June 4, 1946. L. S. SEIDLER 2,401,585

DEPOSITOR AND APPLICATOR

Filed Aug. 4, 1943

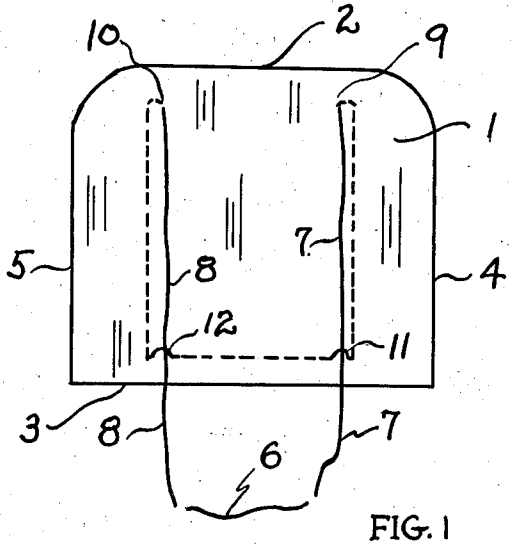


FIG. 1

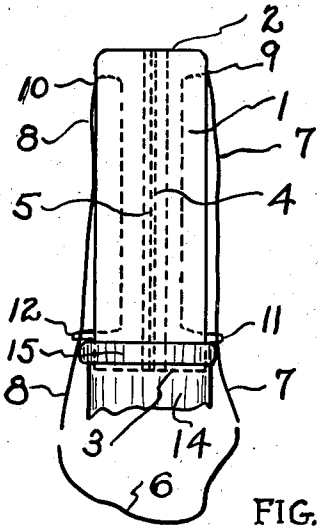


FIG. 2

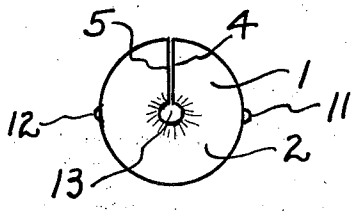


FIG. 3

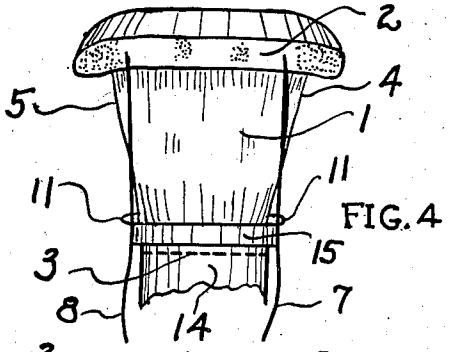


FIG. 4

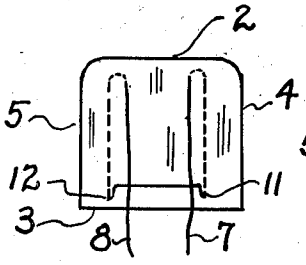


FIG. 5

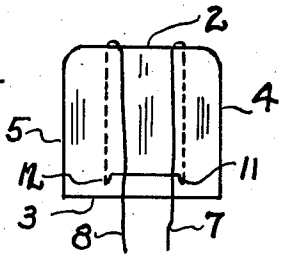


FIG. 6

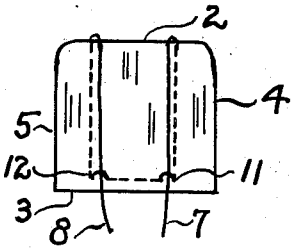


FIG. 7

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DEPOSITOR AND APPLICATOR

Leon S. Seidler, Chicago, Ill.

Application August 4, 1943, Serial No. 497,327

6 Claims. (Cl. 128—262)

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This invention relates to vaginal depositors and applicators and more particularly to the type of applicator illustrated in my Patent No. 2,268,536.

The principal object of this invention is to provide an improved core or tampon which will produce further new and novel results.

My original applicator consisted of an ejector or receptacle holding a solid expellant or core and a positive means for the extrusion thereof from the receptacle into the required cavity and for the removal thereof when required.

This invention provides for the extrusion of a core cylindrical in external formation but which after extrusion can be spread open and unfolded after it has been properly located so as to expose and apply medication previously placed therein.

The object of my invention is to provide by such a device a means of self application of various medicaments at a location difficult of self administration.

