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3,073,309

SELF-SUPPORTING SANITARY NAPKIN

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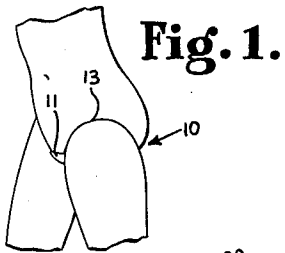


Fig. 1.

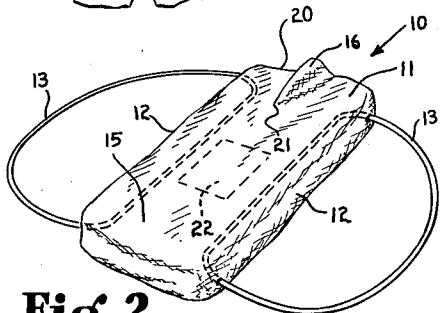


Fig. 2.

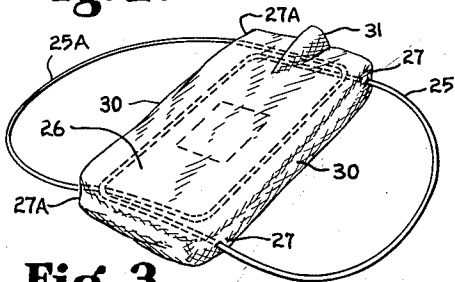


Fig. 3.

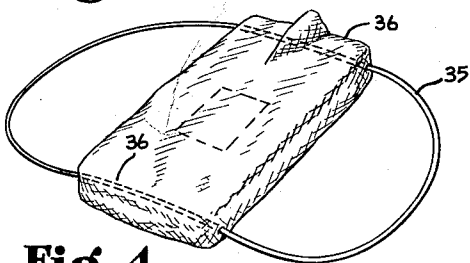


Fig. 4.

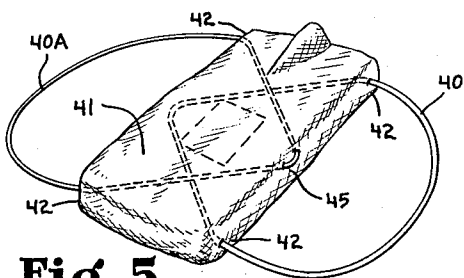


Fig. 5.

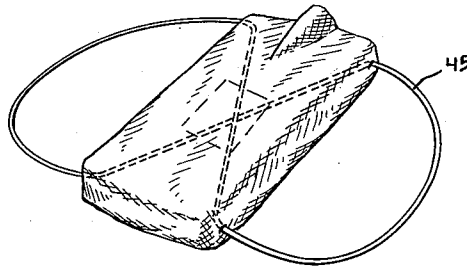


Fig. 6.

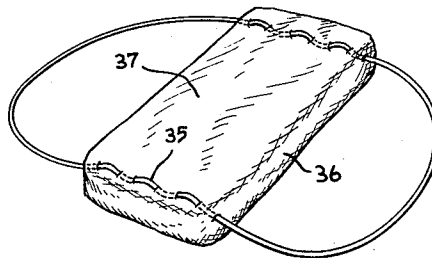


Fig. 7.

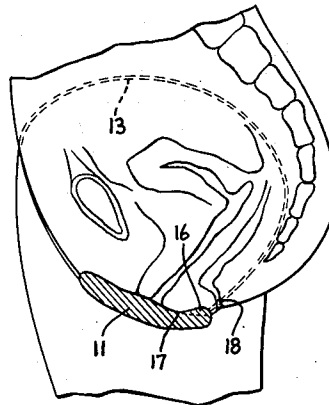


Fig. 8.

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1

3,073,309

SELF-SUPPORTING SANITARY NAPKIN
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The present invention relates to a catamenial appliance and more particularly to an improved sanitary napkin and holder.

Present-day catamenial devices frequently incorporate belts which are difficult to adjust so that they are comfortable in the various positions the body assumes in standing, sitting, jumping, bending, etc. Such belts often cause chafing and irritation of the perineal and intergluteal areas. Also, such sanitary belts, in many cases, tend to allow the sanitary napkin to slide out of its most absorptive position.

