

[54] **INCONTINENCE PADS** 3,461,872 8/1969 McConnell et al. 128/287
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 128/287, 128/292

[51] Int. Cl. **A61g 7/02, G61g 9/00**

[58] **Field of Search** 5/91, 92, 334, 335, 345 R;
 128/284, 287, 292, 296

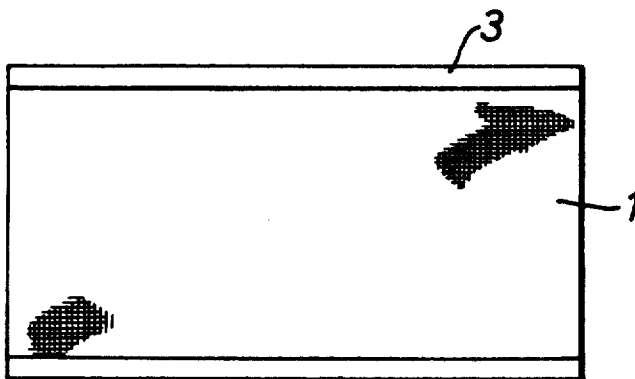
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[57] **ABSTRACT**

An incontinence pad is made up from several layers. Uppermost is a permeable membrane, followed in descending order by a thin absorbent layer, an impervious layer, a thick absorbent layer and a base impervious layer. The central impervious layer has a window therein to allow the majority of fluid to pass to the thick absorbent layer, which is preferably impregnated with a colloid.

13 Claims, 4 Drawing Figures



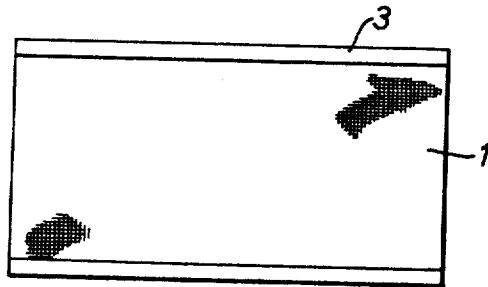


FIG. 1.



FIG. 2.

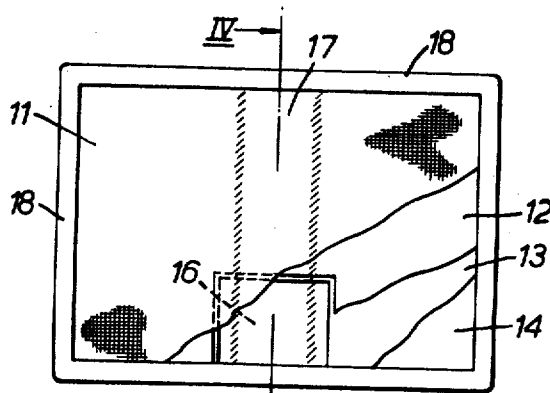


FIG. 3.

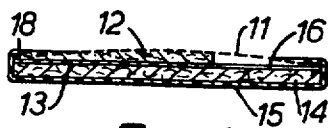


FIG. 4.

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INCONTINENCE PADS

This invention relates to incontinence pads.

An incontinence pad for a patient in bed should have several properties. It must be absorbent for a considerable quantity of liquid, it must not leak, either downwards or sideways and it should prevent as far as possible the discomfort to the patient of sitting or lying in a pool or even on a damp-feeling surface. The first two properties are not too difficult to achieve, but the third one does present problems. No matter how absorbent a material is, when the weight of a human body is placed on it even a small amount of liquid will tend to concentrate or 'puddle' at the pressure area. While there are hydrophobic materials such as polypropylene which, when knitted for example, will pass liquid and continue to feel dry, and highly absorbent materials of multi-ply absorbent paper or wood pulp, their use in combination cannot alone overcome this puddling problem.

A known incontinence pad which has this defect is shown in FIGS. 1 and 2 of the accompanying drawing, in plan and cross-section respectively. This pad is cut from a roll and comprises an upper permeable layer 1, of paper or man-made fibre, an intermediate absorbent layer 2, of 10-ply crepe absorbent paper for example, and a bottom impervious layer 3, for instance of polythene or polythene and paper. The longitudinal edges of this layer 3 are folded up and inwardly to be bonded to the corresponding edges of the layer 1, so trapping the intermediate layer 2. As well as being subject to the defects noted above, by being cut from a roll the ends are left open and there can be leakages through them.

According to the present invention there is provided an incontinence pad comprising a permeable layer or membrane, normally uppermost, an upper absorbent layer, an upper impervious layer, but with an aperture or window formed therein, the upper absorbent layer not extending over this aperture or window, a lower absorbent layer to which fluid has access through the window and, normally lowermost, a complete impervious layer, the edges of the pad being sealed.

