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SANITARY NAPKIN
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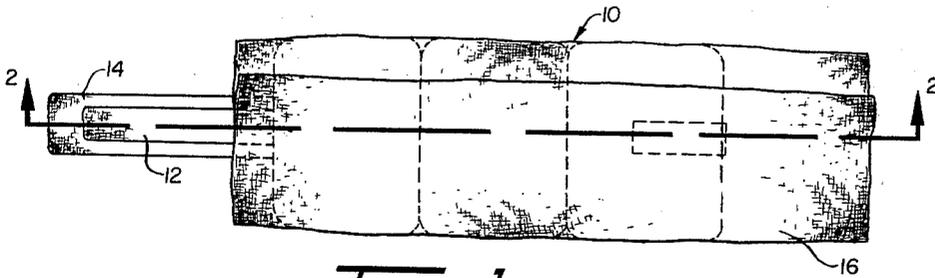


Fig. -1

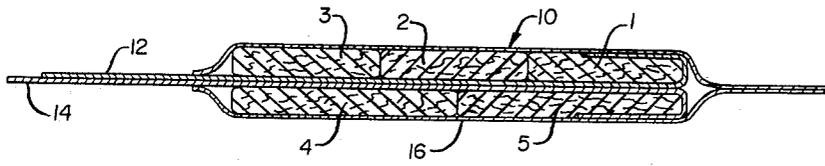


Fig. -2

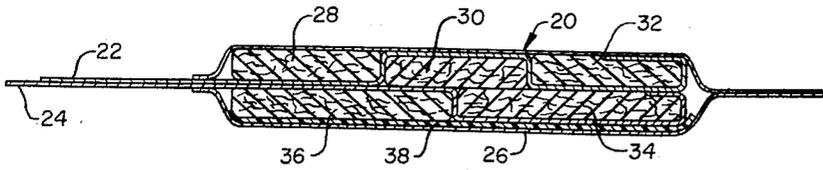


Fig. -3

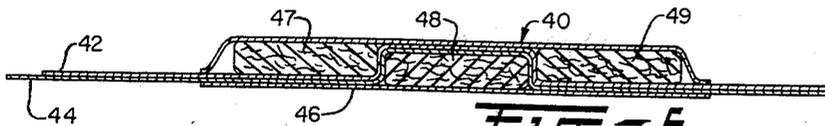


Fig. -5

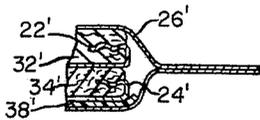


Fig. -4

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SANITARY NAPKIN

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This invention relates to sanitary napkins used in the practice of feminine hygiene.

Many sanitary napkins presently in use are composed of one or two pads wrapped in a thin gauge-like material. The napkin is arranged to engage against the body of the wearer in the catamenial region, generally being placed within a holder or belt. Although often represented as being easily disposable after use, such napkins, in fact, present to the user a serious disposability problem. Napkins of the construction described afford substantial bulk, incompatible with easy accommodation by the water closet system found in the average home. Attempts to flush such napkins after use often result in annoying, inconvenient, and sometimes expensive stoppage of the plumbing. As a result, used napkins must usually be wrapped protectively and disposed of by trash removal or burning.

It is, therefore, the principal object of the present invention to provide an improved sanitary napkin of novel construction affording convenient disposability.

Another object of the present invention is to provide a sanitary napkin that may easily be accommodated by home water closet systems.

Still another object of this invention is to provide a sanitary napkin of composite construction that may easily be separated into its component parts.

And another object, of the present invention is to provide an easily disposable sanitary napkin having improved absorbent quality, which is more comfortable to the wearer, which attenuates fluid odors to a large extent, and which can be easily manufactured for sale at a reasonable price.

In its broadest aspect the present invention comprises a plurality of small soft-absorbent pads arranged within a common wrapping cover to form a sanitary napkin of unitary structure. Means are provided for separating the napkin into its small component parts after use. A principal feature of the present invention is the use of a plurality of small absorbent pads of a size affording easy disposability by flushing down the usual home water closet. Use of these small pads provides a napkin having superior absorbent properties as more absorbent surface is exposed to the body of the wearer than with a single pad of equivalent size. Such a composite structure affords more comfort and protection to the wearer, as it is more flexible and may more readily be shaped to the contour of the bearing region of the wearer's body. Another feature of this invention is the use of a plurality of flexible strips extending outwardly of the wrapping from the interior of the unitary structure, the terminal ends of which engage pads within the structure. After use, the napkin may be removed by grasping these strips together and imparting the necessary movement thereto. To dispose of the napkin the strips are pulled in opposite directions, thereby unwrapping the cover material and disintegrating the napkin into the component parts and permitting disposal as previously discussed. And an optional feature is the provision of a deodorizing agent which together with the tight fit provided by the flexible structure, attenuates fluid odors to a large extent.

