

[54] **DIAPERS, DISPOSABLE DIAPERS AND DISPOSABLE DIAPERS WITH WATER-PROOF LAYER**

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[58] Field of Search..... 128/284, 287

[56] **References Cited**

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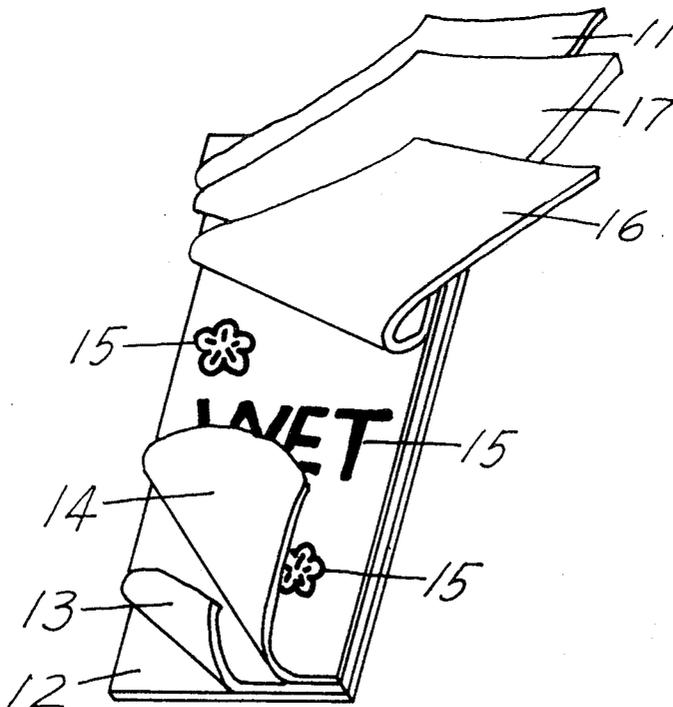
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[57] **ABSTRACT**

A diaper which is capable of providing a readily visible indication when wet includes an inner layer of absorbent material, a layer carrying a printed pattern, and at least one outer layer which is of sufficient density as to conceal the printed pattern when the diaper is dry while rendering the printed pattern readily visible when the diaper is wet.

6 Claims, 3 Drawing Figures



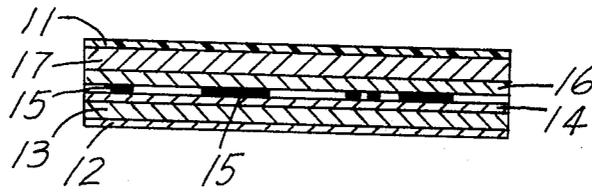
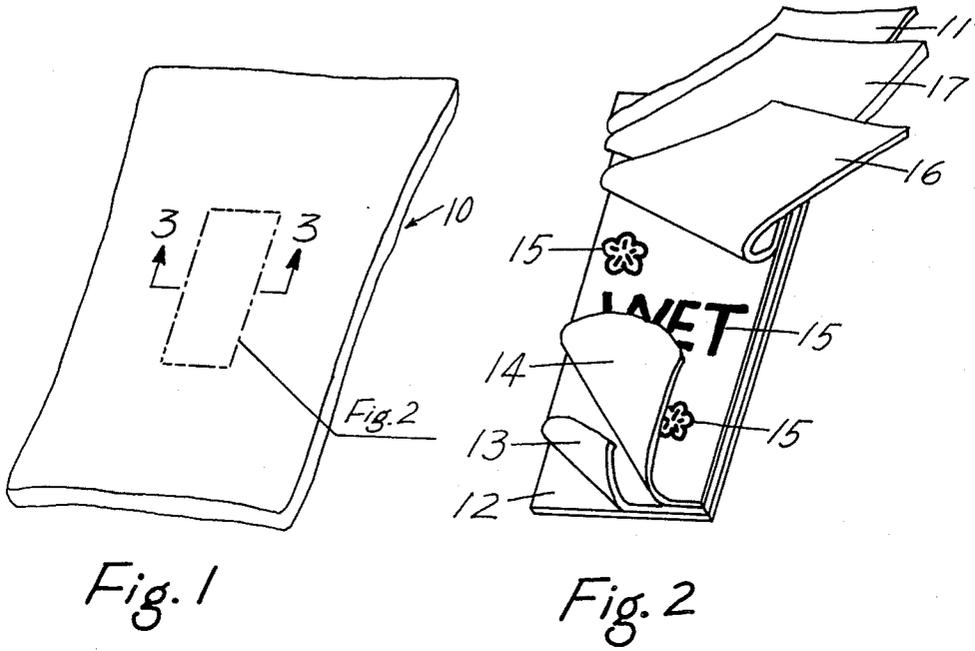


Fig. 3

DIAPERS, DISPOSABLE DIAPERS AND DISPOSABLE DIAPERS WITH WATER-PROOF LAYER

The present invention relates to diapers, and more particularly, the present invention relates to diapers which are capable of providing a readily visible indication when they are wet.

It is known that adults sometimes have difficulty in determining whether or not a diaper on a baby is wet or dry without disturbing the baby, and if the baby is asleep, it may be awakened inadvertently. According, a diaper which is capable of providing a readily visible signal when wet and in need of being changed is highly desirable.

With the foregoing in mind, it is a primary object of the present invention to provide a diaper having novel means for providing a readily visible indication when wet so that an adult can tell whether or not the diaper needs to be changed without disturbing a baby wearing the diaper.

