

[54] INCONTINENCE DEVICE

[76] Inventor: Mable M. Sanford, 473 Noe Street,  
San Francisco, Calif. 94114

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[51] Int. Cl. .... A61F 5/44

[58] Field of Search .... 128/286-288, 295

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Primary Examiner—Charles F. Rosenbaum  
Attorney—Boyken, Mohler, Foster & Schwab

[57] ABSTRACT

An incontinence device formed from an elongated sheet of flexible, planar, waterproof material having a front panel, an intermediate panel, and a rear panel.

The front panel is formed to extend over the pubic area between the furrows of the groin, and the rear panel is formed to extend partially over the buttocks, while the intermediate panel is formed to extend from the front panel, between the legs, to the rear panel and to form a receptacle for moisture absorbent material and to receive the genital organs. The sheet is gathered to an elastic strip along its edges that extend between the front panel and rear panel to provide yieldable expansion.

The intermediate panel is folded along lines extending generally longitudinally of the sheet in a direction away from the front panel to provide pleat-like walls that are expandable transversely of the sheet for the genital organs and moisture absorbent material, and a relatively wide transversely extending pleat extending between the side edges of the intermediate panel provides a pair of opposed walls defining opposite sides of a forwardly opening recess to receive and restrict rearward flow of moisture within the forward portion of the receptacle toward the rear panel.

The front panel is held in position by elastic bands releasably secured thereto and to the rear panel, to releasably hold the device in position, and to permit forward dropping of the panel to remove moisture laden material and to enable replacement without removal of the device.