The above and other objects, aspects, features, and advantages of the present invention will become apparent by reading the following more detailed description and

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appended claims together with the accompanying drawings, wherein:

FIGURE 1 is a plan view of the sanitary napkin of the present invention;

5 FIGURE 2 is a transverse sectional view of the sanitary napkin taken on line 2-2 of FIG. 1;

FIGURE 3 is a transverse sectional view of an alternative embodiment of a sanitary napkin constructed according to this invention;

10 FIGURE 4 is a fragmentary sectional view showing an alternative means of engaging the separation means with the absorbent pads of the present invention; and,

FIGURE 5 is a view in section of yet another embodiment of a sanitary napkin according to the present invention.

Reference is made to FIGURES 1 and 2 which show the sanitary napkin 10 of the present invention in a preferred embodiment. A plurality of small absorbent pads, are arranged in two groups, the first group comprising a 20 first pad 1, second pad 2, and a third pad 3, while the second group consists of a fourth pad 4, and a fifth pad 5. A first strip 12, which may be, for example, of folded cheesecloth, engages at its terminal end a surface of one of the pads in the first group, shown here as pad 1. A 25 second strip 14 engages at its terminal end a surface of one of the pads of the second group, shown here as pad 5. The strips may engage the pads in any of several ways. They may be secured to the terminal pads by fluid-proof adhesive means such as glue. Where the 30 surface of the strips is sufficiently rough, as where cheesecloth is employed, the frictional engagement between the strip and the terminal pad is sufficient to prevent them from separating when a force is exerted on the strip. This is the method illustrated in FIGS. 2 and 3. The 35 strip may be woven into the pad as further explained in connection with FIGURE 4, or any other suitable means of engaging the strips with the terminal pads may be employed. The two strips 12, 14 are sandwiched between the two groups of pads. A common cover 16, 40 preferably of a material such as cheesecloth, is wrapped around the plurality of pads and the strips to form a unitary structure 10, however, end portions of the strips 12, 14 are arranged to extend outwardly of the cover 16 to provide a means for removing the napkin 10 after use.

The napkin 10 may be removed from a holder, or region of use by grasping together the flexible strips 12, 14 at their foremost ends and imparting a pull thereto. To dispose of the napkin 10 the strips 12, 14 are pulled 50 in opposite directions which will cause the outer cover 16 to unwrap and cause the napkin 10 to fall apart. It is readily seen that the pads, 1, 2, 3, 4, 5 are of a size which may be easily accommodated by the usual home water closet and thus flushed without danger of stoppage 55 presently experienced from napkins commonly sold.

It is noted that it is preferable to arrange as many small pads within a given size napkin as is practicable. A plurality of small pads will present a greater absorption surface to the wearer's body than a single pad of 60 equal total area, because of the additional surface provided at the points where the pads touch one another. The greater the number of pads in the group adjacent to the wearer's body, the more flexible is the napkin. This permits contour fitting to the wearer's body, providing more comfort and greater efficiency. The tighter fit resulting attenuates fluid odors and assures total absorption of fluids by the napkin 10. It is usual to provide a 65 different number of pads in the group adjacent the wearer's body than in the group away from the wearer's body to insure that any crevices formed between adjacent pads do not extend the depth of the napkin 10, but other means for preventing this may be employed.

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Also, since for a given size napkin, the size of the pads is inversely proportional to their number, a napkin employing a larger number of pads may be more easily disposed of.

FIGURE 3 illustrates an alternate embodiment of the present invention providing a more positive separation of the napkin 20 into its component segments. Again, a plurality of small absorbent pads are arranged in two groups. A first group consists of three pads, 28, 30, 32, while the second group has two pads 34, 36. In this embodiment, the first strip 22 is interwoven among the pads of the first group, engaging at its terminal end a surface of the furthestmost pad of that group, 32. The second strip 24 similarly interweaves between the pads of the second group, being engaged at one end to a surface of the furthestmost pad 34. As an optional feature a fluid-repellant member 38 may be arranged below the plurality of pads furthest away from the body of the wearer, preventing standing of clothing should body fluids soak through the pads to the bottom of the napkin 10. A common cover 26, preferably of gauze-like material, encompasses the pads, 28, 30, 32, 34, 36, the fluid-repellant member 38, and the strips 22, 24, save for the foremost portions of the strips 22, 24 which extend beyond the wrapping cover 26. Alternatively, that portion of the cover 26 at the bottom of the napkin 10 may be made fluid-repellant, thus obviating the need for the fluid-repellant member 38. As in the previous embodiment, the napkin 20 may be removed from use by application of a grasping and pulling motion to the strips 22, 24. To disintegrate the napkin 20 into its component parts for easy water closet disposal, the strips may be pulled in opposite directions. It is seen that a positive unwrapping action of the cover 26 will result, freeing the pads for flushing.