More specifically, the present invention provides a diaper which possesses the outward appearance of an ordinary diaper when dry but which displays a readily visible pattern when wet. The diaper includes an inner layer of absorbent material, a carrier layer of material on which the pattern is printed and which is superimposed on the inner layer, and an outer layer overlying the printed carrier layer. The carrier layer is preferably of a light color, and the printed matter is of a color which contrasts therewith. The outer layer is of a light-colored material and is of sufficient density as to conceal the printed matter when dry while permitting the printed matter to be readily visible when the outer layer is wet. An adult is thereby able to determine whether or not the diaper needs to be changed simply by inspecting the diaper without disturbing its wearer.

These and other objects, features and advantages of the present invention should become apparent from the following description when taken in conjunction with the accompanying drawing, in which:

FIG. 1 is a perspective view of a diaper embodying the present invention;

FIG. 2 is an enlarged perspective view of the area enclosed by broken lines in FIG. 1 but with layers of the diaper peeled away to expose printed matter on one layer; and

FIG. 3 is an enlarged cross sectional view taken along line 3—3 of FIG. 1.

Referring now to the drawing, there is illustrated in FIG. 1 a diaper 10 embodying the present invention. The diaper 10 has the outward appearance of a conventional diaper when it is dry; however, the diaper 10 is capable of providing a readily visible display or signal when it is wet. As a result, an adult is able to determine whether or not the diaper 10 needs to be changed simply by inspecting the outside of the diaper 10 without the necessity of disturbing a baby wearing the same.

As best seen in FIG. 2, the diaper 10 is preferably of the disposable type and comprises a plurality of layers of cloth or paper material underneath an outermost layer 11 of translucent water-impervious material. As may be seen in FIG. 3, the diaper 10 has an innermost layer 12 which is normally disposed against the body of the baby in the customary manner, and an inner layer of absorbent material 13 superimposed on the innermost layer 12 for absorbing the baby's excrement. A conventional disposable diaper would include the lay-

ers 11 and 12 and 13, and the diaper would function in the customary manner. Such a diaper may be termed a disposable diaper with a waterproof layer (DDWL). of course, it should be understood that the present invention may be incorporated in conventional washable diapers or disposable diapers without waterproof layers.

According to the present invention, the diaper 10 is provided with means for providing a readily visible display or signal when it is wet. For this purpose, a carrier layer of material 14 is superimposed on the absorbent layer 13, and a pattern 15 is imprinted on the carrier layer 14. As may be seen in FIG. 2, the pattern 15 may include floral patterns or the like, and the color of the printed pattern 15 is selected to contrast with the color of the underlying carrier layer 14. Preferably, the printed pattern 15 is dark relative to the carrier layer 14, and it is desirable for the colors of the printed pattern 15 to be insoluble and otherwise unaffected by excrement, including urine.

In order to mask the printed pattern 15 when the diaper 10 is dry, while permitting the printed matter 15 to appear when the diaper 10 is wet, at least one outer layer 16 and preferably a plurality of layers or sheets of loose and light cloth, paper, or paper like material 16 and 17, depending upon the density of the material forming each layer, covers the carrier layer 14 and conceals the pattern 15. The color of the material forming the sheets 16 and 17 is preferably light relative to the pattern 15 and, in the present instance, the pattern 15 is dark so as to contrast with the sheets 16 and 17. It is noted that the pattern 15 may be printed on either the inside or the outside of the carrier layer 14. The outer layers 16 and 17 also absorb excrement as does the innermost layers 12 and 13. By virtue of this structure, the outer layers 16 and 17 prevent the printed pattern 15 from being visible from the top or outside of the diaper 10 when the diaper 10 is dry; however, the layers 16 and 17 permit the pattern 15 to be readily visible from outside the diaper when the diaper 10 and particularly the outer layers 16 and 17 are wet. Accordingly, an adult is able to determine whether or not the diaper 10 needs to be changed simply by inspecting the diaper without disturbing the baby.

In view of the foregoing it should be apparent that there has now been provided an improved diaper which is capable of providing a readily visible indication when it is wet. The diaper preferably includes at least one inner layer, a carrier layer on the inner layer, and an outer layer on the carrier layer, each of which is capable of absorbing excrement. The present invention may be incorporated in diapers of conventional construction materials.

While a preferred embodiment of the present invention has been described in detail, various modifications, alterations or changes may be made without departing from the spirit and scope of the present invention as defined in the appended claims.

I claim:

1. A diaper capable of providing a readily visible indication of a wetness condition of the body underneath the diaper, comprising: a carrier layer of material, means providing at least one color on said carrier layer, and means covering said color with said color contrasting with said covering means and said covering means being of a density for rendering said color substantially invisible when said covering means is dry while render-

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ing said color visible when said covering means is wet, said color being dark relative to said carrier layer and said covering means including an outer layer of relatively light-colored material overlying said dark color to mask said color when said outer layer is dry, said color being disposed in a pattern on one side of said carrier layer and being water insoluble, whereby the condition of the body beneath the article may be readily determined upon inspection of the covering means.

2. A diaper according to claim 1, wherein said pat-

tern is printed on said carrier layer.

3. A diaper according to claim 2 wherein said one side of said carrier layer faces outwardly.

4. A diaper according to claim 2 wherein said one side of said carrier layer faces inwardly.

5. A diaper according to claim 1 wherein said covering means is fabricated of a low-density material.

6. A diaper according to claim 1 including at least one absorbent layer underlying said carrier layer and a waterproof layer overlying said covering means.

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