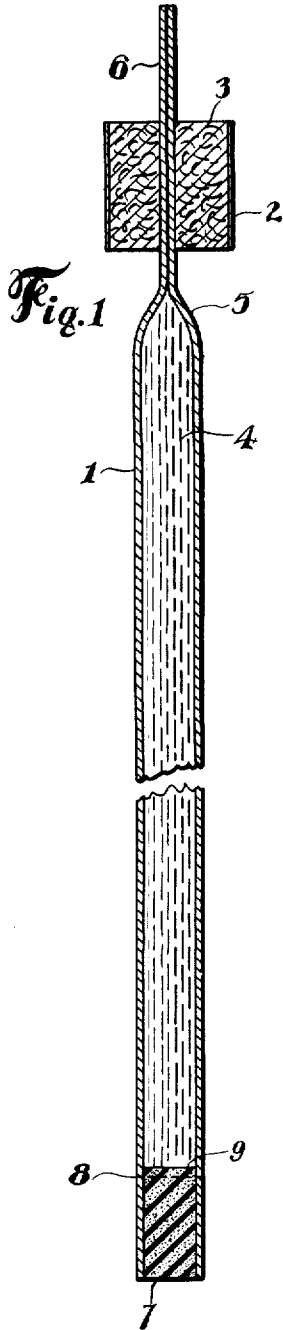


Fig. 3

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DISPENSING DEVICE

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9 Claims. (Cl. 128—271)

The present invention relates to improvements in suppositories and like devices for the introduction of medicaments into the body cavities. It will be an object of the invention to provide a suppository of the extrusion type intended for a single use after which it is capable of easy disposal. It is an object of the invention to make a cheap readily salable article, but one which performs its work in a highly satisfactory and cleanly manner, entirely obviating soiling the hands or clothes.

It is an object of the invention to provide a convenient sales package by which the articles or individual dispensing packages may be marketed in sales units of one or more.

Reference will now be had to the drawing in which like numerals indicate like parts throughout. The drawing is intended merely as showings by means of which the construction of the device may be understood.

Fig. 1 is a sectional view of one form of dispensing device.

Fig. 2 is a plan view of a modified form of dispensing device.

Fig. 3 is a side elevation of Fig. 2.

Referring more specifically to the drawing, in Fig. 1 the dispensing device takes the form of an elongated cylindrical tube 1, the term cylindrical being used in its broad sense to include an elliptical, polygonal or irregular cross-section. The tube 1 may be constructed of any well known material such as paper of various types, rubber, "Cellophane," thin molded plastics, metal foil and the like. It is desirable that the material have moisture proof characteristics or be resistant to it. Ordinary soda straws may be used in some cases. Another desirable characteristic is the yielding of a soft fuzzy edge when torn.

At one end of the tube 1 is a dispensing slide made up of an outer paper or cardboard cover 2 and an inner body 3 of fibrous material such as antiseptic or sterile cotton, gauze or the like.

The body of tube 1 is completely or partially filled with medicament 4 which may be any pharmaceutical material. The end portion of tube 1 bearing slide 2, 3 may be flattened as at 5, thus presenting a grasping portion or tab 6.

This end of the tube may be sealed in any manner such as by gluing or heat sealing. In the latter case a heated element may be used to flatten portion 6. Thus the operations of flattening and sealing may be simultaneous and be performed either before or after the material 4 is placed in the tube 1 unless such material is deleteriously affected by heat. The body of tube 1

may be lightly coated with wax. Water proof "Cellophane" has heat sealing properties.

The opposite end of tube 1 may be provided with a closure 7 of sponge rubber, wax, sealing wax or the like. A combination of materials may be used as cotton with wax on the outside.

The wall of tube 1 may be perforated or scored as at 8 to facilitate tearing the wall and removing the element 7, so that the contents 4 may be readily dispensed. Where the character of the material constituting the wall of tube 1 makes it possible it may be desirable to so form the score or perforations 8 that the torn edge is soft and fuzzy. Closure 7 may be extended beyond score line 8 as at 9. This helps prevent spilling or soiling by the outward flow or oozing of the contents 4, if they are of such character, upon removing member 7.

