Jan. 4, 1938. J. L. HUGHES 2,104,423

CATAMENIAL SACK

Filed March 21, 1935 3 Sheets-Sheet 1

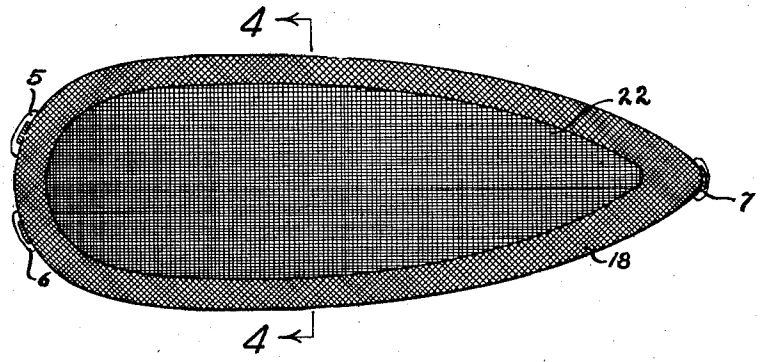


FIG. 1

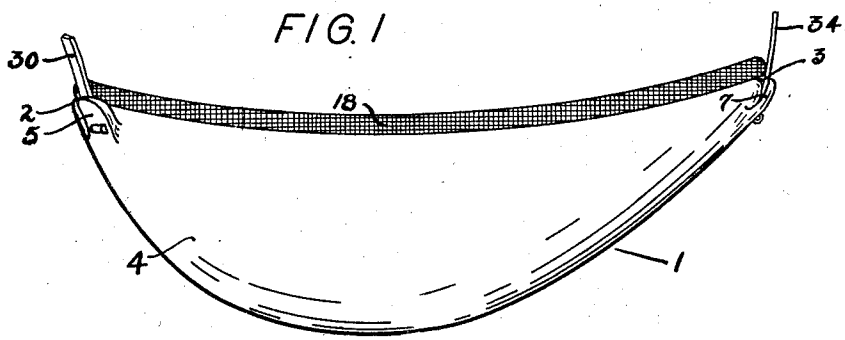


FIG. 2

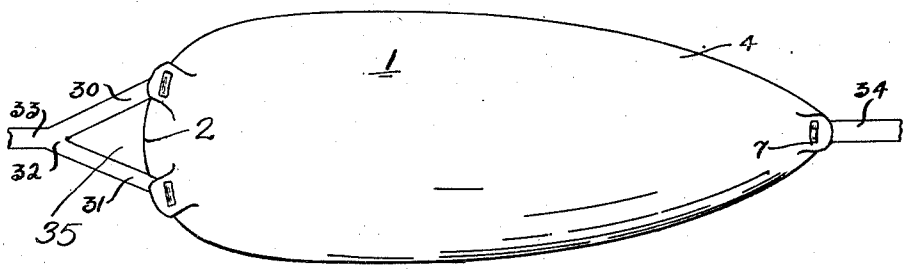


FIG. 3

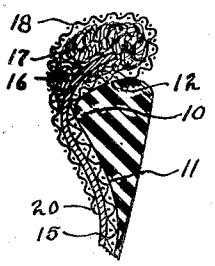


FIG. 5

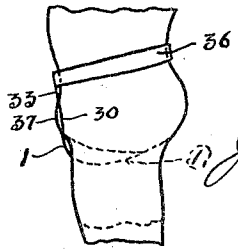


FIG. 10

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CATAMENIAL SACK

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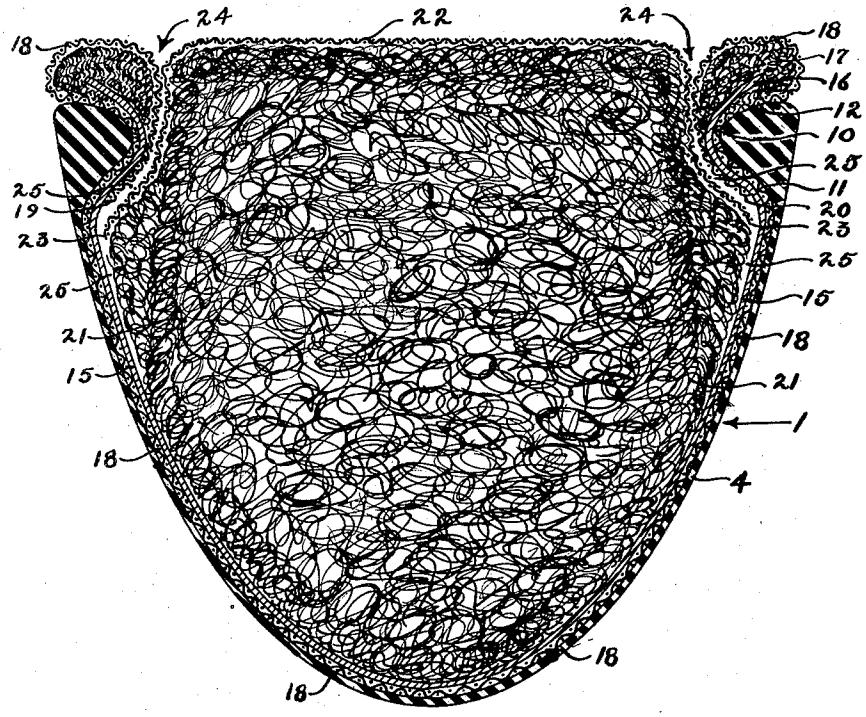


FIG. 4

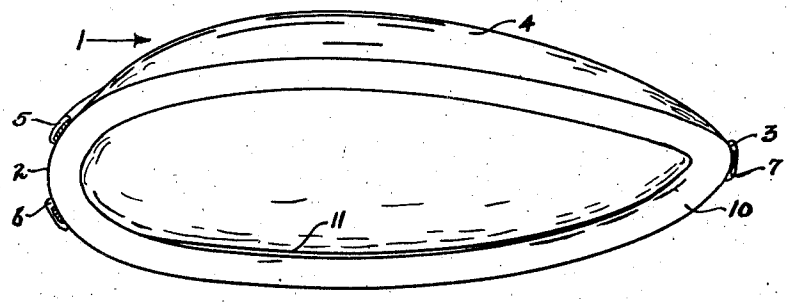


FIG. 6

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CATAMENIAL SACK

