

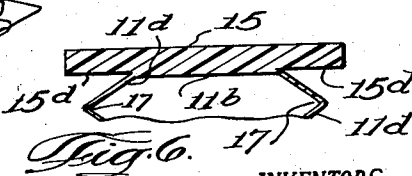
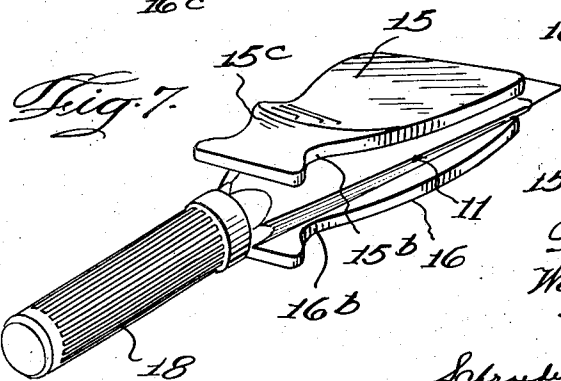
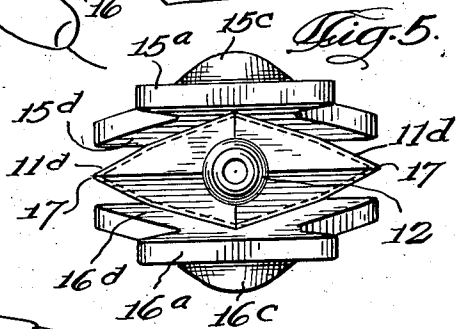
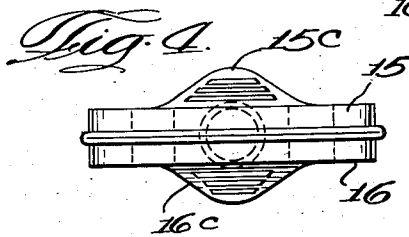
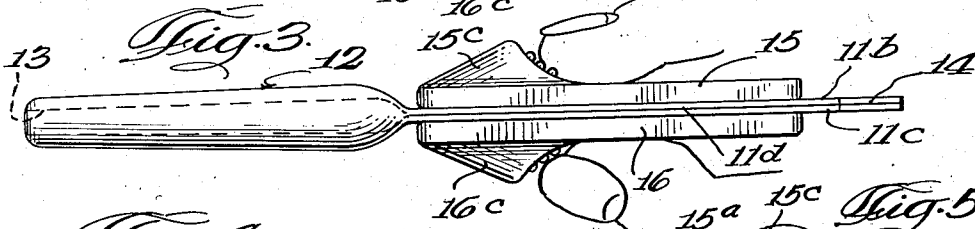
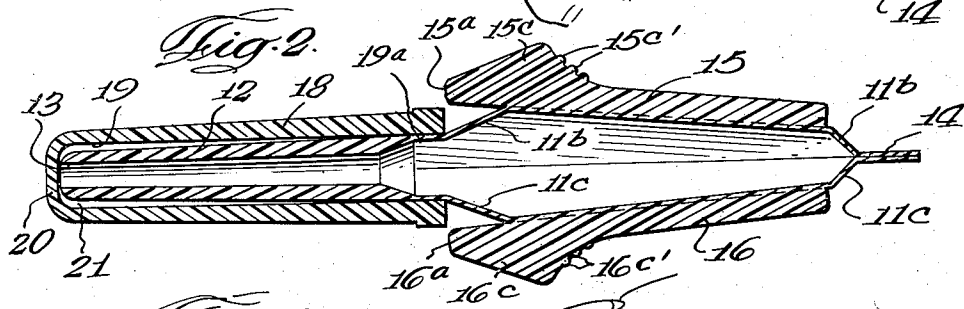
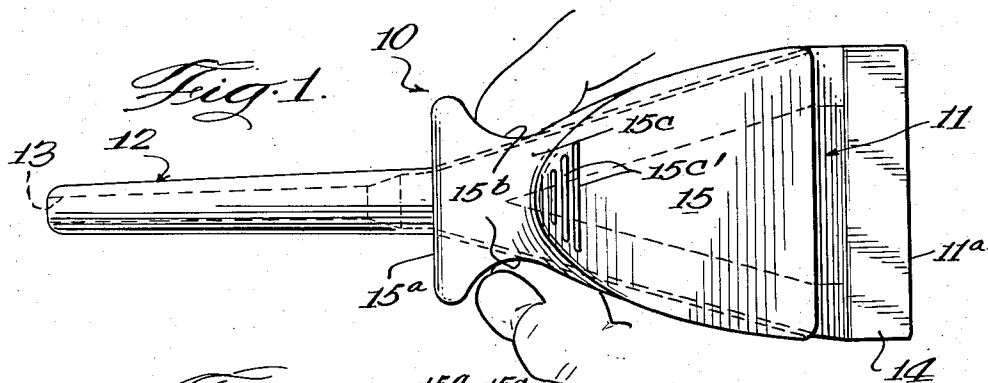
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PASTE DISPENSER