Turning now to FIGURE 4 there is shown a fragmentary sectional view of a modification of the sanitary napkin of FIG. 3. As in the previous figures, a plurality of pads including the two shown 32', 34' are arranged within a wrapping 26'. The first of the separating strips 22' is shown to be woven within the material of one of the absorbent pads 32' in the first group. The second of the strips 24' is shown woven within the fabric of one of the absorbent pads 34' in the second group. The sanitary napkin 20' is otherwise similar to the structures disclosed in the previous figures.

FIGURE 5 shows yet another embodiment of a sanitary napkin 40 of simplified construction according to the present invention. A single plurality of pads, shown here as a first pad 47, second pad 48, and third pad 49 are arranged with a wrapping 46 which is folded to enclose said pads. Means for separating the napkin 40 into its component parts for easy disposal after use are provided in the form of a pair of flexible strips 42, 44, which interweave among the pads. Beginning at the exterior of the wrapping 46, the strips 42, 44, run along the bottom surface of the first pad 47, up the interstice between said first pad 47 and second pad 48, along the top of the second pad 48, down the interstice between the second pad 48 and the third pad 49, and along the bottom of the third pad 49 to the exterior of the wrapping 46. The strips 42, 44 may be grasped at either end to remove the napkin 40 from the position of use and it may be separated into its smaller portions for easy water closet disposal by pulling the strips 42, 44 in opposite directions.

As an optional feature, deodorant material may be introduced within any of the napkins described herein. The segmenting of the pads within the napkin suggests the introduction of a deodorant material in one or more of the interstices between adjacent pads. The deodorant material may be sandwiched between the pads in the manner of the strips 12, 14 of FIG. 2, or arranged within the napkin as the fluid-repellant member 38 of FIG. 3. Provision of deodorant material together with the tight fit pro-

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vided by the flexible construction of the napkin affords a high degree of odor attenuation.

What has been described is an improved sanitary napkin of novel construction permitting clean, efficient disposal through an ordinary water closet. The napkin described possesses superior absorbent qualities and thus attenuates fluid odors to a higher degree. It is to be understood that the forms of the invention herewith shown and described are to be taken as preferred examples of the same and that various changes in the shape, size and arrangement of the parts may be resorted to without departing from the spirit of the invention and scope of the subjoined claims. For example, the number and size of the component pads may vary. The flexible strips may be fabricated in part of fluid-proof material, particularly at their foremost end. Any suitable soft absorbent material may be used in the pads.

I claim:

1. A sanitary napkin comprising, a plurality of small pads of soft absorbent material, an unsealed wrapping encompassing said plurality of pads to form a fluid absorbent unitary structure, and means associated with said pads for separating said pads from each other and for separating said napkin into its constituent parts in a single operation to permit separate disposal thereof.

2. A sanitary napkin comprising, a first plurality of pads of soft absorbent material, a second plurality of pads of soft absorbent material, an unsealed wrapping encompassing said first and second plurality of pads in their entirety, said pads and wrapping together forming a fluid absorbent unitary structure, means associated with said pads for separating said wrapping from said pads and said pads from each other, comprising a first separation member engaging one of said first plurality of pads within said structure, a second separation member engaging one of said second plurality of pads within said structure, said first and second members extending in part outside said structure, whereby said first and second members may be moved apart to separate the sanitary napkin into its constituent parts to permit ready disposal thereof.

3. A sanitary napkin as described in claim 2 wherein said first and second plurality of pads are arranged so that the interstices between the pad members of said first plurality are in non-alignment with the interstices between the pad members of said second plurality.

4. A sanitary napkin as in claim 2 wherein the terminal ends of said first and second separation members are woven into the fabric of one of said first and one of said second plurality of pads respectively.

5. In a sanitary having a plurality of small absorbent pads arranged within a wrapping to form a unitary structure, the improvement of a means for removing said wrapping from said pads and separating said pads from each other comprising: a plurality of flexible strip members interwoven in contacting relationship among the pads within the structure, the terminal end of each strip engaging a pad within the structure, the foremost end of each strip extending without said wrapping to afford a means of separating said napkin into its component parts in a single operation.