In accordance with my invention there is produced a useful and practical device. It is easy to manufacture and low in cost. It is of simple construction and easy to operate. It is positive in action. It is constructed of materials which may be sterilized if required. The core may be extruded slowly from the mouth of the cartridge and held firmly in an extruded position so that thus poised positive application may be made at the prescribed location. While at that location it may be mechanically unfolded and everted to release and apply such active substances as anaesthetics, antiseptics or estrogenic substances.

Further objects of the invention will hereinafter appear from the following description of the preferred embodiments illustrative of the invention and shown in the accompanying drawing in which:

Fig. 1 is a front view of a core unfolded before rolling into a cylindrical shape showing the disposition of the combination traction and withdrawal loop to provide guide loops and draw string.

Fig. 2 is a front view of the core rolled into cylindrical shape and extruded from the mouth of the ejector tube before further traction unfolds and unrolls it.

Fig. 3 is a plan view of the core rolled into cylindrical shape.

Fig. 4 is a front view of the core extruded from the mouth of the ejector tube and partially unrolled, unfolded and everted by further traction on the draw string.

Figs. 5, 6, and 7 are front views of other methods of applying to the walls of the core before rolling, the cords of the traction loop so as to provide guide loops and draw strings for the traction loop.

The complete device consists of a hollow tube, comprising a combined container and applicator into one end of which is fitted a snug fitting core or tampon to which is attached a combination traction and withdrawal loop so arranged that traction on the loop will extrude the core from the ejector tube while further traction will open and unfold and evert it for internal applications of medicaments, the loop later serving as a means of withdrawal of the core.

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Referring to the drawing, the device therein shown as illustrative of my invention comprises an applicator tampon fashioned from a flat section of absorbent material 1, with an upper edge or crown 2 and a lower edge or base 3, with longitudinal edges 4 and 5. A combination traction and withdrawal loop 6 is formed by joining the free ends of two draw strings 7 and 8. The draw string 7 may be attached to the outside wall at the point 9 which is adjacent to and spaced from the crown 2. The draw string 8 may also be attached to the outside wall at a corresponding point 10 likewise adjacent to and spaced from the crown 2. As a modification both cords may be placed over the crown 2 adjacent to the points 9 and 10. The guide loops 11 and 12 are formed on the outside wall adjacent to and spaced from the base 3 and directly below points 9 and 10 respectively. The cord 7 passes through guide means or loop 11 while the cord 8 passes through guide means or loop 12. When the longitudinal edges 4 and 5 are curved backwards towards each other, a split tubular cylindrical formation is formed with point 9 substantially diametrically opposite point 10 and point 11 diametrically opposite point 12. The draw strings 7 and 8 hang downwards from points 9 and 10, pass through the loops 11 and 12 and their free ends tied together to form the loop 6. As indicated in Fig. 1, the loop 6 may comprise one continuous cord formed by the draw string 7 woven into or through the material at point 9, passing backwards, downwards and outwards to form the guide loop 11, into the material, across and outwards to form the guide loop 12, into material, upwards and outwards at point 10 to form the draw string 8. Instead of separate loops at 11 and 12, there may be one loop extending from 11 to 12 as indicated in Figs. 5 and 6. When the longitudinal edges 4 and 5 are rolled together into a split tubular formation as shown in Fig. 3, an enclosure 13 is formed which may hold medicaments to be later released. This rolled core fits into the mouth of the ejector tube 14 which is provided with a reinforced lip 15.

A flat section of absorbent material 1 is woven through at points 9, 10, 11, and 12 with a draw string 6, 7, 8, as indicated. It may then be impregnated with medicaments and its longitudinal edges rolled back towards each other until they are contiguous, forming an expansible, extrudable

tampon of a substantially cylindrical split tubular formation.

The cords 7 and 8 depending from points 9 and 10 are then passed through the loops 11 and 12 and brought back to the crown in the vicinity of points 9 and 10. The base 3 is then inserted in the ejector tube 14 to substantially full length carrying the cords 7 and 8 looped back on themselves between the core and the tube. The cords 7 and 8 are then passed over the lip 15 and depend from it to have their free ends form the loop 6.