Frequently, emergencies occur at such places as movies, restaurants and on week end vacations in that the menses begin at unexpected times. Obviously, it is undesirable to be required to carry the standard sanitary belt at all times. Emergency sanitary napkins are available but for various reasons, have been found to be unsatisfactory in one way or another. Consequently, a primary object of the present invention is to provide an improved sanitary napkin and supporting means which can be readily dispensed by a restroom vending machine.

A further object of the present invention is to provide an improved catamenial appliance.

Still another object of the present invention is to provide an improved holder for use with an sanitary napkin, said holder being sufficiently small and light to be easily package in combination with a sanitary napkin for dispensing by a vending machine.

Still another object of the present invention is to provide an improved holder and sanitary napkin combination, said holder being sufficiently inexpensive that the used napkin and holder can be both be thrown away or disposed of similarly to conventional sanitary napkins.

Still another object of the present invention is to provide a self-supporting sanitary napkin which allows relatively complete freedom of movement with relatively little chafing or irritation of the skin.

Another object of the present invention is to provide a self-supporting sanitary napkin constructed to eliminate irritation and binding between the buttocks.

Related objects and advantages will become apparent as the description proceeds.

In accordance with the present invention, one specific embodiment thereof comprises an elongated, rectangular pad of absorbent material having elastic cord passing therethrough and extending from the opposite longitudinal sides thereof to form loops. The elastic cord is arranged to lead away from each longitudinal side of the pad at the ends of each side and, in other words, at the corners of the pad. The loops are of a suitable size or length so as to be received in stretched relation about the legs and so as to surround each leg at the junction thereof with the torso.

The full nature of the invention will be understood from the accompanying drawings and the following description and claims:

FIG. 1 is a perspective view of a portion of the female body showing a self-supporting napkin of the present invention in proper position.

FIG. 2 is a perspective view of a self-supporting sanitary napkin embodying the present invention.

FIGS. 3-6 are views similar to FIG. 2 of alternative embodiments of the present invention.

FIG. 7 is a perspective view of the self-supporting

2

sanitary napkin of FIG. 4 showing the rearward or outer surface of the napkin and indicating in what manner the stitching of the various illustrated embodiments can be accomplished.

FIG. 8 is a sectional view of the napkin and holder of FIG. 1 showing it in position over the vulvar area.

Referring now to the drawings and more particularly to FIG. 2, there is illustrated a self-supporting sanitary napkin 10 which includes a generally rectangular, somewhat elongated napkin or pad 11 composed, for the most part, of gauze or similar cellulose material conventionally used in sanitary napkins. Passing through the pad and extending from the opposite longitudinal sides 12 thereof is a pair of loops 13 formed of highly stretchable, standard, commercially available, elastic thread or cord. In the particular embodiment illustrated in FIG. 2, the cord of each loop passes through the pad adjacent the longitudinal side 12 which is on the same side of the pad as the particular loop.

Referring now to FIGS. 1 and 8, it should be noted that between the legs, the female thigh is narrowed at the groove between the lateral margin of the labia majora and the proximal portion of the internal femoral region, this groove being called the genito-crural fold. The loops 13 are of a suitable size to be received in stretched relation about the thighs adjacent the junction thereof with the torso. Because of the narrowing of the female form as above mentioned, the elastic loops 13 may be seated securely to encircle the thighs so that the edge of the pad 10 is seated securely in the above mentioned groove and the loops extend through the gluteal fold, and laterally just above the trochanteric region, anteriorly across the subinguinal regions just above the medial termination of the inguinal ligament and again to the pad at the genito-crural groove. When the self-supporting sanitary napkin of the present invention is so received on the female form, it is comfortable and causes little or no skin chafing or irritation.

The pad 11 is stitched on the face 15 thereof to cause a portion of the pad to extend upwardly away from the face 15 and to form an elongated fin-like projection 16. It should be noted that means other than stitching can be used to form the projection 16. This projection extends parallel to the length of the pad forwardly from the rearward end thereof, is located centrally with relation to the width of the pad and has a length approximately equal to the distance between the rectum and the frenulum. This type of projection is more thoroughly described and claimed in my copending application of Catamenial Appliance filed on May 9, 1960, Serial Number 27,737, it being understood that this previous application discloses a somewhat different type of holder and pad for use with such a projection.

