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CATAMENIAL APPLIANCE
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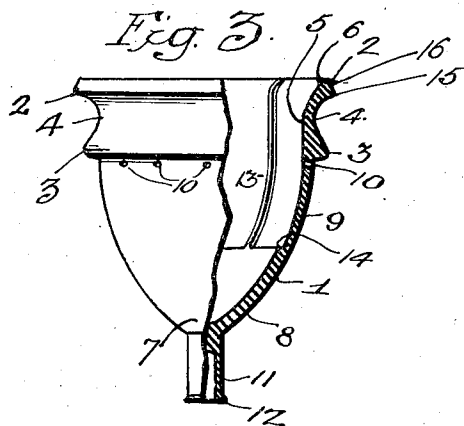
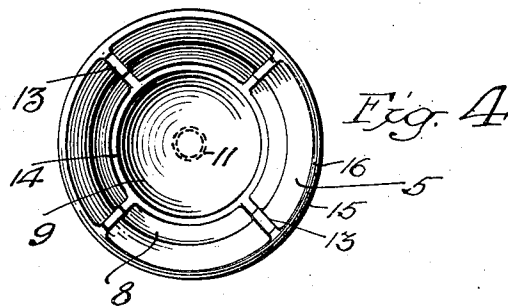
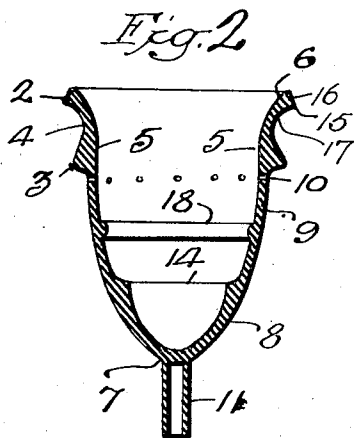
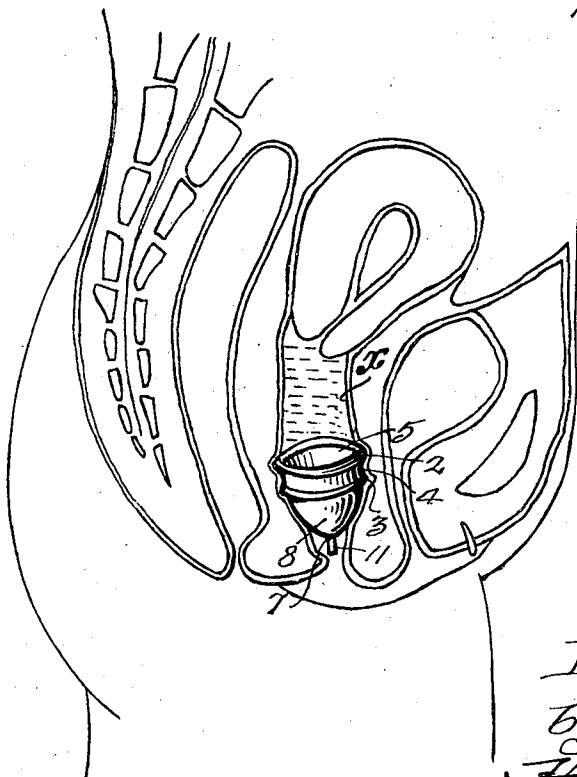


Fig. 1.



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CATAMENIAL APPLIANCE

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8 Claims. (Cl. 128-285)

This invention relates to sanitary catamenial appliances, and has for its object the provision of a simple, inexpensive and highly efficient device designed to fit snugly within the vulvo-uterine canal, between the uterus and the vulva, and to embrace the membrane so effectively as to preclude all possibilities of staining delicate clothing by seepage of menstrual or other vaginal fluids into the vulva region of the vagina, during normal or strenuous physical activities of the user, without causing uncomfortableness or consciousness of its presence.

Another object of the invention is to construct the device in a manner to be self-supporting, thereby obviating the necessity for providing any means external of the vagina for supporting the device in its most effective position and thereby permitting thin, light, close-fitting clothing to be worn during the menstrual periods without betrayal such as takes place with the use of the tell-tale straps, belts, pins and buckles commonly employed for supporting catamenial appliances in place and which form ridges and bulges on the otherwise smooth rounded contours of the feminine figure and show on or through thin delicate clothing.

