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S. PENKSA

3,085,574

VAGINAL TAMPONS

Filed Feb. 26, 1962

FIG. 1

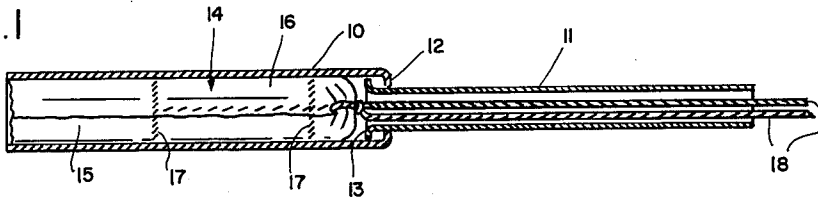


FIG. 2

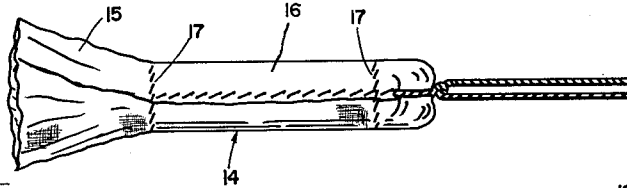


FIG. 3

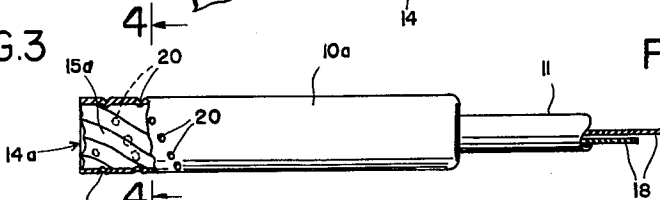


FIG. 4

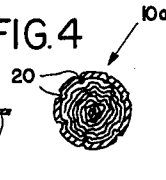


FIG. 6

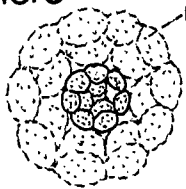


FIG. 5

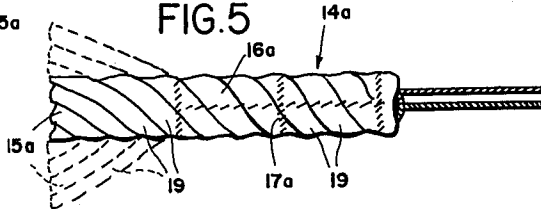


FIG. 8

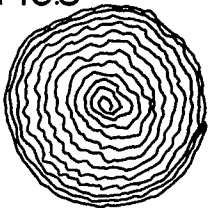


FIG. 7

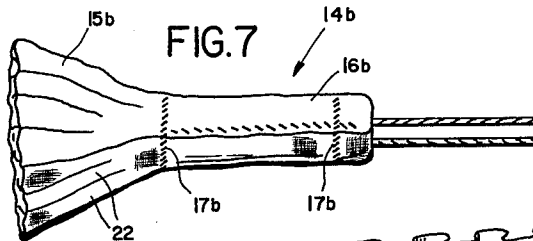


FIG. 9

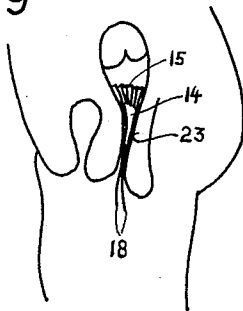
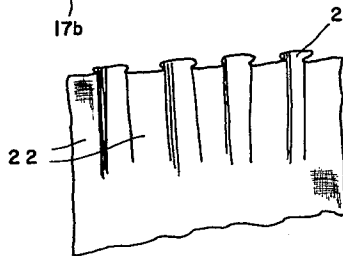


FIG. 10



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VAGINAL TAMPONS
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This invention relates to tampons which are in common use as feminine sanitary protection and for convenience and comfort during menstruation.