5 Claims, 6 Drawing Figures

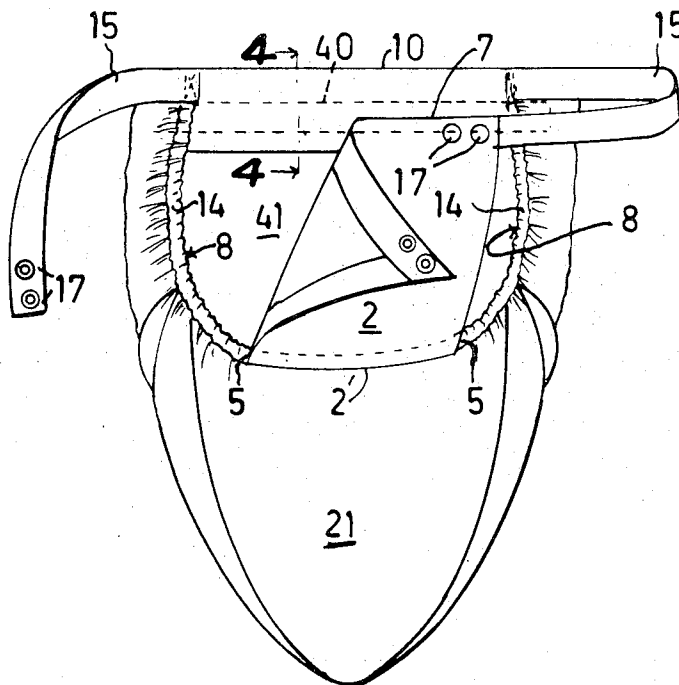


FIG. 1

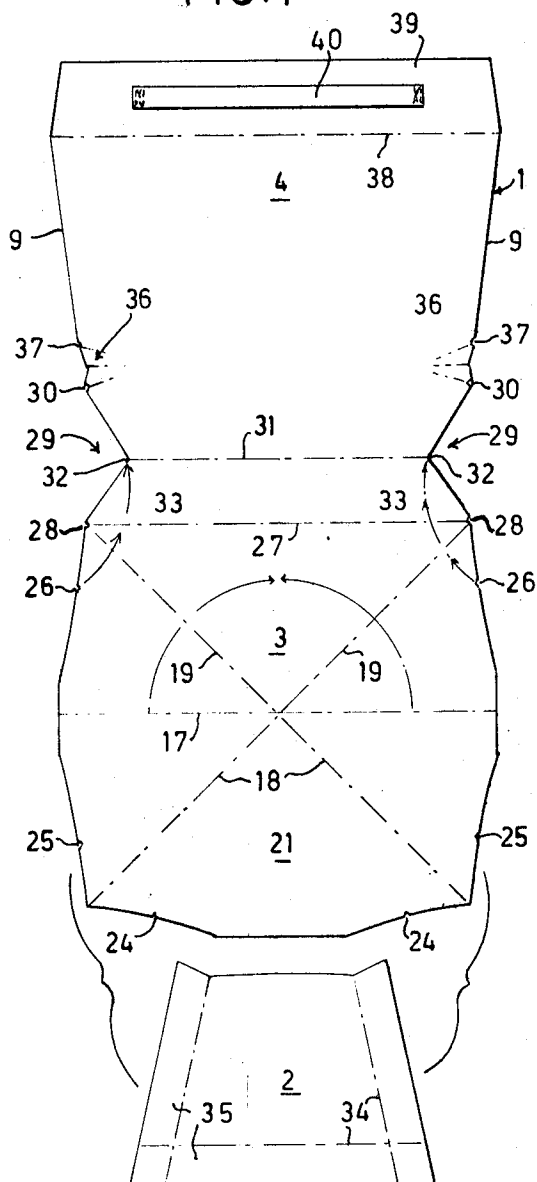


FIG. 4

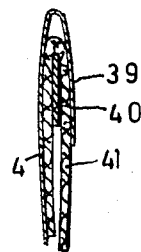


FIG. 2

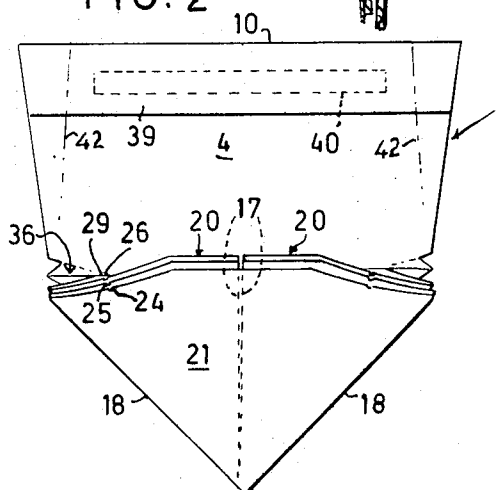


FIG. 3

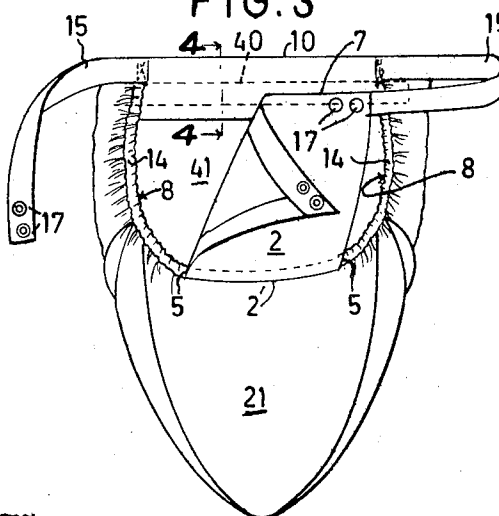


FIG.5

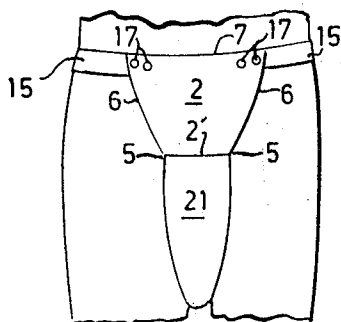
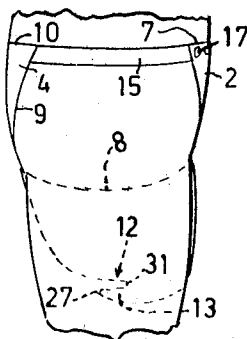


FIG.6



INVENTOR.

**Mable M. Sanford**

BY

Boykin, Mohler, Foster & Schwalb.

