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3,717,149

INJECTOR PACKAGE FOR CATAMENIAL TAMPON

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FIG. 1

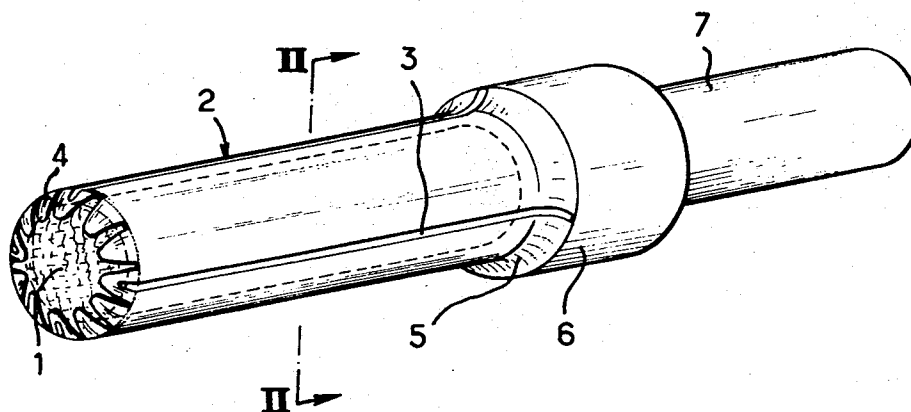
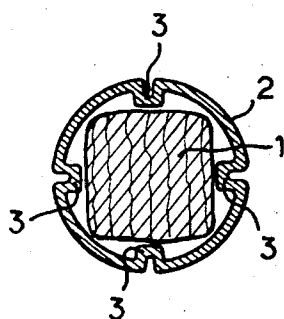


FIG. 2



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3,717,149 INJECTOR PACKAGE FOR CATAMENIAL TAMPON

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7 Claims

ABSTRACT OF THE DISCLOSURE

Injector for holding a catamenial tampon consists of a cylinder of flexible material having a plurality of inwardly projecting axial folds, a piston at one end, and a plurality of inwardly projecting fingers at the other.

SUMMARY OF THE INVENTION

It is well known that catamenial tampons for feminine hygiene are conventionally produced in the form of cylindrical packs of fibrous cloth, which have been substantially compressed. These cylindrical packs are designed to increase substantially in volume when brought into contact with a moist environment.

The fibrous cloth, when placed in position, absorbs fluids by increasing in volume, thus holding itself in place.

The fact that it is highly compressed has the advantage of permitting the absorbent pack to be more easily placed in position, but it is preferable, in order to increase the ease with which this may be done, to locate the pack inside an injector consisting of a cylindrical member holding the pack. This cylindrical member is provided at one end with a piston by means of which the absorbent pack may be pushed out of the cylindrical member and into position.

If very highly compressed absorbent packs are used inside such injectors, the absorbent material tends to expand during storage because it absorbs humidity from the air. As a consequence the user can no longer eject the absorbent pack from the cylindrical member containing it because the absorbent pack has swollen so large that the piston cannot eject it.

It has also been found that the free end of the cylindrical injector in which the absorbent pack is enclosed, because of its relatively sharp edge, may have an irritating effect on the mucous membranes with which it is brought into contact.

It is the purpose of the present invention to avoid these disadvantages, while retaining the advantage of using an injector to position the absorbent pack.

It is accordingly an object of the present invention to provide, as a new article of manufacture, an injector for an absorbent pack in the form of a catamenial tampon for feminine hygiene, which injector comprises a substantially cylindrical member holding the pack and a piston which is slidable in said cylindrical member to eject the pack. This device is essentially characterized by the fact that the substantially cylindrical member, which is made of a flexible material, comprises at least one axial fold extending the full length of the wall of the cylindrical member, the free end of said cylindrical member being provided with flexible fingers projecting inwardly toward the axis of that member.

In a preferred embodiment of the invention, the cylindrical member holding the compressed absorbent pack is provided with four folds defining grooves which are circumferentially distributed in at regular intervals. The cylindrical member is made of a flexible plastic material such as polyethylene. The absorbent pack, when initially

positioned in the cylindrical member, is gripped between the bottoms of the folds in the walls of the cylindrical member.

In a preferred embodiment of the invention, the end of the injector provided with flexible fingers, and the corresponding end of the absorbent pack, are coated with a lubricant, which is preferably soluble in water. Suitable lubricants for this purpose include certain polyvinyl alcohols, and the presence of the lubricant facilitates the positioning of the injector and the introduction of the absorbent pack into its position of use. Moreover, the presence of this lubricant at the free end of the injector somewhat diminishes the absorption of humidity by the absorbent pack during storage.