In a preferred form the sealing is achieved by the edge portions of the bottom impervious layer being folded up and inwardly and bonded over the edge portions of the permeable membrane. The pad is conveniently of rectangular plan form and the window is preferably central of one of the longer sides. It too may be rectangular or square, although other shapes are quite possible.

In order to contain the liquid to a greater capacity, to alter its fluidity to a gel, and to abolish the offensive odour of stale warm urine, it is proposed to instill a colloid in the form of cellulose into the absorbent material. This need not be done throughout the pad in order to achieve these advantages but only in a central band spanning the windows at least. The upper absorbent layer, which will generally be thinner than the lower absorbent layer, also need not be so treated. The presence of cellulose also makes the pad more readily combustible, and therefore makes destruction after use easier. It is expected that this pad will lead to a considerable reduction in the frequency of bed soiling, and hence lessen the cost of treatment.

For a better understanding of the invention one constructional form will now be described, by way of ex-

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ample, with reference to the remaining figures of the accompanying drawing, in which:

FIG. 3 is a plan view, partly cut away, of an incontinence pad according to the invention, and

FIG. 4 is a section on the line IV—IV of FIG. 3.

The pad comprises a permeable layer 11 of hydrophobic fabric such as knitted polypropylene, for example, below which are, in order, an upper absorbent layer 12, an intermediate impermeable layer 13, a lower absorbent layer 14 and a bottom impermeable layer 15. The upper layer 12 consists of a few (two or three) layers of absorbent paper and is effective to contain any spillage. The intermediate layer 13 may be of polythene and has a square window 16 cut from the centre of one of the longer sides. This may be 6 by 6 ins., and a typical pad size is 18 × 24 ins. A window of this size is sufficient immediately to pass the urine of an average micturation. The upper layer 12 does not extend over the window and so the urine is not normally absorbed into it but passes directly to the lower absorbent layer 14 which is much thicker than the layer 12 and may be of 10-ply absorbent paper or wood pulp, for example. The permeable layer 11 may also be formed with a window overlying the window 16 so that the layer 14 would be exposed over that area. A central band 17 of the layer 14, and of the layer 12 if desired, between the two longer sides and spanning the window 16 is impregnated with a colloid, such as methyl cellulose, which promotes the advantages mentioned above. The bottom impermeable layer may be of non-slip polythene or polythene and paper mixed and its edge portions 18 are folded up and inwardly to be bonded to the edges of layer 11. This seals off all four sides and prevents lateral leakage. The total pad capacity should generally not be less than 500 ml.

When a patient is incontinent, the liquid passes directly to the lower absorbent layer 14 and gradually spreads over the full, or almost full, area of the pad. The pad will be arranged in relation to the patient so that there will be no pressure over the window area and hence no possibility of puddling there. The liquid within the lower layer cannot escape in any quantity, being trapped by the layer 13. Any spillage or seepage through the window 16 is absorbed by the upper layer 12, and there will not be sufficient of that to cause puddling.

I claim:

1. An incontinence pad comprising a permeable membrane, normally uppermost, an upper absorbent layer, an upper impervious layer, but with a window formed therein, the upper absorbent layer leaving said window exposed, a lower absorbent layer to which fluid has access through said window, a complete impervious layer, normally lowermost, and means sealing the edges of the pad the window being of lesser area than said absorbent layers.

2. A pad as claimed in claim 1, wherein the sealing means comprise edge portions of the bottom impervious layer folded up and inwardly and bonded over the edge portions of the permeable membrane.

3. A pad as claimed in claim 1, wherein the pad is of substantially rectangular plan form.

4. A pad as claimed in claim 3, wherein said window is substantially central of one of the two longer sides.

5. A pad as claimed in claim 1, wherein at least the lower absorbent layer has a colloid impregnated therein.

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6. A pad as claimed in claim 5, wherein the colloid is impregnated in a band across the pad and spanning said window.

7. A pad as claimed in claim 5, wherein said colloid is methyl cellulose.

8. A pad as claimed in claim 1, wherein the upper absorbent layer is thinner than the lower absorbent layer.

9. A pad as claimed in claim 1, wherein the upper absorbent layer is of plied absorbent paper.

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10. A pad as claimed in claim 1, wherein the lower absorbent layer is of plied absorbent paper.

11. A pad as claimed in claim 1, wherein the lower absorbent layer is of wood pulp.

5 12. A pad as claimed in claim 1, wherein said permeable membrane is of hydrophobic fabric.

13. A pad as claimed in claim 12, wherein said permeable membrane is of knitted polypropylene.

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