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2,862,496

PASTE DISPENSER

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This invention is concerned with a new and improved dispenser adapted to deliver a single dose of a desired medicament and is particularly adapted for the application of medicament to the interior of a body cavity.

The medicament dispenser or applicator which is the subject of this invention has a tip portion which is insertable into a body opening and a collapsible body portion containing preferably only a single dose of a medicament in a readily flowable paste or jelly-like base material. The tip portion of the dispenser is inserted into a body opening and the body portion of the dispenser collapsed, as by manual pressure, expelling the medicament-bearing material contained therein into the body cavity where the medicament may be systemically absorbed through the cavity walls.

One feature of the invention is the provision of a collapsible medicament-containing body with a discharge opening and having relatively rigid opposed sides; movement of the sides together effecting expression of the medicament through the discharge opening. Another feature is that a pair of rigid plates are disposed in opposed relationship one on either side of the collapsible body. A further feature is that means, as a raised portion, are provided on the rigid sides of the body for maintaining manual engagement therewith. Yet another feature is that the rigid plate means associated with the body portion serve to limit the depth of insertion of the tip portion into the body opening.

Still a further feature is the provision of a medicament applicator comprising a collapsible medicament containing body portion, a tip portion connected to the body portion and insertable into a body opening and manually engageable means adjacent one of the portions for effecting insertion of the tip portion into a body opening without exerting a collapsing force on the body portion. And another feature is that a rigid plate is provided on a side of the body portion, the plate having manually engageable edges spaced beyond the sides of the body portion for effecting insertion of the tip portion in a body opening without exerting a collapsing force on the body portion.

Still another feature is that the rigid plate means associated with the collapsible body portion are so shaped that no paste is trapped in the body portion upon the collapse thereof. A further feature is that the plates are integral with the top and bottom walls of the body portion and extend outwardly beyond the edges of the top and bottom of the collapsible body portion, and are so shaped or undercut that the side walls are not engaged by the plates upon collapse of the body, preventing entrapment of paste in the body portion.

Another feature is the provision of a collapsible paste-containing body having top, bottom and side walls, the side walls being adapted to fold along a desired line upon collapse of the body. A further feature is that the side walls are each provided with a single, longitudinally extending, medial crease along which they fold on collapse of the body.

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Still another feature is the provision of a medicament applicator comprising a medicament-containing body portion, a tip portion having a discharge opening therein and adapted for insertion into a body opening and a removable cover on the tip portion, the cover being spaced from the discharge opening whereby a portion of the medicament in the applicator may escape through the opening and lubricate the tip.

Further features and advantages will readily be apparent from the following specification and from the drawings, in which:

Figure 1 is a top plan view of the applicator;

Figure 2 is a vertical sectional view of the applicator with the cap in place on the tip portion;

Figure 3 is a side elevational view showing the body portion collapsed;

Figure 4 is an end view looking from the right of Figure 3;

Figure 5 is an end view looking at the tip portion of the applicator;

Figure 6 is a fragmentary sectional view of a rigid plate and a part of the body portion; and

Figure 7 is a perspective view of the applicator and cap.

It is often desirable to administer a medicament to a patient by other than the conventional oral means. In one such method a medicament is mixed with a readily flowable paste or jelly-like carrier and then introduced into a body opening, such as the rectum. The medicament is dissolved from the carrier by fluids present in the body cavity and then systemically absorbed through the walls of the body cavity. This method is particularly useful in the treatment of infants or small children where the patient's stomach is upset and it is impossible to administer a medicament orally. In such a situation aspirin, phenobarbital or other desired medicines may easily and effectively be administered rectally.

