

Sept. 7, 1943.

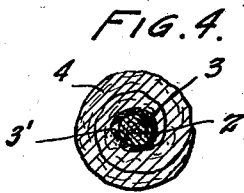
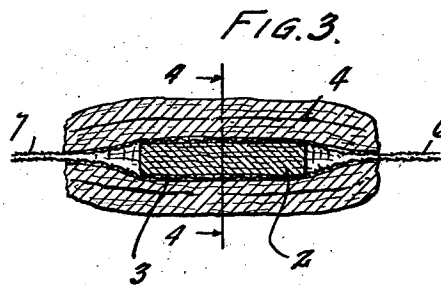
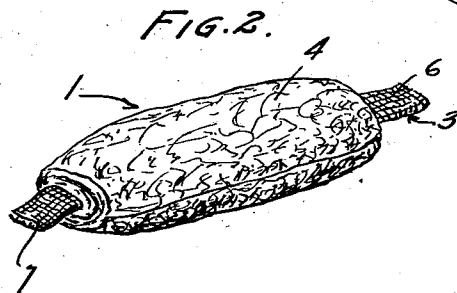
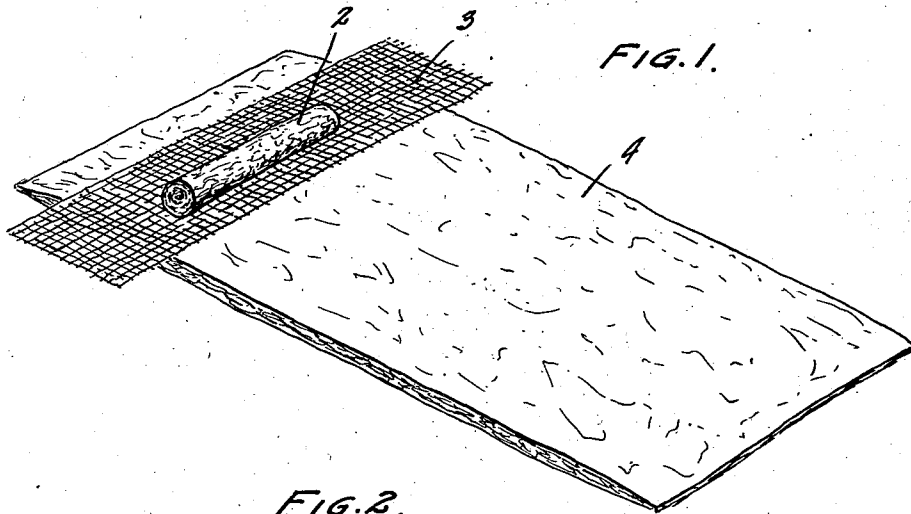
F. W. FINKS

