July 22, 1969 T. F. SCHWARTZ 3,456,640

MEANS AND METHOD FOR INSERTING ABSORBENT CARTRIDGES INTO THE VAGINA

Filed March 27, 1967

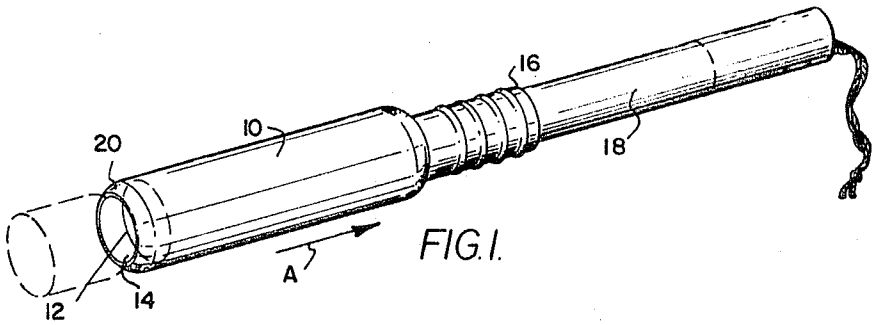


FIG. 1.

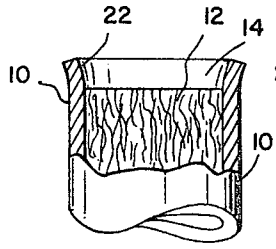


FIG. 2.

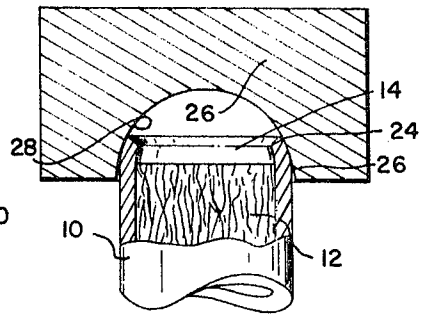


FIG. 3.

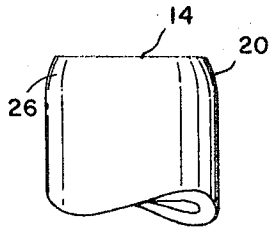


FIG. 4.

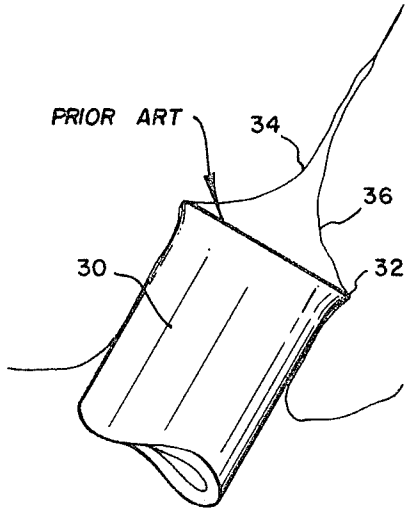


FIG. 5.

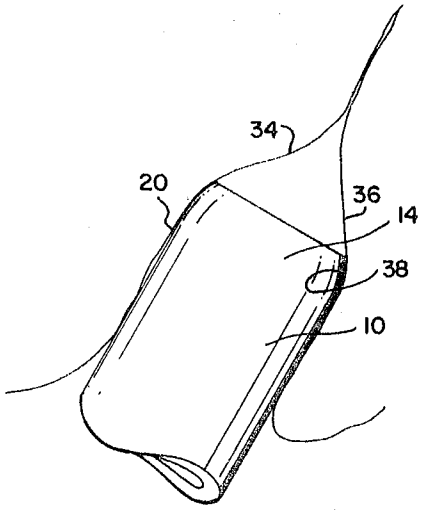


FIG. 6.

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United States Patent Office 3,456,640 Patented July 22, 1969

3,456,640

MEANS AND METHOD FOR INSERTING ABSORBENT CARTRIDGES INTO THE VAGINA

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Filed Mar. 27, 1967, Ser. No. 626,092
Int. Cl. A61f 13/20; A61m 31/60
U.S. Cl. 128—263 5 Claims

ABSTRACT OF THE DISCLOSURE

A means and method for inserting absorbent cartridges into the vagina, wherein an absorbent cartridge is contained in a container having a peripherally tapered open end adapted to facilitate the insertion of the absorbent cartridge into the vagina by spreading the wall surfaces of the vagina apart with the smooth tapered peripheral portion of the cartridge container at its open end.

