

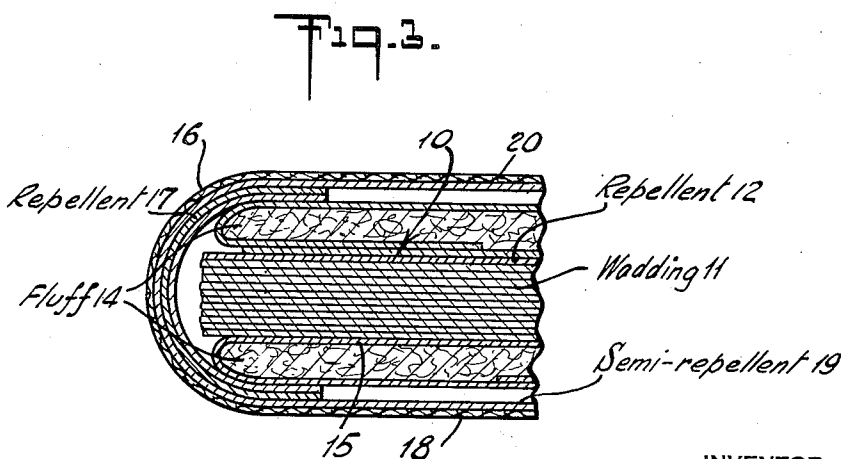
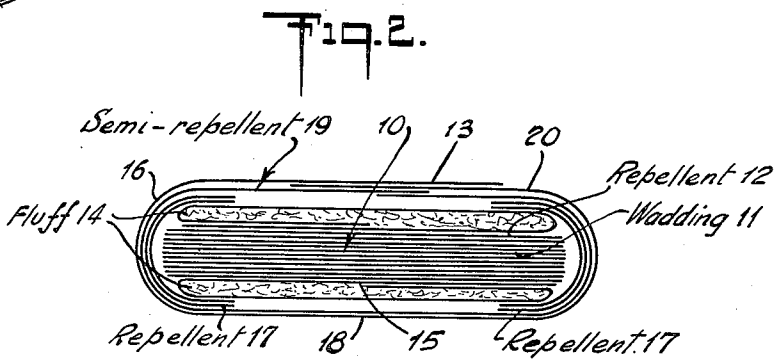
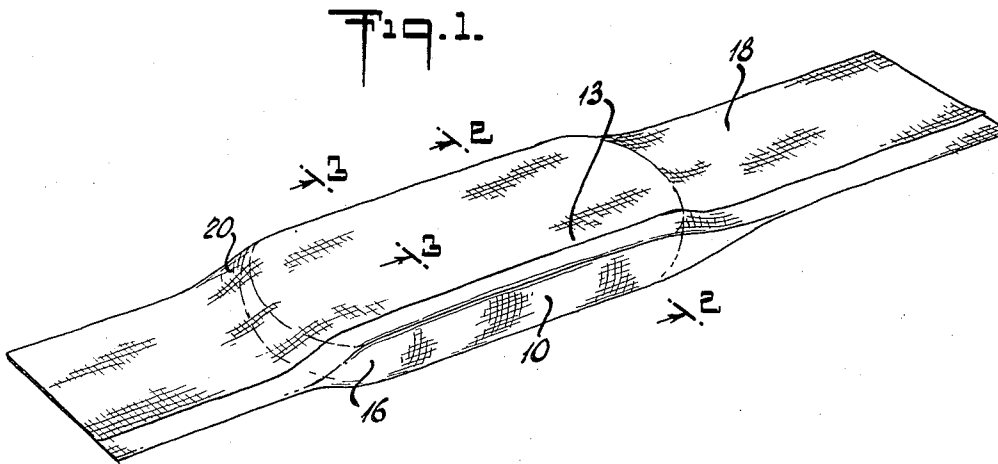
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SANITARY NAPKIN

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SANITARY NAPKIN

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This invention relates to sanitary napkins and is concerned primarily with those of the disposable variety having absorbent pads covered by wrapper supports.

Sanitary napkins of the prior art fall into three general classes: (1) fluff type napkins; (2) paper layer types; and (3) laminations of paper layers on fluff center napkins. The chief advantage of the first type resides in its softness and in its comfort for the wearer. The layer type on the other hand excels in firmness and shape retention, both of which are desirable from the angle of protecting the user. Paper laminations on fluff center napkin show some of the advantages of both types.

Unfortunately each of the sanitary napkin types of the prior art also has one or more important disadvantages. Thus prior art fluff type napkins have a tendency to lose shape while being worn, and both paper layer types feel somewhat hard, harsh and uncomfortable.

The principal demand made upon sanitary napkins is in the direction of comfort and protection. In the past women had to compromise to some extent and had to accept the type of napkin that they believed fulfilled their requirements most nearly. Necessity forced them to accept the disadvantages of the napkin type they chose.