The construction, the mode of application and the manner of functioning of the device will be fully disclosed hereinafter, reference being had to the accompanying drawing, of which:

Fig. 1 diagrammatically illustrates a vertical longitudinal section of the lower portion of a human feminine torso with the device in place;

Figure 2 is a longitudinal sectional view of the preferred form of the device;

Fig. 3 is a similar view of a modified form; and Fig. 4 is a plan view.

The device is composed preferably of pliable vulcanized rubber of sufficient firmness which, while permitting of its being folded about or parallel to its normal longitudinal axis to reduce its lateral dimensions for inserting into the vagina, will, upon its release after being placed in the desired position within the vagina, cause it to unfold into its full cross-sectional form, to engage the walls of vagina and to dilate the membrane in a cross-sectional plane sufficiently to place the inner wall of the device approximately in alignment with the inner surface of the wall of the vagina, whereby any fluid passing down through the vulvo-uterine canal will be trapped and caused to flow into the receptacle disposed below the dilating rim of the device and yet the rubber must be sufficiently pliable to permit the device to change from its normal cross-sectional

contour without collapsing to adapt itself to such changes in the cross-sectional contour of the vagina as normally take place in and during physical activities of the person, whereby the device is comfortable and causes no pronounced consciousness of its presence.

As shown in Fig. 2, the device comprises a lower conical, parabolic or acorn-shaped receptacle 1, which as noted above is composed of firm but pliable rubber, an upper circumventing trap or dilating rim or rib 2 of predetermined contour and diameter, and a lower circumventing rib 3 of corresponding contour but preferably of lesser diameter and between which and the upper rib 2 the wall of the device is concaved, as illustrated at 4, to form what may be termed a suction or holding cavity, crevice, recess, groove or pocket.

The action is such that after the device is placed in position and released in the vagina it inherently assumes its normal cross-sectional contour and causes the dilating rim 2 to press gently but firmly against the membrane which causes the membrane to be distended at the plane of the rim 2. The membrane, due to its inherent tendency to contract, follows the contour of the groove 4 and passes around the lower annular rib 3 into contact with the upper end of the receptacle adjacent the lower side of the rib 3, thus the device is snugly embraced by the wall of the vagina and due to the ribs 2 and 3 and the intervening groove 4 there is an action similar to a snubbing action which stubbornly resists any tendency of the device to move in either direction longitudinally of the vulvo-uterine canal.

When in the active position noted above, the inner wall 5 of the receptacle 1, adjacent the rim 2, is approximately aligned with the inner wall of the vagina, as shown in Fig. 1, whereby any fluid passing down through the vulvo-uterine canal will be trapped by the rim 2 against passage into the lower or vulva region of the vagina and directed by a beveled or receding edge 6 at the inner upper end of the receptacle 1 into said receptacle.

As shown in Figs. 1 and 2, the wall of the receptacle 1, at and adjacent the vertex 7 of the cone or otherwise shaped receptacle, is relatively thicker, as shown at 8, than that portion of the wall adjacent the upper or rimmed end of the receptacle, as shown at 9. The thinning of the upper wall 9 facilitates the folding of the upper or larger diametered portion of the device for inserting purposes and the thicker lower wall portion 8 of smaller diameter and heavier weight,

functions to add longitudinal stability during insertion and due to its heavier weight and inverted dome-shape supplies the initial inherent energy for and starts the opening up of the device to its full cross-sectional form after release, said energy following up into and throughout the thinner upper wall with more or less of a snap action which sets the dilating ribs 2 and 3 in the membrane and creates the suction action in the annular groove 4 which together secure the device in position without the aid of external devices.

The device fits and embraces the vaginal membrane so closely and firmly that if an effort is made to pull the device out of the vagina forcibly a suction or vacuum action is created in the vulvo-uterine canal above the device and in order to relieve this action when it is desired to remove the device, the upper wall 9, adjacent the lower edge of the lower annulus 3, is provided with a series of minute openings 10 which normally are closed by the adherence of the vaginal membrane to the outer surface of the receptacle but which when tension is applied to the vertex 7 of the receptacle are drawn away from the membrane by a slight contraction of the thinner upper wall 9 due to the longitudinal tension applied to the lower end of the receptacle while the upper end is held firmly by the distending rib 2.

In order to remove the device and to provide a substantial gripping surface for the fingers, the lower end of the receptacle is provided with a depending tab 11 which preferably is in the form of a small diametered tube which will permit of its being readily collapsed laterally to provide a broader gripping surface, by pressure exerted by and between, for example, the end of the thumb and the forefinger; and in order to provide a most efficient gripping surface the outer surface of the tubular tab 11 is preferably roughened as by knurling and/or by providing a small rib or series of parallel annular ribs on the tab as shown at 12.