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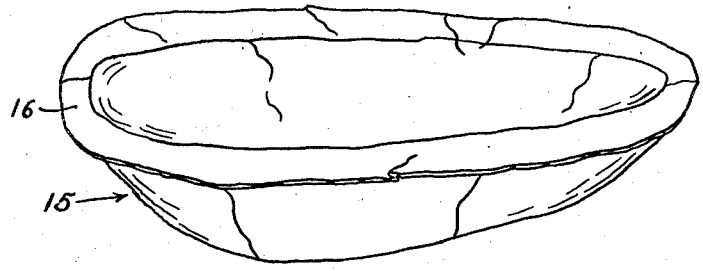


FIG. 7

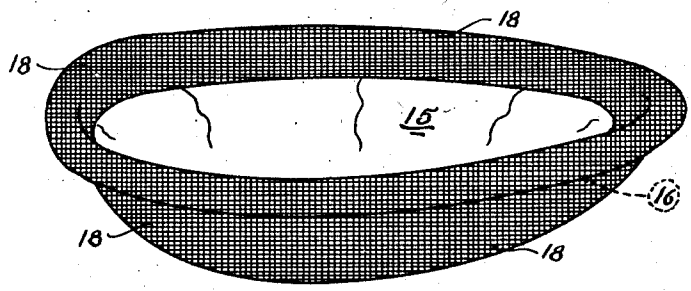


FIG. 8

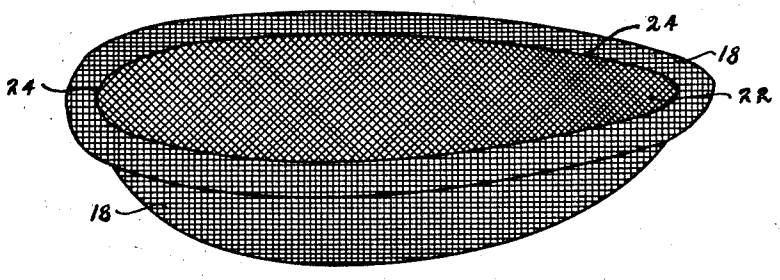


FIG. 9

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Patented Jan. 4, 1938

2,104,423

UNITED STATES PATENT OFFICE

2,104,423

CATAMENIAL SACK

James L. Hughes, Oklahoma City, Okla.

Application March 21, 1935, Serial No. 12,150

5 Claims. (Cl. 128—290)

My invention relates to an improved catamenial sack, cup or pouch, together with a particularly designed removable absorbent filler therefor.

The prime object of the invention is the provision of an article of this nature which is both practical and comfortable to the wearer.