Referring now to the drawings, the medicament dispenser or applicator indicated generally as 10 includes a collapsible body portion 11 and an elongated tip portion 12. The applicator is preferably molded as a single unit of a flexible plastic material such as a heat-sealing polyethylene. The tip portion 12 is adapted for insertion into a body opening and is provided at its distal end with a discharge opening 13.

The end 11a of the body portion is left open during manufacture of the applicator to permit filling thereof with the desired medicament compositions, the interior of the tip portion 12 also being filled, of course. The end 11a is then heat sealed as indicated at 14.

The body portion 11 includes top and bottom walls 11b and 11c respectively joined by side walls 11d. Relatively rigid plates 15 and 16 are integrally formed as a part of the top and bottom walls 11b and 11c respectively. Manual pressure may be exerted on plates 15 and 16 by the thumb and forefinger as indicated in Figure 3 to dispense the contents of the applicator. The rigid plates facilitate the collapse of the body and insure that a predetermined amount of the medicament is expelled, as for example three cc. of a total quantity of three and one-half cc. in the body and tip.

The forward edges 15a and 16a of plates 15 and 16 are positioned at the base of tip portion 12 where the tip joins the body portion 11 of the dispensing device. It should be noted that plates 15 and 16 extend transversely of the body portion 11 and beyond the edges thereof a substantial distance. As best seen in Figures 1 and 7, the central portions of either side of the plates 15 and 16 are cut away to provide a generally concave area 15b and 16b which may be grasped by the thumb and forefinger (Figure 1) to facilitate insertion of the tip portion 12 into a body opening without exerting on

the body portion 11 a pressure which might tend to collapse it and discharge medicament therefrom prematurely. The rigidity of plates 15 and 16 prevents the application of compressive stress on the side walls 11d of the applicator during the insertion operation.

The outwardly extending forward edges 15a and 16a of the plates provide means for limiting the depth of insertion of tip portion 12 into the body opening in which it is inserted. The length of the tip portion 12 is of course designed for the particular use to which the applicator will be put. For example, a rectal applicator for general use may have a tip portion 1½ inches in length, while the tip portion of an applicator for infants could be slightly shorter if desired. Particularly in the case of a rectal applicator it is necessary that the tip portion be made sufficiently long so that the medicament will be deposited to the interior of the sphincter muscles in an area where the medicament will readily be absorbed through the wall tissue. By forming the forward edges 15a and 16a of the rigid plates to serve as a stop means, the tip portion 12 is automatically inserted to the proper depth.

As pointed out above, a predetermined amount of the medicament bearing jelly within the applicator is expelled through discharge opening 13 upon collapse of the body portion 11 by the exertion of manual pressure on the plates 15 and 16, Figure 3. Raised ridge portions 15c and 16c are provided on the forward portions of plates 15 and 16 and prevent the thumb and finger from sliding off the plates in the event they should be somewhat slippery. Transverse ribs 15c' and 16c' on the concave rear surfaces of ridge portions 15c and 16c enhance this action.

It should be noted that the juncture between the tip portion 12 and the body portion 11 of the dispenser is generally smooth and there is no rigid shoulder as often found in tubular dispensers. Such shoulders make it difficult to expel from the body portion of such a container all of the contents thereof. In the present structure there is no shoulder and the rigid plates 15 and 16 extend all the way to the juncture of the body portion 11 and the tip portion 12 insuring that collapse of the body portion will be easy and will discharge substantially all the contents thereof.

The side walls 11d of the body portion 11 are forced outwardly on collapse of the body portion as may be seen by comparing Figures 4 and 5. A single medial crease line 17 is provided in each of the side walls 11d to facilitate collapse of the body portion 11 and to reduce the possibility of one of the side walls rupturing during collapse. Rigid plates 15 and 16 extend outwardly beyond the edges of the top 11b and bottom 11c of the body portion of the dispenser and are formed or undercut as indicated at 15d and 16d (Figures 5 and 6) so that the side walls 11d are not engaged by the rigid plates before the body portion is fully collapsed in order that medicament will not be trapped along the crease in the sides.