This invention relates to a means and a method for inserting absorbent cartridges into the vagina.

BACKGROUND OF THE INVENTION

Various means and mehods have been used for inserting absorbent cartridges into the vagina, however many of the means and methods used for this purpose have created discomfort particularly during the insertion of the absorbent cartridge container into the vagina.

Such discomfort has been occasioned by the usual substantially abrupt sharp edge open end structure of the absorbent cartridge container. These sharp peripheral edges around the open ends of the containers, from which the absorbent cartridge is usually ejected creates concentrated pressure on the wall tissues of the vagina. The foregoing occurs to the fact that the walls of the vagina must be forced apart by the cartridge container and the leading portion or open end portion of the container thus creating difficulty for the tissues of the vagina walls during relative movement thereof with respect to the container as it is forced into the vagina.

SUMMARY OF THE INVENTION

This means and methods of the present invention for inserting absorbent cartridges into the vagina, comprise a novel absorbent cartridge container having a smoothly tapered peripheral portion at the open end terminus of said container. Accordingly the peripherally tapered open end structure of the container may be thrust foremost into the vagina for smoothly spreading apart the adjacent walls of the vagina such that the tapered open end of the container creates a nominal amount of concentrated pressure on the vaginal wall tissues during the insertion of the container into the vagina. Additionally the invention comprises a method whereby an absorbent cartridge may be contained in a thermal setting plastic container subject to the forming of a smooth, converging tapered structure surrounding the cartridge ejecting end of the container all of which greatly facilitates the production of the containers following the assembly of the absorbent cartridge thereinto.

Accordingly it is an object of the present invention to provide a means and method for insertion of absorbent cartridges into the vagina which will greatly contribute to the comfort of a person into the vagina of which an absorbent cartridge is being inserted.

Another object of the invention is to provide a means and method for inserting absorbent cartridges into the vagina which is very simple and economical, in proportion to the comfort afforded to the person using the means and method of the invention.

Further objects and advantages of the invention may be apparent from the following specification appended claims and accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is perspective view of a means for inserting absorbent cartridges into the vagina, in accordance with the present invention, and illustrating by arrows and broken lines, the relative movements of the absorbent cartridge and the cartridge container during the operation of ejecting the absorbent cartridge from the container and into the vagina;

FIG. 2 is a fragmentary sectional view of an open end of an absorbent cartridge container of the invention; said open end being the one from which the cartridge is ejected from the container into the vagina;

FIG. 3 is sectional view of the container and absorbent cartridge of the invention similar to that shown in FIG. 2 and further showing a die adapted to form a tapered peripheral portion of the container adjacent to and terminating at the open end from which the absorbent cartridge may be ejected;

FIG. 4 is fragmentary, side, elevational view of the container after it has been formed as shown in FIG. 3 of the drawings;

FIG. 5 is a diagrammatic view showing a prior art absorbent container relative to the walls of a vagina during insertion of the container into the vagina; and

FIG. 6 is a view similar to FIG. 5 but showing the present invention with its smooth, tapered, open-end container disposed smoothly spreading the vaginal walls apart during the insertion of the absorbent cartridge container into the vagina.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

As shown in FIG. 1 of the drawings the invention comprises an absorbent cartridge container **10** having an absorbent compressible cartridge **12** therein. The container **10** is provided with a first open end **14**, and a second open end **16**. The first open end **14** is adapted to be inserted foremost into the vagina and the compressible absorbent cartridge **12** is adapted to be ejected through the first open end **14**, into the vagina while a plunger **18** in the second open end **16** serves as an abutment to eject the compressible cartridge **12** from the first open end **14** during movement of the container **10** in the direcstion of an arrow A thus retracting the container **10** from the vagina while the plunger **18** acts as an abutment to eject said compressible absorbent cartridge **12** from the container **10**.

The container **10** in accordance with the present invention, is provided with an externally tapered peripheral portion **20** which converges inwardly toward said first open end **14** and terminates at said first open end. The generally converging, tapered peripheral portion **20**, as shown best in FIGS. 4 and 6 of the drawings, comprises a novel feature of the invention as will be hereinafter described in detail.