The projection 16 bears against the wearer and is seated as shown in FIG. 8 between the frenulum 17 and rectum 18. This projection acts as an indicating device giving confidence to the wearer and assuring her that the napkin is in proper position, yet does not result in the irritation which may result from the conventional tampon or devices extending into the vestibule area between the labia. When the wearer is lying in a horizontal upwardly facing position as in sleep, the projection 16 provides an effective damming action deterring rearward seepage of fluid and preventing soiling of the clothes.

Even though it is preferred that the projection 16 will terminate in the same plane as the posterior end 20 of the pad, it should be understood that the design of the present pad is flexible and the fin-like projection may extend posteriorly beyond the end 20 or may extend slightly anteriorly thereof. A specific embodiment of the present invention would include a fin-like projection 16, the forward end 21 of which begins approximately one and

one-fourth to two inches from the posterior end of the pad, the projection rising from the surface 15 of the pad to a highest level at the posterior end of the projection where it extends approximately one-half to one inch from the surface of the pad. In vertical transverse section, the projection 16 is generally triangular shaped and is slightly wider at its base than at its most distal portion.

The thickness of the particular pad disclosed in FIG. 2 is preferably about one-half to three-fourths of the thickness of a standard sanitary napkin but it should be understood that the pad can be of any desired thickness. The length of the particular pad disclosed in FIG. 2 is preferably from four to six inches. Obviously, this length is quite a bit less than the length of a standard sanitary napkin and this is made possible by the fact that the pad of FIG. 1 has incorporated therein a small liquid absorbable container 22 within which is received a special absorbing material capable of forming a gel with menses. This container may, for example, be formed of folded tissue paper or the like and has received therein, by way of specific example, 5 cc. of a granulated material including 28% gelatin, 17% agar-agar and 55% common sugar by volume and in a simple mechanical mixture forming a random matrix. Because of the fact that this special absorbing material has very high absorptive and retaining powers, the napkin 12 may have a much smaller size and may contain a much smaller amount of cellulose material than conventional napkins and may be easily flushed down a toilet without clogging plumbing.

Various alternative gel-forming mixtures can be used in place of the above described preferred mixture, for example, the sugar mentioned above might be replaced by another carbohydrate or even by a salt such as, for example, sodium chloride. In the special absorbent composition of the present invention, the gel-forming substance or principle is chiefly responsible for the absorption of menstrual fluids, the water soluble carbohydrate being present as an inert non-absorbing substance whose function is to maintain the maximum amount of surface of the gel-forming substance available for the absorption of fluids. For example, when a matrix of gel-forming substance and carbohydrate is formed prior to the incorporation of the mixture into a catamenial device, the more rapid solubility of the carbohydrate component causes it to dissolve out of the preformed matrix, thus continuously exposing fresh absorbing surfaces of the gel-forming component of the matrix.

Referring to FIGS. 3-6, there is disclosed various alternative embodiments of the present invention. In FIG. 3, each elastic cord 25 and 25A extends into the pad 26 at the corners 27 and 27A thereof but extends longitudinally of the pad along a longitudinal edge portion 30 which is opposite to the longitudinal edge portion adjacent which the loop of the particular cord is located. The particular embodiment of FIG. 3 includes a projection 31 similar to the projection 16 as do all of the embodiments of the present invention as disclosed in FIGS. 2-6.

In FIG. 4, the supporting means of the pad is a single length of cord 35 which extends through the pad at the opposite end portions 36 thereof. In the particular embodiment disclosed in FIG. 5, a pair of elastic cords 40 and 40A extend into the pad 41 at the corners of the pad and at the ends 42 of each respective longitudinal edge portion. Each of the elastic cords passes diagonally through the pad and is visible at 45 on the opposite longitudinal side portion from its particular loop. In FIG. 6, an embodiment is disclosed in which the elastic cord 45 has generally the shape of a "figure 8." It should be understood that in each of the embodiments disclosed in FIGS. 2-6, the elastic cord or thread extends from the opposite longitudinal sides of the pad to form loops and also extends from each longitudinal side at the ends thereof or in other words, at the corners of the pad.