When traction is applied to the loop 6 in a direction away from the lip 15, the core is slowly extruded from the ejector tube 14 until the guide loops 11 and 12 reach the mouth of the tube as in Fig. 2. The cords 7 and 8 then depend from points 9 and 10 through the guide loops 11 and 12 and down the outside of the tube. This poises the core at the mouth of the tube for proper positioning. Further traction on the loop 6 holds the base 3 in position and unrolls and unfolds the expellable core by separating the edges 4 and 5 and straightening out the crown 2 into substantially a straight line, releasing any medication that may be in the enclosure 13. Still further traction pulls crown forward towards the base, the cords of the traction loop acting as draw strings through the guide loops. This practically everts or turns inside out the core as spread out, the edge 2 meeting the edge 3 horizontally with medication on the outside where formerly the edge 4 met the edge 5 vertically with medication on the inside. Tension is removed from traction loop and ejector tube is easily removed. The natural resilient action of the absorbent material now allows the base 3 retained up to this point in a circular formation by the mouth of the tube to expand towards a straight line further exposing the medicated surface. This entire mass may later be removed by means of traction on the loop 6, the curved corners of the crown facilitating removal.

It is apparent that the details of the device described may be varied without departing from the nature or principle of my invention and it is my intention not to limit the invention to the particular details set forth but to describe one method of obtaining the desired end so that said end, being once realized, may be accomplished by changes in the construction and arrangement of the several parts, provided that such changes fall within the scope of the appended claims.

Having described the preferred embodiment illustrative of my invention, I claim:

1. An ejector tube containing an expansible extrudable tampon, both of a substantially cylindrical external formation, said tampon being of absorbent material and provided with a combination traction and withdrawal loop and guide means for engaging said loop, said guide means comprising an external loop, the ends of said external loop extending from diametrically opposite sides and spaced from the base of said tampon, the sides of said traction loop depending from crown of said tampon, the application of traction to said loop extruding said tampon from said ejector tube, unrolling said cylindrical tampon, pulling forward the crown of said tampon to a position adjacent to its base and withdrawing said everted tampon from its location of application.

2. An expansible tampon, comprising a substantially cylindrical body of tubular formation, split vertically and parallel to its longitudinal axis, a traction loop and means for guiding said loop, said guiding means extending outward from the outer surface of said body and forming spaced diametrically opposite guides, said guides being adjacent to and spaced from its base, said traction loop being attached adjacent to and depending from crown of said body, adjacent to said body and engaging with said guiding means to unroll, unfold and evert said crown to a position adjacent to base of said body upon the continued application of traction.

3. In an internal depositor and applicating device of the kind described, an expellable expanding core comprising a cylindrical tampon of absorbent material of substantially tubular formation split vertically and parallel to its longitudinal axis and a combination traction and withdrawal loop, one end of said loop being woven through the base of said cylinder adjacent to and spaced from its base forming spaced diametrically opposite guides to receive sides of said traction loop, said sides forming flexible depending cords fastened to the outside surface of said core adjacent to its crown, said cords depending from said crown, and passing through said guides.

4. In an internal depositor and applicating device of the kind described, an expellable expanding core comprising a cylindrical tampon of absorbent material of substantially tubular formation split vertically and parallel to its longitudinal axis and a combination traction and withdrawal loop, one end of said loop being woven through the base of said cylinder adjacent to and spaced from its base forming spaced diametrically opposite guides to receive sides of said traction loop, said sides forming flexible depending cords fastened to the outside surface of said core adjacent to its crown, said cords depending from said crown, and passing through said guides, said loop being adapted by traction to open up the said split tubular formation with its vertical longitudinal opening forming an everted formation with a substantially horizontal transverse opening.

5. In an internal depositor and applicating device of the kind described, an expellable, expanding core, and an ejector tube therefor, said core being substantially cylindrical in shape and having flexible depending cords contiguous to the outside surface adjacent to its crown, said core being equipped with guide means extending from its outer surface, said means being diametrically opposite and adjacent to and spaced from its base, said cords depending from said crown and passing through said guide means, the free ends of said cords being fastened together to form a combination traction and withdrawal loop.

6. In an internal depositor and applicating device of the kind described, an expellable, expanding core, and an ejector tube therefor, said core comprising a flat section of absorbent material rolled into a tubular cylindrical formation with its vertical butted edges parallel to its longitudinal axis and having flexible cords depending from crown of said core and contiguous to the outside surface of said core, said cords passing through external loops diametrically opposite and extending from said core spaced from its base, said formation being adapted to be unrolled and everted by traction on said cords, said core being capable of impregnation with suitable medication, the walls of said formation forming means for containing medications to be released when said formation is opened and its walls are spread by said traction applied to said cords after extrusion from said ejector tube.

LEON S. SEIDLER.