The elongated tip portion 12 of the dispenser is formed with somewhat thicker walls than the body portion 11 to facilitate insertion of the tip into a body opening without bending or collapse thereof and to reduce the quantity of medicament remaining in the applicator after usage. The tip is also tapered uniformly along its length so that the distal end is approximately ¾ of an inch smaller in diameter than the base which is joined to the body portion 11.

A cap 18 is provided for the tip portion 12 and comprises an elongated tubular member having a cylindrical bore 19 of generally uniform cross section and a closed end 20. The open end 19a of the cover 18 frictionally engages the base portion of the tip 12 immediately adjacent the juncture with collapsible body 11. The length of the cover 18 is such that closed end 20 thereof is spaced slightly from the distal end of tip portion 12, leaving discharge opening 13 unsealed. This permits a small amount of the medicament within the tip portion to seep

out into the space 21 between the bore 19 of the cover and the tip 12, lubricating the tip so that it may be inserted more easily into a body opening.

While we have shown and described certain embodiments of our invention, it is to be understood that it is capable of many modifications. Changes therefore, in the construction and arrangement may be made without departing from the spirit and scope of the invention as disclosed in the appended claims.

We claim:

1. A medicament dispenser of the character described, comprising a collapsible, medicament-containing rearwardly tapered body portion, a tip portion for insertion into a body opening connected to the forward edge of said body portion and having a discharge opening therein, a pair of rigid plates in opposed relationship one on either side of said body portion for engagement by the thumb and a finger, movement of said plates toward each other causing collapse of said body portion and effecting expression of the medicament contained therein through said tip portion and said discharge opening, and a raised finger engaging surfaces at the forward portion of each of said plates for preventing the fingers from slipping from said plates.
2. A medicament applicator of the character described, comprising a medicament-containing body portion, an elongated tip portion for insertion into a body opening and having a base joined to said body portion, and relatively rigid plate means associated with said body portion for effecting the expression of a predetermined quantity of medicament therefrom and extending transversely outwardly a substantial distance from the body portion adjacent the base of said tip portion, serving to limit the depth of insertion of said tip into a body opening.
3. A medicament applicator of the character described, comprising a collapsible, medicament-containing body portion, an elongated tip portion for insertion into a body opening, having a discharge opening therein and having a base joined to said body portion, and a pair of generally flat, rigid plates in opposed relationship on either side of said body portion, movement of said plates toward each other effecting expression of the medicament in said body portion, said plates each having a forward edge portion extending transversely outwardly adjacent the base of said tip portion serving to limit the depth of insertion of said tip into a body opening.
4. A medicament applicator of the character described, comprising a collapsible, medicament-containing body portion, a tip portion connected to said body portion and insertable into a body opening and relatively rigid generally flat plate means extending transversely beyond the sides of said body portion and having manually engageable edge portions for effecting insertion of said tip portion into a body opening without exerting a collapsing force on said body portion.
5. A medicament applicator of the character described, comprising a collapsible, medicament-containing body portion, a tip portion connected to said body portion and insertable into a body opening, and a pair of rigid plates in opposed relationship one on either side of said body portion, said plates having manually engageable edges of concave configuration spaced beyond the sides of said body portion for effecting insertion of said tip portion into a body opening without exerting a collapsing force on said body portion, movement of said plates together effecting expression of the medicament in said body portion.
6. A paste dispenser of the character described, comprising a collapsible body having a discharge opening, said body including a top, a bottom and side walls, said side walls being forced outwardly upon collapse of said body, and relatively rigid plate means integral with the top and bottom of said body for facilitating the collapse thereof, said plate means extending outwardly beyond the edges of said top and bottom and being undercut

whereby said side walls are not engaged by said plates before complete collapse of said body, preventing entrapment of paste in said body.

7. A medicament dispenser of the character described in claim 1, wherein said finger engaging portions have 5 transverse ribs thereon.

8. A paste dispenser of the character described, comprising a collapsible body having a discharge opening, said body including a top, a bottom and side portions, and relatively rigid plates integrally formed with said top 10 and bottom portions and extending outwardly beyond the central portion of said side portions, for facilitating the collapse of said body, said side portions being joined with said top and bottom portions along straight lines of flexure and each side portion being provided with a single medial 15 crease line along which the side portions fold on collapse of the body, the transverse edges of said plates being sub-

stantially coterminous with said crease line on complete collapse of the body.

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