It is a principal purpose of the invention to provide a sanitary napkin that combines and surpasses the desirable features of present day napkins, and that, at the same time, does not exhibit the undesirable features of such napkins. It is a further object of the invention to provide a sanitary napkin showing a desirable degree of resistance to deformation and maintaining its shape, firmness, and position during use. Another object of the invention is the development of a sanitary napkin that is not harsh but soft and comfortable. It is a still further object of the invention to provide a sanitary napkin that is not bulky but shows strong retardation of menstrual fluid penetration, and particularly that shows no penetration at its sides. A further object of the invention is the provision of a sanitary napkin which can be made economically on economical machinery and which is not expensive in manufacture or use.

Other objects and advantages will become apparent from the following description, furnished by way of example only and not by way of limitation, particularly when taken in connection with the accompanying drawing, wherein similar numerals refer to similar parts throughout the several views, and wherein:

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Fig. 1 is a perspective view of a sanitary napkin made in accordance with a preferred embodiment of the invention;

Fig. 2 is a horizontal section through lines 2—2 of Fig. 1; and,

Fig. 3 is an enlarged partial horizontal section through lines 3—3 of Fig. 1.

The invention is based upon the discovery that a form retaining, yet surprisingly soft and satisfactory, sanitary napkin results from the assembly within an outer wrapper of two opposed, individually wrapped, fluff layers, and, between said layers a central tissue layer of substantial bulk. The sanitary napkin is particularly satisfactory when its outer wrapper includes a semi-repellent tissue member, and when each longitudinal edge includes a repellent member to prevent discharge of fluid from the sides and accordingly their hardening. It is best when its central tissue layer includes a repellent so as to add to the prevention of fluid passage through the napkin.

A typical napkin 10, made in accordance with the invention is shown in the attached drawings. The napkin 10 contains a substantial layer of absorbent tissues 11, e. g., twelve layers of tissue weighing twelve pounds per ream of four hundred eighty sheets, twenty-four by twenty-six inches. More or less tissue may be provided but it is preferred that the tissue layer comprise not less than six and not more than twenty layers of tissue weighing twelve pounds per ream, or an equivalent weight of some other tissue. The tissue is preferable creped and the crepe may extend in either direction.

In the best forms of the invention one or more layers of repellent tissue 12 are associated with the center absorbent tissue layer 11. In this location, repellent tissue layers, which are usually composed of sized lightweight tissue paper, for example sized with five per cent by weight of a rosin contribute materially to the fluid passage resistance and to the fluid retention of the napkin. It will be observed that the illustration shows the repellent tissue not in the center but near the outside of the absorbent tissue layer. This position is thoroughly satisfactory. As most users prefer to wear the napkin, which is preferably reversible, with the wrapper overlap 13 away from the body the repellent tissue 12 is arranged preferably on the side of the absorbent tissue layer 11 nearer to the overlap 13 so that, in normal use, the fluid is fully distributed prior to arrival at this barrier.

On each face, the absorbent tissue layer is covered by a fluff layer 14, preferably in an in-

dividual wrapper 15, so as to aid materially in the form retention of the napkin. By fluff is meant purified disintegrated wood pulp such as alpha cellulose, although for some purposes fluff made from cotton and other soft fibers may be desirable. Each fluff layer 14 is substantial and may for instance comprise forty grains of alpha cellulose fluff. The absorbent tissue 11 and the fluff layers 14 are normally of about the same weight but some variations in weight are possible within the spirit of the invention provided each layer remains substantial and has in itself a substantial fluid absorbing capacity. Each longitudinal edge 16 of the combination of the absorbent tissue layer and the two fluff layers is covered by one or more longitudinal side-strips 17 of fluid-repellent i. e. hydrophobic tissue. These side-strips 17 prevent undue side penetration of fluid from within the sanitary napkin and aid in maintaining its form, accordingly protecting the user of the napkin against fluid discharge from the napkin.

The entire assembly described thus far is held within an outer wrapper 18 which comprises preferably a semi-repellent tissue layer, such as the layer 19 of the illustration and one or more gauze and/or non-woven fabric layers 20. The semi-repellent tissue is hydrophobic but permits penetration by water or menstrual fluid i. e. unabsorbed drops form on its surface but penetrate it quickly and are absorbed within the interior of the napkin.

The product of the invention retains the softness and comfort of the fluff type napkins and departs from the harshness of all layer type napkins, since the laminated tissue layer is concealed within its center and does not contact the wearer directly at any point. The new napkin provides greatly improved protection over the fluff type products. Apparently it is particularly outstanding in this property because of its excellent ability to retain shape and maintain its position during use. The product is economical in manufacture and use.