My invention consists substantially of a rubber, rubberized, or moisture-proof sack or pouch, arcuately formed longitudinally at its orifice to fit the pubis arch. The bottom of the sack is also arcuately formed longitudinally but the sack is of greater depth at its forward end than at its rear end. At its orifice, the article is of a width sufficient to completely cover the exterior orifice of the genital canal, yet it is sufficiently narrow at its rear end to lie between the legs without discomfort and without being deformed by action of the legs. The article is of a length sufficient to extend only from an anterior point located just beneath the pelvi-sacral point, or the point of the human body formed by the two pubic bones at the lower anterior point of the abdomen, rearward along the pubic-arch substantially to the posterior ends of the innominate bones. In other words its forward end lies just beneath the pelvi-sacral point and its rear end lies beneath the pelvic-arch just forward of the anus.

The device also consists of a removable absorbent filler or unit which not only acts as a moisture absorbing medium, but also acts as a pad between the sack and the human body. The filler in itself is novel, having features of construction which not only make the device entirely sanitary but which increase the rapidity at which absorption will be accomplished.

Also included in the invention is a means for connecting the device to a usual sanitary belt or other support in such a manner that the forward end thereof is prevented from lateral movement and the whole of the device is held against longitudinal movement.

I have found, after considerable experimentation, that a number of items enter into the question of comfort in an article of this class, viz:

First.—Texture, or feel to the bare skin;

Second.—Dimension, i. e., length, breadth, and depth;

Third.—Contour of portion contacting the body;

Fourth.—Pliability and resiliency;

Fifth.—Tightness at which it must be worn;

Sixth.—Stability, i. e., whether or not the article is prone to move while being worn; and,

Seventh.—Appearance through the clothing.

In deliberating upon the question of efficiency, it is found that the following items must be given consideration:

First.—Contour of portion contacting the body;

Second.—Dimension;

Third.—Stability, i. e., ability to remain in proper position regardless of position of a person's body;

Fourth.—Ability to retain its moisture regardless of the position of the body;

Fifth.—Speed of absorption; and,

Sixth.—Sanitation, i. e., whether or not the article may be properly cleaned after being worn, and whether or not the absorption element may be removed and a new one put in place without inconvenience and without soiling the body, hands, or clothing.

The prime requisites of an article of this class may therefore well be considered to be comfort and efficiency.

Other objects of the invention are to provide an article of the class described which is new, novel, practical and of utility; the outer moisture-proof element of which is so formed at its upper edge, or that portion contacting the body, that it will closely fit the pubis arch throughout its length; the supporting elements of which are so designed that, when in place, the outer element will be held positively against lateral or longitudinal movement, and will hold liquid regardless of the position assumed by the wearer, and regardless of whether or not an absorbent filler is contained therein; which includes an absorbent filler adapted to be installed as a single unit, and after being worn, to be removed as a single unit and thrown away; the filler unit of which may be easily and quickly installed, and may as easily and quickly be removed without manual contact with the soiled portion thereof; the filler of which is so designed that absorption does not necessarily take place only at the point at which moisture is applied, but the moisture may flow away from the point of original contact, and in its movement will be presented to a large absorbing surface or area; the filler of which includes an inner almost completely moisture-proof sack or pouch which protects the outer element from actual contact with any saturated portion thereof; the filler of which also acts as a cushion or pad for preventing contact with the body of the rim surrounding the orifice of the outer element; the outer element of which may be manufactured and sold at a price not prohibitive to the general public; the filler of which may be manu-

factured and sold at a price no greater than that now charged for usual catamenial bandages and therefore cheap enough to be thrown away; and, which will be efficient in accomplishing all the purposes for which it is intended.

With these and other objects in view as will more fully appear hereinbelow, my invention consists in the construction, novel features, and combination of parts hereinafter more fully described, pointed out in the claims hereto appended, and illustrated in the accompanying three-sheet drawing, of which,

Figure 1 is a top view of the article with the filler unit in place;

Figure 2 is an elevational view of the same;

Figure 3 is a bottom view of the outer container or sack;

Figure 4 is an enlarged sectional view taken substantially along the line 4—4 of Fig. 1;

Figure 5 is a fragmentary sectional view taken upon the same plane as is Fig. 4, and showing a slightly different form of bead at the orifice of the outer element;

Figure 6 is a perspective view of the outer element, looking downwardly at an angle toward its orifice;

Figure 7 is a perspective view of the inner moisture-proof element;

Figure 8 is a view similar to Fig. 7 but showing the element with its rim padding and outer covering in place;

Figure 9 is a perspective view of the complete filler unit; and,

Figure 10 illustrates the position of the device while worn.