In order to increase the longitudinal stability of the device for inserting purposes, the inner surface 5 of the receptacle 1 may be provided with one or more longitudinally extending ribs 13 extending preferably from the annular shoulder 14, which forms the line of deviation from the thicker lower wall 8 to the thinner upper wall 9, to substantially the plane of the upper dilating rib 2.

In order to increase the snubbing action between the dilating rib 2 and the vaginal wall the lower edge 15 of the annulus 2 may be made relatively sharp, i. e. with a fillet of very small radius and the outer surface 16 of the annulus 2 may be of a frusto-conical nature while the surface 17 of the groove 4 recedes at a relatively steep angle from the edge 15 of the annulus, whereby the membrane will bend sharply about the edge 15 and provide a very pronounced snubbing action.

In order to accentuate the snap action of the thinner wall 9 of the cup and to insure against collapse of said wall between the lowermost of the external ribs 3 adjacent the top or open end of the cup and the upper edge 14 of the thicker wall 8 adjacent the lower or closed end of the cup the thinner wall 9 may be provided with an internal annular rib 18 spaced above the upper edge 14 of the thicker wall 8, as clearly shown in Fig. 2, in which case the height of the thickened wall 8 may be lowered as shown in said illustration.

I claim:

1. A catamenial appliance comprising a flexible cup, a resilient annular rib at the open end thereof and formed integral therewith, and a second annular rib of lesser diameter than the first said rib also integral with the cup and providing an annular depression therebetween as and for the purpose described.

2. A catamenial appliance comprising a flexible cup, a resilient annular rib at the open end thereof and formed integral therewith and provided with a sharply filleted outer edge, and a second annular rib of lesser diameter than the first said rib also integral with the cup and providing an annular depression therebetween as and for the purpose described.

3. A catamenial appliance comprising a flexible cup including a wall adjacent the open end thereof of relatively thin pliable construction of substantially uniform thickness throughout, a wall adjacent the closed end of a relatively heavier pliable construction of substantially uniform thickness throughout, and a dilating annular rib integral with and surrounding the thinner wall adjacent the open end of the cup, as and for the purpose described.

4. A catamenial appliance comprising a flexible cup including a wall adjacent the open end thereof of relatively thin pliable construction, a wall adjacent the closed end of a relatively heavier pliable construction, a resilient dilating annular rib integral with and surrounding the thinner wall adjacent the open end of the cup, and a second resilient annular rib on and integral with the thinner wall in spaced relation to the first said rib with an intervening annular depression therebetween as and for the purpose described.

5. A catamenial appliance comprising a flexible cup including a wall adjacent the open end thereof of relatively thin pliable construction, a wall adjacent the closed end of a relatively heavier pliable construction, a dilating annular rib surrounding the thinner wall adjacent the open end of the cup, a second annular rib on the thinner wall in spaced relation to the first said rib with an intervening annular depression therebetween, and an internal rib on the thinner wall above and in spaced relation to the upper edge of the heavier wall at the lower end of the cup as and for the purpose described.

6. A catamenial appliance comprising a flexible cup including a wall adjacent the open end thereof of relatively thin pliable construction, a wall adjacent the closed end of a relatively heavier pliable construction, a dilating annular rib surrounding the thinner wall adjacent the open end of the cup, and angularly spaced ribs extending longitudinally of the cup along said thinner wall as and for the purpose described.

7. A catamenial appliance comprising a flexible cup including a wall adjacent the open end thereof of relatively thin pliable construction, a wall adjacent the closed end of a relatively heavier pliable construction, a dilating annular rib surrounding the thinner wall adjacent the open end of the cup, a second annular rib on the thinner wall in spaced relation to the first said rib with an intervening annular depression therebetween, and angularly spaced ribs extending longitudinally of the cup along said thinner wall as and for the purpose described.

8. A catamenial appliance comprising a flexible cup of longitudinally tapering construction with a relatively thin wall in the upper portion

adjacent the open end and a relatively heavier wall in the lower portion adjacent the closed end of the cup, a resilient dilating annular rib on and integral with said thin wall and surrounding the upper open end of the cup, and a second resilient annular rib spaced from the first said rib and integral with said thin wall with an annular depression therebetween, and

a tubular appendage depending from and sealed against communication with the interior of the cup at the closed smaller end of the cup, said cup being provided with a series of relief openings adjacent the lower side of the lower rib, as and for the purpose described.

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