Tampons in present use are not completely satisfactory because they do not entirely block the vaginal passage so that, especially during the initial menstrual flow, leakage occurs which is, for obvious reasons, undesirable.

An object of the present invention is therefore the provision of a vaginal tampon which, upon insertion thereof in the vaginal passage will block the same, and more especially will do so at the upstream end of the tampon.

Another object of the invention is the provision of a vaginal tampon which, when fitted in the sheathing tube prior to use has a constant diameter throughout its length but which is provided with an expanding or spreading head end which, as it emerges from the tube upon insertion into the passage flares outwardly to engage the more widely spread walls of the interior of the passage. As a consequence the tampon after complete insertion blocks the passage and positively traps the menstrual fluid.

A further advantage of the improved tampon of this invention is that owing to the flaring out of the head end thereof as above mentioned, the said end becomes more absorbent than the usual head end of a tightly compressed tampon in common use.

The above as well as additional and more specific objects will be clarified in the following description wherein reference numerals refer to like-numbered parts in the accompanying drawing. It is to be noted that the drawing is intended primarily for the purpose of illustration and that it is therefore neither desired nor intended to limit the invention necessarily to any or all of the details shown or described except insofar as they may be deemed essential to the invention.

Referring briefly to the drawing, FIG. 1 is a longitudinal sectional view of one form of the tampon device of the present invention.

FIG. 2 is a view illustrating the appearance of the body of absorbent material after it has been expelled from the sheathing tube.

FIG. 3 is a view, with parts broken away and partly in section, of a modified form of the tampon device.

FIG. 4 is a sectional view taken on the line 4—4 of FIG. 3.

FIG. 5 is a view showing the body of absorbent material per se of FIG. 4 as the body appears when confined within the sheathing tube, as well as showing in broken lines how the head flares out as the body leaves the tube.

FIG. 6 is an end view of the absorbent body of FIG. 5 showing in broken lines the flared out head end thereof.

FIG. 7 is a view showing another modified form of the absorbent body as it appears when expelled from the sheathing tube.

FIG. 8 is an end view of FIG. 7 showing the flared out head end of the absorbent body.

FIG. 9 is a diagrammatic view showing the application of the present invention in use.

FIG. 10 is a layout or pattern view of a sheet or thin pad of material from which the absorbent body of FIG. 7 may be prepared.

Referring in detail to the drawing, the numeral 10 indicates the sheathing tube and the numeral 11 the thrust member of the device, which is slidable in the tube 10.

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An internal flange 12 on the tube 10 and an external flange 13 on the thrust tube 11 serve to limit the outward movement of the tube 11 with respect to the tube 10. This structure as illustrated in FIG. 1 is in common use.

The absorbent body 14, however, instead of being throughout its length a compact compressed cylindrical body which maintains its cylindrical form after being discharged from the tube 10 by sliding the thrust tube 11 to the left, FIG. 1, has the following structure. The body 14 is formed of a material or combination of materials possessing absorbent qualities; such material may be absorbent cotton alone or a combination of a nylon, rayon or like synthetic plastic fabric material with absorbent cotton, or a synthetic plastic material alone.

The body 14 comprises two portions, a head or lead end or portion 15 and a rear or follower portion 16, the latter being preferably longer than the former. The portion 16 is either compressed to form a somewhat firm pad which substantially retains its shape upon discharge from the tube 10, or the said portion 16 may be made to remain compacted by means of stitching as exemplified at 17, the exact stitching being a matter of choice for the intended purpose. Owing to the tendency of the uncompacted head portion 15 to spread or flare outward upon its discharge from the tube, the discharged body 14 will have the funnel-shaped appearance illustrated in FIG. 2 with the head 15 being shaped like the frustum of a cone.

The usual cord or cords 18 which are secured in any desired manner to the body 14 are shown passing through the tube 11 for removal of the body 14 from the vaginal passage in the well known manner.