Like characters of reference designate like parts in all the figures.

It is understood that various changes in the form, proportion, size, shape, weight and other details of construction, within the scope of my invention may be resorted to without departing from the spirit or broad principle of my invention and without sacrificing any of the advantages thereof; and it is also understood that the drawings are to be interpreted as being illustrative and not restrictive.

The inventive idea involved is capable of receiving a variety of mechanical expressions one of which, for the purpose of illustrating the invention, is shown in the accompanying drawings wherein:—

The reference numeral 1 indicates as a whole an outer moisture-proof element, sack, pouch, cup or container preferably constructed of a single piece of molded para-rubber, but which may be made of other materials if found desirable. The reference numerals 2 and 3 respectively indicate the front and rear ends of the element 1. As may best be seen in Fig. 2, the rim surrounding the orifice of the element 1 is arcuate longitudinally of the element, both ends extending upward a greater distance than the central portions of the rim. As best illustrated in Fig. 3, the end 2 is rounded transversely, and the end 3, while slightly rounded, is considerably narrower than the end 2. The longitudinal curve upwardly and downwardly of the upper surface of the element 1 is such that it fits exactly the pubis arch from just beneath the sacral-point, at its forward end, to just in front of the anus. Laterally, the upper surface of the element 1 is shaped to conform at its central and rear end portions to the shape of the pubis-arch in lateral curvature and dimension. The forward portion of the element is approximately the width of the base of the sacral-point.

As may best be seen in Fig. 2, the bottom of the body 4 of the element 1 is curved longitudinally in an upward and downward direction and its greatest depth occurs slightly forward of its longitudinal center line. The rear portion of the body curves upwardly less abruptly than the forward portion.

The forward end of the element 1 is equipped with two spaced ears 5 and 6 which are preferably integral with the body 4 and which are preferably connected to the body at points lying slightly below the orificial rim thereof. The rear end of the element is equipped with a single similar ear 7. The office of the ears 5, 6 and 7 will be more fully described hereinbelow.

As may best be seen in Fig. 4, the orificial rim of the element 1 is formed with an endless inwardly projecting bead 10 which is made integral with the wall of the body 4, and the lower surface 11 of which tapers smoothly and gradually into the wall. The upper surface of the bead 10 is beveled upwardly and outwardly as indicated by the reference numeral 12. In Fig. 5 is illustrated a slightly different form of bead 10. In this embodiment the lower surface 11 of the bead is formed with a less abrupt curve than the embodiment illustrated in Fig. 4. It is not imperative that the surface 11 be at all curved so long as it blends smoothly with the inner surface of the body 4. The office of the bead 10 will be more fully described hereinbelow.

In Figs. 7, 8 and 9 is illustrated the absorbent filler unit designed to removably repose within the element 1. The unit consists substantially of a preferably fibrous liner, inner-sack, or inner-pouch 15, which is die pressed to conform substantially to the inner surface of the element 1, and which has an orificial outwardly projecting flange portion 16 which projects outwardly over the bead 10 of the element 1. The liner 15 is preferably formed of some suitable moisture-proof paper. As may best be seen in Fig. 4 the upper and lower surfaces, and the edge of the flange portion 16 is covered with a padding material 17 of a soft and preferably absorbent texture such as cotton or the like. The material 17 is held in place upon the flange portion 16 by a thin covering 18 of suitable sheet material such as surgical gauze. The covering 18 extends from its inner edge 19, (at the left hand side of Fig. 4), upwardly over and around the material 17, thence downward along the exterior surface of the liner 15 and then upward and around the material 17 at the right hand side of Fig. 4, and from this point it extends downwardly along the inner surface of the liner to terminate at an edge 20.

Within the liner 15 is disposed a mass 21 of suitable absorbent material which is in no manner connected to the liner 15 or the covering 18, and which substantially fills the liner to a plane even with the uppermost surface of the material 17. The upper surface of the mass 21 is substantially flat and is covered by a sheet 22 of gauze. The outer edge portions of the sheet 22 extend downwardly within the liner 15 and terminate in free edges 23.

The curved upper surface of the material 17, and the upper and outer edge of the mass 21 form a substantially V-shaped groove 24 surrounding the upper surface of the mass 21. Extending downwardly between the covering 18 and the sheet 22, and communicating with the bottom of the V-shaped groove 24 is a crevice 25 which

continues downwardly for a considerable distance past the inner edges of the covering and the sheet.