2,328,795

CATAMENIAL DEVICE

Filed June 19, 1940

2 Sheets-Sheet 1



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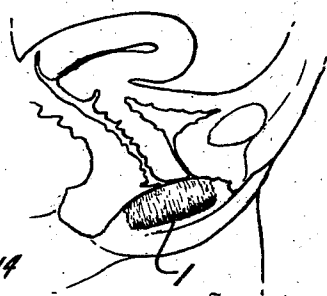
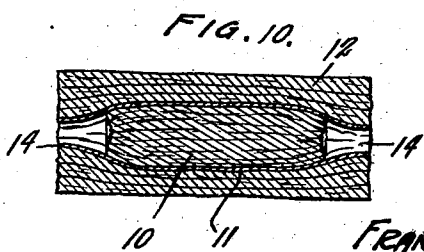
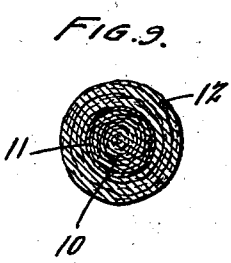
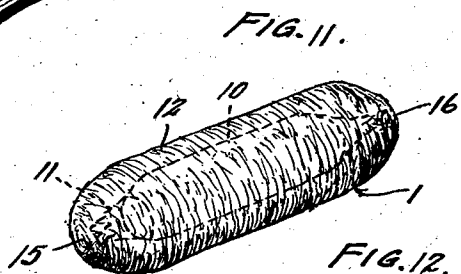
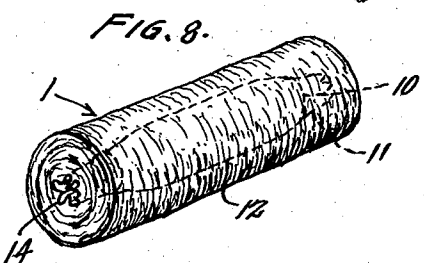
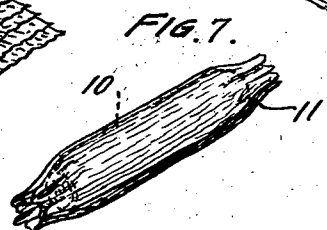
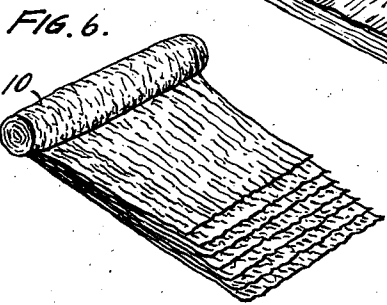
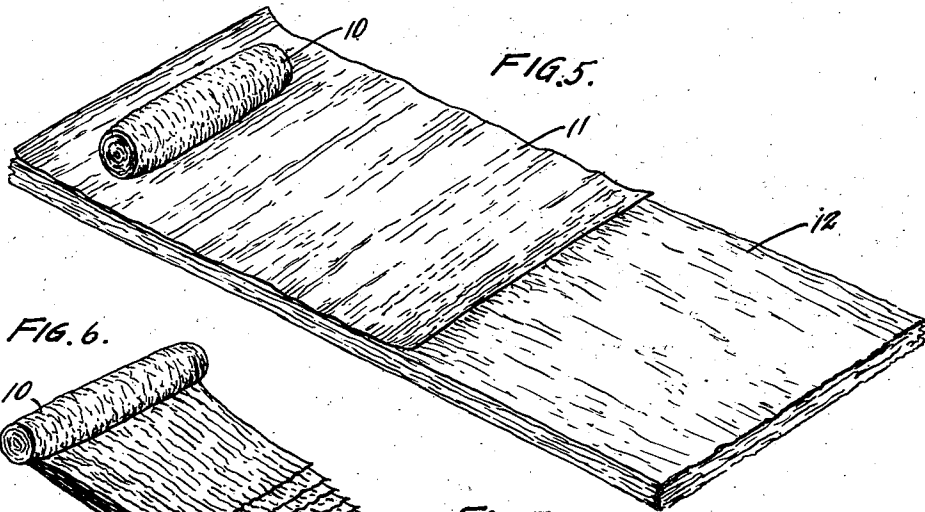
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CATAMENIAL DEVICE

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2 Sheets—Sheet 2



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UNITED STATES PATENT OFFICE

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CATAMENIAL DEVICE

Frances W. Finks, Arlington, Va.

Application June 19, 1940, Serial No. 341,373

4 Claims. (Cl. 128-284)

This invention relates to a sanitary device, and more especially to a device to be used for catamenial purposes. It is applied horizontally in the vestibule of the female person for absorbing liquid secretions, normally during the period of menstruation, but with variation in size, at any other time if desired or required.

This application is a continuation-in-part of my co-pending application Serial No. 185,961, filed January 20, 1938.

The devices now on the market, with the exception of the standard old fashioned napkin, are inserted in a vertical position into the vagina and extend all the way to the cervix. They have a low safety factor and, moreover, their use may cause irritation, injury, and sepsis. Previous external appliances such as the standard old-fashioned napkin require the use of belts, girdles, fasteners, etc. It should be noted that no portion of the article represented by the present invention is inserted into the vagina and yet it is securely held in place as tests have shown.

One of the objects of this invention is to avoid in an entirely new way the above-mentioned disadvantages of the prior art.

Another object of this invention is to provide a device which is constructed in such a manner that on insertion it readily adjusts itself to and within the natural folds of the vestibule so as to permit it to assume a horizontal position against the introitus when applied in a standing position, in such a manner that the center portion (lengthwise) of such article containing the core is pressed well against the mouth of the vagina (Fig. 12).

In general, this invention is novel and different than those articles previously used for similar absorbent purposes. It has a different construction and being used horizontally in the vestibule has a different application. Besides overcoming the disadvantages and even danger in existing devices for similar purposes, this invention possesses more absorbent qualities, is retained in place more readily and effectively, is more compact and comfortable and is less cumbersome than other devices.

This device comprises an absorbent and expandible inner member, a permeable intermediate member for normally maintaining the inner member in a compact condition, and an uncompressed or lightly compressed outer layer of absorbent material. The intermediate layer may be omitted, in which case the outer layer would be rolled more tightly about the core.

In assembling the device, the core may be

formed of a single layer of material or a plurality of superposed sheets. Sufficient compactness is provided either by tightly rolling the material or subjecting it to additional external pressure.

The intermediate layer is wound around the core and may be made of any suitable material which is permeable and, while sufficiently inflexible to prevent the core from expanding before it is used, is sufficiently responsive to permit expansion of the core after it has absorbed moisture. In the claims the word "fabric" is used to denote materials having these properties although they may not necessarily be woven.

In one form of the invention, this layer is of sufficient length to extend beyond the outer layer and form a means for readily grasping the assembled device for insertion or removal from the operative position.