In FIGS. 3-6 a modified form of the tampon tube and the absorbent body are shown, indicated respectively at 10a and 14a. Herein the body 14a is rope-like and is formed of strands 19 throughout its length, and the rear or trailing portion 16a is stitched, for example at 17a, to prevent its untwisting, while the strands 19 of the lead or head portion 15a remain unstitched so that the head portion may untwist and flare outward into a frusto-conical shape upon discharge from the tube 10a. A tube similar to the tube 10 of FIG. 1 may be used to contain the body 14a before insertion into the vaginal passage, but in order to further assure the untwisting of the head portion the tube 10a may be preferable. For this purpose the tube 10a is provided with spirally positioned indentations 20 which tend to guide the individual strands 19 into spiral untwisting as they emerge from the tube.

FIGS. 7 and 8 show another modified form of the body 14, designated by the numeral 14b. In this form the absorbent body is formed of a single or double sheet 21 of the material which is first crinkled to provide simulated corrugations 22 prior to rolling it up into the body 15b, as shown in FIG. 10. The body portion 16b is again compacted by means of stitching 17b, for example, or otherwise, while the head portion 15b remains free to expand or flare out upon discharge from the tube such as shown at 10. The corrugations tend to aid in this spreading out operation.

Thus in all of the modifications herein disclosed the head or leading portion of the absorbent body flares or spreads out upon insertion into the vaginal passage. FIG. 9 illustrates the appearance of the various absorbent bodies 14, 14a and 14b when positioned in the vaginal passage, 23, although this figure identifies the said body only by the numeral 14, and shows the head end 15 expanded to obstruct the passage whence it prevents leakage around the body.

While the invention has been described with particular reference to the structures illustrated in the drawing such is not to be construed as a limitation upon the invention which is best described and defined in the accompanying claims.

The invention having thus been described, what is claimed and desired to be secured by Letters Patent is as follows:

1. A vaginal tampon comprising, in combination, a sheathing tube having a leading end and a trailing end, a body of normally somewhat resilient expansible absorbent material slidably confined within said tube and having the circumferential surface thereof complementary to the interior circumferential surface of the tube and further having approximately the same length as the tube, a tubular thrust member telescopically carried by the trailing end of the tube for expulsion of said body therefrom with a pull cord attached to said body removably extending through said member, said body being formed of a first part and a second part, said second part extending a distance forward from the trailing end of the tube and having means restraining the same from lateral expansion thereof upon discharge of the body from the tube, said first part of the body extending forward from the adjacent end of said second part of the body substantially to the leading end of the tube and being unconstrained against lateral expansion thereof upon discharge of the body from the tube whereby said first part of the body expands laterally upon discharge of the body into the vaginal passage to obstruct the passage, said first part of the body consisting of helically wound strands of said material, said tube having spaced indentations in the leading end thereof in which said strands register to augment the spreading of the strands during lateral expansion of said first part of the body.

2. A vaginal tampon comprising, in combination, a sheathing tube having a leading end and a trailing end, a rope-like body formed throughout its length of a multiplicity of helically wound strands of normally resilient expansible absorbent material slidably confined within

said tube and having the circumferential surface thereof complementary to the interior surface of the tube and further having approximately the same length as the tube, a tubular thrust member telescopically carried by the trailing end of the tube for expulsion of said body therefrom with a pull cord attached to said body and extending through said tube, said body consisting of a first part and a second part, said second part having a length substantially in excess of one-half the length of the body and extending a distance forward from the trailing end of the tube and having means restraining the same from lateral expansion thereof upon discharge of the body from the tube, said first part of the body extending forward from the adjacent end of said second part of the body substantially to the leading end of the tube and being unconstrained against lateral expansion thereof upon discharge of the body from the tube whereby said first part of the body expands laterally upon discharge of the body from the tube and the expansion of said first part of the body increases progressively from said adjacent end of the second part of the body to the forward extremity of said first part, said first part of the body hence assuming a frusto-conical shape within the vagina complementary to the interior wall of the vagina.

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