All embodiments within the scope of this specification and/or the appended claims are comprehended within the scope and spirit of this invention. The embodiment of the invention was described for purposes of illustration rather than of limitation. All variations and modifications of the invention are understood as being included within the scope thereof.

The claims are:

1. A sanitary napkin comprising an elongated absorbent pad and an outer wrapper therefor, said absorbent pad comprising a center layer composed of a substantial number and weight of absorbent tissues and including on one of its faces a fluid-repellent tissue and, superposed on each face of said center layer, an individually wrapped and accordingly form retaining fluff layer of substantial weight, the combination of said three layers being covered at both edges of the napkin and within said outer wrapper by repellent side strips to prevent penetration of said fluid from said napkin through said edges, and said outer wrapper including a tissue having some degree of fluid repellency, but adapted to transmit fluid.

2. A sanitary napkin comprising an elongated absorbent pad and an outer wrapper therefor, said absorbent pad comprising a center layer composed of a substantial number and weight of absorbent tissues and including a repellent tissue and, superposed on each face of said center layer,

an individually wrapped and accordingly form-retaining fluff layer of substantial weight, the combination of said three layers being covered at both edges of the napkin and within said outer wrapper by fluid-repellent side strips to prevent penetration of fluid from said napkin through said edges, and said outer wrapper including a semirepellent tissue.

3. A sanitary napkin comprising an elongated absorbent pad and an outer wrapper therefor, said absorbent pad comprising a center layer composed of a substantial number and weight of absorbent tissues and, superposed on each face of said center layer, an individually wrapped and accordingly form-retaining fluff layer of substantial weight, the combination of said three layers being covered at both edges of the napkin and within said outer wrapper by fluid-repellent side strips to prevent penetration of fluid from said napkin through said edges, and said outer wrapper including semi-repellent tissue.

4. A sanitary napkin comprising an elongated absorbent form-retaining pad of soft feel and an outer wrapper therefor, said absorbent pad comprising a center layer composed of a substantial number and weight of absorbent tissues and including fluid-repellent tissue, and superposed on each face of said center layer, and contacting it, a form-retaining soft fluff layer of substantial weight, the combination of said three layers being covered at both edges of the napkin and within said outer wrapper by fluid-repellent side strips to prevent penetration of fluid from said napkin through said edges.

5. A sanitary napkin comprising an elongated absorbent pad and an outer wrapper therefor, said absorbent pad comprising a center layer composed of a substantial number and weight of absorbent tissues and, superposed on each face of said center layer, an individually wrapped and accordingly form-retaining fluff layer of substantial weight, the combination of said three layers being covered at both edges of the napkin and within said outer wrapper by fluid-repellent side strips to prevent penetration of fluid from said napkin through said edges.

6. A sanitary napkin comprising an elongated absorbent pad and an outer wrapper therefor, said absorbent pad comprising a center layer composed of a substantial number and weight of absorbent tissues and including a fluid-repellent tissue and, superposed on each face of said center layer, an individually wrapped and accordingly form retaining purified disintegrated alpha cellulose fluff layer of substantial weight, the combination of said three layers being covered at both edges of the napkin and within said outer wrapper by repellent side strips to prevent penetration of fluid from said napkin through said edges, and said outer wrapper including a semi-repellent tissue and non-woven fabric.

7. A sanitary napkin comprising an elongated absorbent pad and an outer wrapper therefor, said absorbent pad comprising a center layer composed of a substantial number and weight of absorbent tissues and including a fluid-repellent tissue without its center and, superposed on each face of said center layer, an individually wrapped and accordingly form retaining fluff layer of substantial weight, the combination of said three layers being covered at both edges of the napkin and within said outer wrapper by repellent side strips to prevent penetration of said fluid from said napkin through said edges, and said outer

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wrapper including a semi-repellent tissue and gauze.

8. A sanitary napkin comprising an elongated absorbent pad and an outer wrapper therefor, said absorbent pad comprising a center layer composed of a substantial number and weight of absorbent tissues and including a fluid-repellent tissue without its center and, superposed on each face of said center layer, an individually wrapped and accordingly form retaining fluff layer of substantial weight, said outer wrapper including a semi-repellent tissue and gauze.

9. A sanitary napkin comprising an elongated absorbent form-retaining pad of soft feel and an outer wrapper therefor, said absorbent pad comprising a center layer composed of a substantial number and weight of absorbent tissues and including fluid-repellent tissue, and, superposed on each face of said center layer, and contacting it, a form-retaining soft fluff layer of substantial

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weight, the combination of said three layers being covered at both edges of the napkin and within said outer wrapper by fluid-repellent side strips to prevent penetration of fluid from said napkin through said edges, said fluid-repellent tissue being arranged on one side of the absorbent tissue layer.

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