6. In a sanitary napkin having a plurality of small absorbent pads arranged in two groups within a wrapping to form a unitary structure, the improvement comprising: first and second flexible separation strips; said first strip being interwoven in contacting relationship among the plurality of pads of the first group, one end of said first strip engaging one of said plurality of pads of said first group and the other end of said strip extending outside said wrapping; said second strip being interwoven in contacting relationship among the plurality of pads of the second group, one end of said second strip engaging one of said plurality of pads of said second group and the other end of said strip extending outside said wrapping; whereby said ends of said separation strips extending outside said wrappings may be manipulated to separate said

wrapping from said pads and said pads from each other to disintegrate said napkin into its component parts in a single operation.

7. A sanitary napkin comprising a plurality of pads divided into a finite number of groups, said pads in each of said groups being co-planar and arranged so that the interstices between the adjacent pads in any one group are not in alignment with the interstices between the adjacent pads of any other group, a wrapping encompassing said plurality of pads to form together a unitary structure, and a finite number of flexible strip separation members associated with said pads, each of which extend outside said wrapping at their foremost end and each of which engage at least one of said plurality of pads from said finite number of groups of pads at the terminal end of said strip, whereby said separation strip members may be manipulated to separate said wrapping from said pads, and said pads from each other in a single operation.

8. A sanitary napkin comprising a plurality of small absorbent pads arranged in side by side relation with each other and perpendicular to the longitudinal axis of said napkin, said pads having top and bottom surfaces; an unsealed wrapping cover encompassing said pads in their entirety to form a fluid-absorbent unitary structure; and flexible strip separation means extending in part outside said structure and extending in part inside said structure to alternately contact the top surface of some pads and the bottom surface of the pads adjacent to said top contacted pads.

9. A sanitary napkin comprising, first, second, and third co-planar absorbent pads, arranged in side by side relation, said pads having top and bottom surfaces; flexible strip separation means associated with said pads and arranged to contact the bottom of said first pad, the top of said second pad, and the bottom of said third pad; an unsealed cover wrapping enclosing said pads in their entirety; said strip separation means extending without said cover wrapping in part.

10. A sanitary napkin comprising: a plurality of small generally rectangular pads of soft absorbent material, an unsealed gauze-like covering, encompassing said plurality of pads to form a fluid absorbent sanitary structure, and means associated with said pads for unwrapping said gauze-like covering and separating said pads from each other.

11. A sanitary napkin adapted to engage with the catamenial region of a human body comprising: a first plurality of pads of soft, absorbent material; a second plurality of pads of soft, absorbent material; an unsealed wrapping encompassing said first and second plurality of pads in their entirety, said pads and wrapping together forming a fluid absorbent unitary structure; means for positioning said structure in relation to the body of the wearer; said pad positioning means extending from within the interior of said structure to the exterior of said structure; said pad positioning means comprising both a first separation member in contacting relationship with each of said plurality of pads and engaging one of said

first plurality of pads within said structure and a second separation member in contacting relationship with each of said second plurality of pads and engaging one of said second plurality of pads within said structure; whereby said wrapping may be separated from said first and second plurality of pads and each of said pads separated from each other by grasping said first and second separation members of said pad positioning means and moving them apart to separate the napkin into its constituent parts in a single operation.

12. A sanitary napkin as described in claim 8 wherein said small absorbent pads are generally rectangular in shape.

13. A sanitary napkin comprising, a first plurality of pads of soft absorbent material, a second plurality of pads of soft absorbent material, an unsealed wrapping encompassing said first and second plurality of pads in their entirety, said pads and wrapping together forming a fluid absorbent unitary structure, means associated with said pads for separating said wrapping from said pads and said pads from each other, comprising a first separation member, a second separation member, said first and second separation members being arranged within said structure and extending in part outside said structure, those portions of said separation members within said structure being arranged among said pluralities of pads and in bearing relation with said pads and each other, whereby said first and second members may be moved apart to separate the sanitary napkin into its constituent parts to permit ready disposal thereof.

14. A sanitary napkin comprising, a first plurality of pads of soft absorbent material, a second plurality of pads of soft absorbent material, an unsealed wrapping encompassing said first and second plurality of pads in their entirety, said pads and wrapping together forming a fluid absorbent unitary structure, means associated with said pads for separating said wrapping from said pads and said pads from each other, comprising a first separation member, a second separation member, said first and second separation members being arranged within said structure and extending in part outside said structure, those portions of said separation members within said structure interweaving among the individual member pads of said pluralities of pads, whereby said first and second members may be moved apart to separate the sanitary napkin into its constituent parts to permit ready disposal thereof.

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