In Figs. 2 and 3 elongated tube 21 carries at one end a combination grip and slide dispensing element 22 which is made up of a paper or cardboard element on both sides of tube 21. This element 22 has two parts. One is the grip portion or holding tab 22 which may be glued or otherwise secured to the flattened end portion of tube 21. The other part 31 is the slide dispensing element which is not secured to the tube except insofar as it is connected to grip portion 22 at perforations or scoring 24.

If desired the tube 21 need not be flattened under the slide 31, but may contain contents which may be dispensed by pressing the parts of the slide 31 together before sliding it along the tube 21. This end of the tube 21 may be sealed in the same manner as portion 6 of tube 1.

If desired portion 32 may be eliminated and the projecting end of tube 21 may be used as the grasping means as in Fig. 1.

The opposite end of tube 21 may be flattened as at 26 and sealed as above described. Additional wax or the like may be inserted at 33. Tearing means 27 may be provided. Cotton, gauze or the like may be used as at 28 to hold the contents well within the tube 21 until dispensing is desired. This means 28 may be sealed to a portion of the flattened part 26 or may be separate from it and extracted after the portion 26 has been removed. The tube 21 may be provided with a score or weakened line 30 to facilitate the collapse of the tube when dispensing. This means 30 should not be such however that there is danger of rupture of the tube wall.

Member 22 may be provided with a cotton or gauze layer 29 under both portions or only part 31 as desired to aid dispensing. Both elements

3 and 29 may also serve to absorb any excess fluid which may tend to drip from the end of tube 1 or 21. Also they will wipe bodily secretion from the outer surface of the tube wall.

It is understood that the various closure and slide means are interchangeable as Fig. 1 may be provided with the end closure of Fig. 2, et cetera.

In operation, the end away from the slide is removed as by tearing or cutting. The tube is then inserted into the cavity to be treated. The protruding end of the tube is grasped in one hand and the slide moved under a squeezing pressure until it reaches the body of the person or animal being treated. This deposits a quantity of medicament or material at the innermost point or at the point most needed. The slide portion is then held still and the tube withdrawn while the slide is squeezed and the rest of the tube collapsed. This spreads the contents of the tube along the cavity. Of course, this last step may be stopped at any point and the tube withdrawn without further dispensing. The absorbent qualities of means 3 and 29 come into play during the withdrawal and removal of the tube.

Where the type of Fig. 2 is used the first step is to separate portions 31 and 32 at means 24. Where the tube 21 is not flattened under slide 31 the slide is compressed for initial dispensing. After use the whole unit or dispensing package is readily disposable.

These unit dispensing packages may easily be packaged in a sales unit of a dozen more or less in a suitable container.

The foregoing while descriptive of the invention in detail is intended as indicative of its character rather than as limiting its scope. Many changes suggest themselves. One such is the elimination of the slide so that the user may purchase a cheap article and then use a wad of cotton or like material that he may have at hand as the slide. Another change is making the cross-sectional area of the tube near the slide end greater than the other end. This would increase the amount of material deposited at the inner portion of the body cavity and retain the advantage of a small inserting end.

Where heat sealing is employed the dispensing end may be so treated chemically or by action of heat alone that it becomes embrittled and thus is more readily severable. This feature is particularly valuable where regenerated cellulose is used since this material is difficult to tear under ordinary conditions. Interdigitation may be combined with this heat treatment.

We claim:

1. In dispensing means for medicaments or the like, an elongate collapsible tubular container adapted to contain said material, a readily removable closure for one end of said container, the opposite end of said container being closed, said tubular container having throughout its length a small transverse dimension as compared to its longitudinal dimension, said tubular container being so constructed that it may be easily inserted into a body cavity and progressively collapsed upon withdrawal by pressure substantially transverse to its longitudinal axis whereby a portion of its contents is ejected into said body cavity, said tubular container having substantially the same cross-sectional area throughout that portion of its length which is to be inserted in a body cavity.