Referring to FIG. 7, the particular stitching used in constructing the embodiment of FIG. 4 is illustrated. In this

embodiment, the elastic cord 35 passes into and out of the pad 36 a number of times in order to securely attach the cord to the pad. It should be noted that the cord is located on the face 37 of the pad which is away from the body when the pad is in use. This arrangement eliminates irritation and chafing of the body by the cord.

From the above description, it can be appreciated that the present invention provides an improved supporting means for a sanitary napkin, said supporting means being small, inexpensive and easily packaged whereby it can be dispensed by a vending machine and can be thrown away after use. It can also be appreciated from the above description that the present invention provides an improved self-supporting sanitary napkin which does not include a bulky and irritating sanitary belt extending between the buttocks where it will cause chafing and irritation whereby the napkin of the present invention will be more comfortable in use.

While the invention has been illustrated and described in detail in the drawings and foregoing description, the same is to be considered as illustrative and not restrictive in character, it being understood that only the preferred embodiment has been shown and described and that all changes and modifications that come within the spirit of the invention and the scope of the claims are also desired to be protected. For example, the napkin of the present invention might be modified to eliminate the projection 16 or to eliminate the gel-forming material and the container 22. As a further example, the complete napkin and the projection 16 might contain gel-forming material.

As still a further example, the elastic cord of the present invention might be formed of water soluble material woven in such a way as to provide elasticity. Alternatively, the cord might be formed of interrupted elastic, the interruption being of water soluble paper or string that is easily broken and being located for positioning over the trochanter region.

The invention claimed is:

1. A self-supporting catamenial device comprising a pad of absorbent material, elastic cord secured directly to said pad and forming loops on opposite sides thereof, said loops forming the sole supporting means for the device.
2. A self-supporting catamenial device comprising a pad of absorbent material, elastic cord passing through said pad and extending from the sides thereof to form a pair of loops, said loops being of suitable size to be received in stretched relation about the legs of a woman so as to surround each leg at the juncture thereof with the torso, said loops forming the sole supporting means for the device.
3. A self-supporting catamenial device comprising an elongated rectangular pad of absorbent material, elastic cord passing through said pad and extending from the opposite longitudinal sides thereof to form loops, said elastic cord leading away from each longitudinal side at the ends thereof and at the corners of said pad, said loops being of a suitable size to be received in stretched relation about the legs of a woman with each loop surrounding a respective leg at the junction thereof with the torso, said loops forming the sole supporting means for the device.
4. A self-supporting catamenial device comprising an elongated rectangular pad of absorbent material, elastic cord passing through said pad and extending from the longitudinal sides thereof to form a pair of loops, said loops being of a suitable size to be received in stretched relation about the legs at the junction thereof with the torso, an elongated fin-shaped projection extending upwardly from one face of said napkin, said projection extending generally parallel to the length of the pad and located adjacent one end thereof, and a material contained within said pad and capable of forming a gel with menses, said loops forming the sole supporting means for the device.
5. The catamenial device of claim 4 in which said elastic cord is in two sections each of which forms one of said

5

loops each of which is adjacent a respective longitudinal side of said pad, each of said sections extending through the pad adjacent the longitudinal side thereof which is adjacent the loop formed by said section.

6. The catamenial device of claim 4 in which said elastic cord is in two sections each of which forms one of said loops each of which extends adjacent a respective longitudinal side of said pad, each of said sections extending through the pad adjacent the longitudinal side thereof which is away from the loop formed by said section.

7. The catamenial device of claim 4 in which said elastic cord is in a single closed length which forms both of said loops, said elastic cord extending through both end portions of said elongated pad.

8. The catamenial device of claim 4 in which said elastic cord is in two sections each of which forms one of said loops each of which extends adjacent a longitudinal side

6

of said pad, each of said sections extending diagonally through the pad and passing out of the pad on the longitudinal side thereof which is away from the loop formed by said section.

9. The catamenial device of claim 4 in which said elastic cord is in a single closed length which forms both of said loops, said elastic cord generally defining a figure eight.

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