During the production of the container **10**, the absorbent cartridge **12** may be inserted therein preliminary to or after the forming of the tapered portion **20**.

As shown in FIG. 2 the container **10** may be of thermal setting plastic and initially provided with a slightly diametrically flared portion **22** in order to facilitate the insertion of the cartridge **12** into the container **10**. Subsequently, the first open end **14** may be engaged in a converging recess **24** of a heated die **26**, which will cause thermal formation of the tapered portion **20** so as to provide a converging thermally set structure having

a smooth radius portion **26** in conformance with a curved hemispherical recess portion **28** of the die **26**. This die **26** is heated so that the thermal setting plastic may readily flow into the smooth radius shape which generally is tapered and converging toward the first open end; **14** of the container **10**.

In containers of the prior art, such as a container designated **30** in FIG. 5 sharp peripheral edge portions **32** tend to create a concentration of pressure against opposed vaginal walls **34** and **36** during insertion of the container **30** into the vagina.

By contrast the smooth, tapered, radius portion **20** of the container **10** of the invention provides a substantial engagement area **38** around the foremost end of the container **10** which is being inserted between the opposed walls **34** and **36** of the vagina so as to create a minimum of concentrated pressure on said walls **34** and **36**. Thus insertion of the container **10** into the vagina is accompanied by smooth, comfortable spreading of the walls **34** and **36** apart so as to receive the container **10** preliminary to the ejection of the compressible absorbent cartridge **12** from the container **10** as hereinebefore described.

It will be appreciated by those skilled in the art that the forming of the converging, tapered portion **20** may tend to provide a sight restriction for the ejection of the absorbent cartridge **12** from the first open end **14** of the container **10**, however, the cartridge **12** according to the present invention is slightly compressible and the plastic material of the container **10** has a very low coefficient of friction which permits relative sliding and compression of the absorbent cartridge **12** slightly to compress as it passes outwardly through the open end **14** of the container while it is withdrawn from the vagina in a direction of the arrow A as indicated in FIG. 1 and as hereinbefore described.

In accordance with the foregoing, the method of the invention comprises the forming of the converging tapered portion **20** to a reduced peripheral diameter at the open end of the container at which the tapered portion terminates. The method of the invention also comprises the insertion of this tapered portion into the vagina for smooth spreading of the vaginal walls apart to receive the container. Further, the method of the invention comprises the forming of the tapered portion of the container at a terminal open end with the compressible cartridge in the container and subsequently ejecting the compressible cartridge through the converging or tapered open end of the container during which time the cartridge is slightly occasioned by its ejection from the container.

It will be obvious to those skilled in the art that various modifications of the present invention may be resorted to in a manner limited only by a just interpretation of the following claims.

I claim:

1. In a means for inserting absorbent cartridges into the vagina the combination of: an elongated, hollow, cylindrical cartridge container; a compressible absorbent cartridge therein; said container having a first open end from which said cartridge may be ejected; said container having a second open end; an ejector plunger extending into said second open end and adapted to engage said cartridge for ejecting it outwardly through said first open end of said container; said container having a converging peripheral portion terminating at said first open end; said peripheral portion converging toward said first open end to provide a generally longitudinally tapered structure around said first open end adapted to facilitate insertion of said container into the vagina.

2. The invention, as defined in claim **1**, wherein: said compressible, absorbent cartridge is readily compressibly ejectable through said first open end.

3. The invention, as defined in claim **1**, wherein: said container is of thermal setting plastic material, said converging peripheral portion being thermally set structure.

4. A method of producing a means for inserting an absorbent cartridge into the vagina consisting of; first producing a hollow, elongated, cylindrical container having a first open end; then forcing a compressible absorbent cartridge in said container through said first open end; and then forming the peripheral portion of said container at said open end into a tapered structure generally converging toward said first open end to facilitate insertion of said container into the vagina.

5. A method of inserting an absorbent container into the vagina consisting in preparing an elongated, hollow, tubular, absorbent cartridge containing member with an open end of externally tapered shape then slidably inserting said tapered end into the vagina such that the tapered end portions smoothly spread the wall surfaces of the vagina apart to facilitate the longitudinal slidable movement of said containing member into the vagina and then ejecting a compressible, absorbent cartridge through said tapered open end of said containing member while the containing member is being withdrawn from the vagina.

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U.S. Cl. X.R.

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