2. In a dispensing means for medicaments or the like, an elongate collapsible tubular container adapted to contain said material, a readily re-

movable closure for one end of said container, the opposite end of said container being closed, said tubular container having throughout its length a small transverse dimension as compared to its longitudinal dimension, said tubular container being so constructed that it may be easily inserted into a body cavity and progressively collapsed upon withdrawal by pressure substantially transverse to its longitudinal axis whereby a portion of its contents is ejected into said body cavity, said tubular container having a smooth outer wall presenting a minimum of resistance to its insertion into or dispensing-extraction from a body cavity.

3. In a dispensing package for medicaments or the like, an elongate collapsible tubular member, contents within said member to be dispensed, a readily openable closure for one end of said member, said member being closed at its opposite end, said tubular member being constructed of such size and shape and of such material that it may be easily inserted into a body cavity and progressively collapsed upon withdrawal by pressure and eject a portion of its contents into said cavity, said tubular member having substantially the same cross-sectional area throughout that portion of its length which is to be inserted into a body cavity, said member having a smooth outer wall which presents a minimum of resistance to its insertion into or dispensing extraction from a body cavity.

4. In dispensing means for medicaments or the like, an elongate collapsible tubular container adapted to contain said material, a readily removable closure for one end of said container, the opposite end of said container being closed, said tubular container having throughout its length a small transverse dimension as compared to its longitudinal dimension, said tubular container being so constructed that it may be easily inserted into a body cavity and progressively collapsed upon withdrawal by pressure substantially transverse to its longitudinal axis whereby a portion of its contents is ejected into said body cavity, slide means associated with the outside of said container, said slide means so constructed and arranged that the tubular container may be collapsed.

5. In dispensing means for medicaments or the like, an elongate collapsible tubular container adapted to contain said material, a readily removable closure for one end of said container, the opposite end of said container being closed, said tubular container having throughout its length a small transverse dimension as compared to its longitudinal dimension, said tubular container being so constructed that it may be easily inserted into a body cavity and progressively collapsed upon withdrawal by pressure substantially transverse to its longitudinal axis whereby a portion of its contents is ejected into said body cavity, slide means associated with the outside of said container, said slide means consisting of absorbent fibrous material on two sides of the container and resting on a flattened portion thereof.

6. In dispensing means for medicaments or the like, an elongate collapsible tubular container adapted to contain said material, a readily removable closure for one end of said container, the opposite end of said container being closed, said tubular container having throughout its length a small transverse dimension as compared

to its longitudinal dimension, said tubular container being so constructed that it may be easily inserted into a body cavity and progressively collapsed upon withdrawal by pressure substantially transverse to its longitudinal axis whereby a portion of its contents is ejected into said body cavity, slide means associated with the outside of said container, said slide means consisting of an inner layer of fibrous absorbent material and an outer thin layer having sufficient tensile strength to hold the inner layer in place and withstand the pressure of the dispensing force, said outer layer extending around the tubular container.

7. In dispensing means for medicaments or the like, an elongate collapsible tubular container adapted to contain said material, a readily removable closure for one end of said container, the opposite end of said container being closed, said tubular container having throughout its length a small transverse dimension as compared to its longitudinal dimension, said tubular container being so constructed that it may be easily inserted into a body cavity and progressively col-

lapsed upon withdrawal by pressure substantially transverse to its longitudinal axis whereby a portion of its contents is ejected into said body cavity, slide means associated with the outside of said container, said slide means consisting of an inner layer of absorbent fibrous material and an outer layer of thin material having sufficient tensile strength to hold the inner layer in position and to withstand the pressure of the dispensing force, said outer layer extending around the tubular container, the wall of said container having weakened portions along its longitudinal dimension to aid in its collapse and to direct the collapse along predetermined lines.

8. The combination set forth in claim 4, said slide means consisting of absorbent fibrous material on two sides of the container.

9. The combination set forth in claim 1, a piece of absorbent fibrous material associated with said container.

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7. In dispensing means for medicaments or the like, an elongate collapsible tubular container adapted to contain said material, a readily removable closure for one end of said container, the opposite end of said container being closed, said tubular container having throughout its length a small transverse dimension as compared to its longitudinal dimension, said tubular container being so constructed that it may be easily inserted into a body cavity and progressively col-

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