The outer layer is made of a permeable absorbent material which is wound around the intermediate layer. The finished device may be made in either a cylindrical or flattened form. The completed article is usually approximately two and one-half inches in length and seven-eighth inch in diameter, but it may be made in different sizes to meet every situation.

The device is placed, while in the standing position, in the vestibule between the labia minora in a horizontal position against the introitus or mouth of the vagina and is held in place by the natural pressure of the labia minora and majora.

In this position moisture soon penetrates the outer layer and intermediate layer and is immediately directed to the highly absorbent compressed or tightly rolled core which expands and causes the device to fit snugly against the folds of the labiae. Under these conditions the core is capable of absorbing and retaining an unusual quantity of liquid. There is also a certain amount of capillary attraction involved to assist in holding the article in place, without the undesirable feature of drawing the cotton fibers to the walls of the vestibule because the cotton of which the outer layer is composed is thread-like and in rolled form. In addition, the expansion of the normally collapsed vagina, due to the menstrual flow, creates a partial vacuum which effects, in combination with the pressure of the outer atmosphere, a suction above the device, thus tending to secure it in place.

In this connection it again should be noted that no portion of my device is inserted into the vagina and yet it is securely held in place by the

combination of the factors heretofore described. In this way the previously mentioned disadvantages of the prior art are avoided.

In the drawings:

Figure 1 is a perspective view of the elements of one form of the device placed in position and ready for folding.

Figure 2 is a top perspective view of the device shown in Figure 1 in folded position.

Figure 3 is a longitudinal cross-sectional view of the device shown in Figure 2.

Figure 4 is a cross-sectional view taken along line 4-4 of Figure 3, looking in the direction of the arrows.

Figure 5 is a perspective view of the elements of a second form of the device placed in position and ready for folding.

Figure 6 is a perspective view of the core shown in Figure 5 in a partly rolled position.

Figure 7 is a top perspective view of a core and intermediate layer in folded position.

Figure 8 is a top perspective view of the device shown in Figure 5 in completely folded position.

Figure 9 is a cross-sectional view of the device shown in Figure 8.

Figure 10 is a longitudinal, cross-sectional view of the device shown in Figure 8.

Figure 11 is a top perspective view of another form of this invention disclosing a device with tapered ends.

Figure 12 is an anatomical section of the female body in standing position and shows the device in proper horizontal position against the mouth of the vagina within the vestibule.

As shown in Figures 1 through 4, which is one form of this invention, the core consists of highly absorbent cotton, cellulosic material, or other equally absorbent material. If cotton is used as the core, it is compressed when in a dry state, thus making it capable of greater absorbing power when penetrated by liquid. In the use of absorbent cellulosic material, however, the core may be produced by a rolling process rather than compression, which process does not seal the pores of the fibrous material, but instead produces the same desired effect—a highly absorbent element in compact form. The core is designated by numeral 2.

The core may be approximately $1\frac{1}{2}$ inches in length and $\frac{1}{2}$ inch in diameter, having been reduced from larger proportions. The core is enclosed or rolled, as indicated by Figures 1 through 4, in gauze 3, or other suitable material which may be about $3\frac{1}{2}$ inches long and of such width as to surround the core, the edges overlapping, thus preventing expansion of the compressed core prior to the introduction of moisture from the body cavity.

Both the core 2 and the permeable layer 3 are adapted to be spirally wrapped in a piece of other absorbent and permeable material designated as numeral 4, such as a layer of absorbent cotton. This layer is of such a width as to project beyond the ends of the core 2 but at the same time to permit about one-half inch of the gauze or other suitable material 3 to protrude at either side if desired.

As best shown in Figure 2, the core 2 and the gauze 3 (or other suitable material) are wrapped in the absorbent layer 4 to form the device. In the finished article, the absorbent layer 4 entirely surrounds the intermediate layer 3 except for the previously mentioned edges which may, if desired, protrude to form tabs 6 and 7. The free edge of the material 4 may be tapered to a thin

edge, as shown in the drawings, so that a smooth union is made with the layer below.

A second form of my invention is shown in Figures 5 through 10 and is the preferred form. While the core in this form of the invention may be compressed absorbent cotton or other suitable material as described in connection with Figures 1 to 4, the preference is cellulosic material or comparable absorbent material consisting of superposed sheets, which have been tightly rolled into cylindrical form as designated by numeral 10, Figure 6.

The intermediate layer may be gauze or other permeable material, but in the preferred form a sheet of cellulosic material 11 which is expansible when moistened is employed.

As shown in Figure 5, the outer layer 12, which is composed of a layer of pure absorbent cotton or other suitable material, is of the same width as the intermediate layer 11 and both layers enclose the extremities of the core 10 when in a rolled position as shown at 14. Moreover, the outer layer of absorbent cotton 12 is of sufficient length to completely enfold the core 10 and intermediate layer 11 at least one and one-half times.