In order that the invention may be better understood, a preferred embodiment thereof will now be described, purely by way of illustration and example, with reference to the accompanying drawing, on which:

FIG. 1 is a perspective view showing an injector according to the invention containing an absorbent pack; and

FIG. 2 is a sectional view taken transversely with respect to the axis of the injector shown in FIG. 1.

Referring now to the drawings, it will be seen that reference numeral 1 indicates a compressed absorbent pack of the conventional type.

The pack 1 has a substantially square section, 12 mm. on a side. It has a length of 5 cm. and contains 3–5 grams of absorbent fibrous material.

The pack 1 is positioned inside a cylindrical member 2. The wall of the member 2 is formed with four folds 3 which appear from the outside as grooves in the wall of the member 2. The folds 3 are parallel to the axis of the member 2 and are spaced at 90° intervals about the periphery thereof. They are about 2 mm. deep. The outer wall of the member 2 is made of flexible polyethylene and is about 0.7 mm. thick. The distance through the inside of the member 2 between two opposite grooves 3 is 12 mm. The external diameter of the member 2 is about 17.5 mm.

The end of the member 2 from which the absorbent pack 1 is ejected comprises 12 fingers 4 which are bent slightly inward toward the axis of the member 2. The opening between the free ends of the fingers 4 has a diameter of about 10 mm.

The end of the member 2 opposite to the one carrying the fingers 4 is provided with an enlarged rim 5 which connects the member 2 to a sleeve 6 inside which the rod 7, which acts as a piston, is slidable. The sleeve 6 and the rod 7 are also made of polyethylene.

The rod 7 is adapted to penetrate the member 2 and is long enough to completely eject the pack 1.

A coating of lubricant is provided on the fingers 4 of the cylindrical member 2 and on the corresponding end of the pack 1. This lubricant is preferably soluble in water and may consist, for example, of a layer of certain polyvinyl alcohols. At the end near the sleeve 6 the pack 1 is provided with a thread adapted to permit the extraction of the absorbent material after use.

It will be seen that the apparatus according to the invention has substantial advantages over comparable devices heretofore known. In the first place, the end which comes in contact with the mucous membranes at the moment of use has no sharp edge, thus avoiding any risk of irritation. In the second place the presence of a lubricant at the end of the injector and at the corresponding end of the absorbent pack facilitates its introduction and positioning. In the third place, if the absorbent pack absorbs a little humidity in the course of storage, and thereby increases its dimensions, the presence of the folds 3 in the wall of the cylindrical member 2 permits the inner

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diameter of that member to increase so that the absorbent pack does not become jammed inside the member holding it. Finally, it should be noted that the presence of the lubricant at the free end of the injector and at the corresponding end of the absorbent pack makes it possible to decrease, to a certain extent, the absorption of humidity by the absorbent pack during storage.

It will of course be appreciated that the embodiment which has just been described has been given purely by way of example, and may be modified as to detail without thereby departing from the basic principles of the invention, as defined by the following claims.

What is claimed is:

1. A pack in the form of an injector for holding an absorbent catamenial tampon, said injector comprising an elongated substantially cylindrical member encircling said tampon and a piston extending into one end of said cylindrical member, said piston being adapted to slide in said cylindrical member and thereby eject said tampon, said cylindrical member being made of a flexible material and formed with at least one longitudinally extending inwardly projecting fold in the wall thereof which extends substantially the full length of that portion of said cylindrical member encircling said tampon, renders said portion radially expansible in response to internal pressure, and separates at least part of the outer surface of said tampon from the inner surface of the cylindrical member to form a space therebetween, the end of said cylindrical member remote from the end into which said piston extends being formed with a plurality of inwardly projecting flexible fingers.

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2. Pack as claimed in claim 1 in which said cylindrical member is formed with four folds extending the full length of said member and defining four grooves which are regularly distributed about the periphery of said cylindrical member.

3. Pack as claimed in claim 1 in which the cylindrical member consists of a plastic material.

4. Pack as claimed in claim 1 in which the absorbent tampon, when initially positioned in the cylindrical member, is gripped between the bottoms of the folds in the wall of the cylindrical member.

5. Pack as claimed in claim 1 in which the end of the injector carrying the flexible fingers and the corresponding end of the compressed absorbent tampon are coated with a lubricant.

6. Pack as claimed in claim 5 in which said lubricant is soluble in water.

7. Pack as claimed in claim 6 in which said lubricant is a polyvinyl alcohol.

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