The groove **24** and the crevice **25** act as a duct for preventing flooding of catamenia over the bead **10** of the element **1**. In other words, the efficiency of the device does not depend upon the inherent ability of the mass **21** to absorb moisture downwardly through its upper surface. Instead, the liquid, immediately upon discharge may escape downwardly through the crevice, and during its passage it is presented to the sides of the mass **21**. This arrangement more than doubles, in fact it practically quadruples, the absorption surface presented to the liquid, over any device presenting only one surface to the liquid. In case of flooding, the groove **24** acts as a collector for the liquid for a sufficient period of time to allow its escape through the crevice, and its absorption by the mass **21**.

The office of the inwardly extending bead **10** is to prevent any possible leakage of the liquid out of the element **15** when the wearer assumes a prone side-ways position.

At the front end of the element **1** is provided a novel means for preventing lateral movement of said end and longitudinal movement of the entire device. This means consists substantially of two elastic straps **30** and **31** removably connected at their free ends to the ears **5** and **6** respectively, and at their other ends joined together at a common meeting point **32** with a single elastic strap **33**. The free end of the strap **33** is adapted for connection to a usual sanitary belt or other supporting element **36**, (Fig. 10). The ear **7** at the rear end of the element **1** is adapted to be connected by a single elastic strap **34** to the sanitary belt.

A substantially triangular space **35** is formed by the straps **30**, **31**, and the end **2** of the element **1**. This space is adapted to receive the sacral-point **37** of the wearer when the device is in place, and the straps **30** and **31** contact the sides thereof and prevent lateral movement of the front end of the element **1**. Since the end **2** of the element **1** lies just beneath the sacral-point, and since the junction point **32** of the straps **31** and **32** lies just above the sacral-point, the element **1** is held positively against longitudinal movement.

It is thought that from the foregoing description the operation of the device will be obvious. Suffice to say that after being worn, the filler unit may be removed for replacement without manual contact with any soiled portion thereof, and if desirable, without completely detaching the outer element from its supporting structure. In removing the filler unit from the element **1**, the portion of the filler lying over the front end **2** of the element **1** is grasped manually, and, since this portion of the unit is at all times above the orifice of the genital canal, it is rarely, if ever, soiled.

From the foregoing description it may be seen that the device will actually accomplish all the purposes for which it is intended.

Having thus described my invention, what is claimed and desired to be secured by Letters Patent, is:

1. In an article of the class described, the combination with a catamenial sack or outer container, of a removable absorbent filler for said sack, including: an almost completely moisture-proof inner container adapted to fit within the outer container contiguous with the walls thereof, an upwardly and outwardly projecting flange integral with the inner container and adapted to lie over the orificial rim of the outer container, and an absorbent mass substantially filling the inner container.

2. In an article of the class described, the combination with a catamenial sack or outer container, of a removable absorbent filler for said sack, including: an almost completely moisture-proof inner container adapted to fit within the outer container contiguous with the walls thereof, an upwardly and outwardly projecting flange integral with the inner container and adapted to lie over the orificial rim of the outer container, an absorbent pad covering the flange, and an absorbent mass substantially filling the inner container and forming with the container a crevice for permitting a liquid to flow downwardly therein.

3. In an article of the class described, the combination with a catamenial sack or outer container, of a removable absorbent filler for said sack, including: an almost completely moisture-proof inner container adapted to fit within the outer container contiguous with the walls thereof, an upwardly and outwardly projecting flange integral with the inner container and adapted to lie over the orificial rim of the outer container, an absorbent pad covering the flange, and an absorbent mass substantially filling the inner container and forming with the container a crevice for permitting a liquid to flow downwardly therein, said mass and said pad complementally forming a groove surrounding the mass and communicating with the crevice.

4. In an article of the class described, the combination with an open topped catamenial sack, of a filler unit therefor including: an almost completely moisture-proof inner container adapted to repose within the sack; and an absorbent mass substantially filling the inner container, said container and mass so positioned relatively as to form a crevice therebetween for permitting the flow of a liquid around the mass and beneath its upper surface.

5. In an article of the class described, the combination with an open topped catamenial sack, of a filler unit therefor including: an almost completely moisture-proof inner container adapted to repose within the sack contiguous with the wall thereof; and an absorbent mass substantially filling the inner container, said container and mass so positioned relatively as to form a crevice therebetween for permitting the flow of a liquid around the mass and beneath its upper surface.

JAMES L. HUGHES.