In the form of the invention shown in Figure 11, the extremities of the outer layer 12 are tapered to form the rounded ends shown at 15 and 16.

It will be observed that the special construction of my device has very definite purposes. The soft, pliable outer wrapping of pure absorbent cotton or other suitable material readily lends itself to the irregular inner walls of the cavity into which it is inserted and absorbs the menstrual flow or other secretions entering the cavity. At the same time, however, there is enough of the natural fat left in the cotton to prevent an undue drying effect on the cavity if worn for an indefinite period of time, for purposes other than menstruation. The intermediate layer of absorbent material separates the tightly rolled, or compressed, inner core from the soft outer wrapping, and keeps the core compact while in its dry condition.

The highly absorbent core is especially designed, being shorter in length than the full length of the article, to concentrate liquid into itself for retention until such time as it is necessary to change the article. The ends of the article may be cut short or slightly tapered as desired. The shorter core, while the liquid is concentrated therein, permits the ends of the outer wrapping to come together (with the natural pressure of the labiae folding over it), thus sealing the ends over the core and preventing the escape of liquid.

If it is desired, the intermediate layer can be omitted. If this form of device is used, it is preferable to increase the length of the absorbent outer layer before it is rolled around the core. Moreover, the outer layer should then be rolled more tightly around the core so as to prevent the core from expanding before it is placed in use. In this as well as the other forms of the invention, the core is completely enclosed by the outer layer.

In this invention, all the materials used should be sterilized and may be medicated, deodorized, even scented, and treated in any manner, if necessary, to make it more effective for the desired purposes.

The novelty of this invention and its new ap-

plication are primarily due to the combination of the materials used and to its construction.

While, for purposes of illustration, several forms of the invention have been shown, it is obvious that the parts described in Figures 1 to 4 may be interchanged with parts described in Figures 5 to 10, and, therefore, it is not intended that the invention be limited to the specific forms shown. For example, if desired, the laminated core 10 shown in one form of the invention can be combined with the gauze 3 shown in Figure 1. Moreover, if desired, the gauze 3 or other suitable material can be used without the tabs 6 and 7.

In addition, it is not intended that the invention be limited to the specific materials and detail of construction disclosed, as it is obvious that other materials, similarly assembled and having the same general properties and purposes as those enumerated, could be substituted without invention.

It is, therefore, intended that this invention be only limited by the prior art and the scope of the appended claims.

I claim:

1. A device for catamenial and continuous use comprising a sheet of absorbent material disposed in tight spiral formation to provide a compact substantially cylindrical core, said core having the property of expanding when moistened, an intermediate thin covering of permeable material for retaining the compact condition of the core and of sufficient elasticity to permit expansion of the core due to absorption of moisture, and an outer covering of loosely packed absorbent material, said device having a substantially cylindrical formation of a length that will permit the device to be placed horizontally, while the person is standing, in the female vestibule between the labiae minora against the entroitus, and of a diameter that will enable it to be retained in position.

2. A device for catamenial and continuous use comprising a plurality of superimposed sheets of thin absorbent material disposed in tight spiral formation to provide a compact substantially cylindrical core, said core having the property of

expanding when moistened, an intermediate thin covering of permeable material for retaining the compact condition of the core and of sufficient elasticity to permit expansion of the core due to absorption of moisture and an outer covering of loosely packed absorbent material, said intermediate and outer covering extending spirally about the core and said device having a substantially cylindrical formation of a length that will permit the device to be placed horizontally, while the person is standing, in the female vestibule between the labiae minora against the entroitus, and of a diameter which will enable it to be retained in position after insertion.

3. A device for catamenial and continuous use comprising a sheet of highly absorbent cellulosic material disposed in tight spiral formation to provide a compact substantially cylindrical core, said core having the property of expanding when moistened, and an outer covering of loosely packed absorbent material which retains the core in compact condition, but is of sufficient elasticity to permit expansion of the core due to absorption of moisture, said device having a substantially cylindrical formation of a length that will permit the device to be positioned horizontally, while a person is standing, in the female vestibule between the labiae minora against the entroitus, and of a diameter that will enable it to be retained in position.

4. A device for catamenial and continuous use comprising a core of compressed and highly absorbent cellulosic material, said core having the property of expanding when moistened, an intermediate thin covering of permeable material for retaining the core in compressed condition, and of sufficient elasticity to permit expansion of the core due to absorption of moisture, and an outer covering of loosely packed absorbent material, said device having a substantially cylindrical formation of a length that will permit the device to be positioned horizontally, while the person is standing, in the female vestibule between the labiae minora against the entroitus, and of a diameter that will enable it to be retained in position.

FRANCES W. FINKS.