**ATTORNEYS**

## INCONTINENCE DEVICE

## BACKGROUND OF THE INVENTION

Heretofore, devices for use by men suffering from what is medically known as incontinence, or the inability to control the natural evacuation of urine, have generally been in the form of molded receptacles that are uncomfortable, difficult to empty and relatively ineffective for preventing undesirable spread and escape of urine in different positions of the wearer, particularly when prone on the side or back.

## SUMMARY OF INVENTION

One of the objects of the invention is the provision of an incontinence device to be worn at all times by a person requiring it, which device is economical to make, being formed from a planar sheet of highly flexible, waterproof sheet material, comfortable to wear, easy to position on the body and to remove, and effective for preventing escape of urine irrespective of the position of the wearer, whether prone on either side or back, or sitting or standing.

Another object of the invention is the provision of an incontinence device to be worn by a person, and which device provides a pouch-like portion of highly flexible, waterproof, sheet material adapted to enclose the male genital organs and moisture absorbent material, and is formed to provide a trap or barrier against drainage of urine rearwardly in the device when the person is lying prone on the side or back.

A still further object of the invention is the provision of an incontinence device which, when worn by an active man when fully dressed in street wear is not discernible from outward appearance, and in which device, the moisture absorbent material placed therein may be readily removed and replaced without removing outer garments from the body.

Other objects and advantages will appear in the description and drawings.

## DESCRIPTION OF DRAWINGS

FIG. 1 is a plan view of a pattern for the device, with fold lines being indicated in dot-dash lines, and the front panel to be connected to the remainder of the sheet being shown separated from the remainder.

FIG. 2 is a plan view of the pattern of FIG. 1 partially folded along the fold lines indicated in FIG. 1, with the opposite end edges of the central pleats purposely shown as being offset relative to each other for clarity in showing the over folded parts. The front panel is not shown attached to the sheet in order to more clearly show the folded parts of the intermediate panel.

FIG. 3 is a perspective view of the completed device as seen from the front with one of the elastic straps disconnected from the front panel and with one side of the front panel swung forwardly to show the structure behind it.

FIG. 4 is an enlarged, cross-sectional view at line 4-4 of FIG. 3, the thickness of parts being somewhat exaggerated to show structure.

FIG. 5 is a reduced size front view of the device of FIG. 3 on a person.

FIG. 6 is a side view of the device when on a person, the dotted lines indicating the portion extending between the legs and also the main pleat that is shown in FIG. 2.

## DETAILED DESCRIPTION OF INVENTION

The main body of the device comprises a planar sheet 1 (FIG. 1) of flexible, waterproof, tough plastic material that is unaffected by contact with excreta and body moisture.

Said sheet includes a front panel 2 (FIG. 1) intermediate panel 3 and a rear panel 4. While the front panel 2 may be made integral with the intermediate panel, by making it separate and inseparably connecting it with the intermediate panel along line 2' (FIGS. 3, 5) the device is stronger at points 5, where otherwise special reinforcement against strain would be desirable. In FIG. 1 the front panel is shown detached from the main sheet.

The front panel 2 in the completed device will extend over the front of the body to the genitals, generally following the furrow of the groin along its side edges 6 (FIG. 5) and terminating in a free horizontally-extending upper end edge 7. Said side edges 6 extend convergently downwardly for a distance, so that, when the device is on the wearer, the convergent ends of the side edges will be at the front of the body at points 5, (FIGS. 3, 5) in a male where the groin furrow is approximately at opposite sides of the upper portion of the genital organs.

The intermediate panel 3 which, in the completed device, extends over the genital organs, and between the legs of the wearer. Said panel 3 has side edges 8 (FIGS. 3, 6) that substantially follow the outline of the crotch with the section 3 enclosing the genital organs and depending between the legs, and said side edges 8 respectively join the side edges 9 (FIG. 2) of the rear panel 4 that extend upwardly over the buttocks of the wearer, to terminate in a horizontal rear edge 10 (FIG. 6).

The intermediate panel 3 is formed with a relatively wide pleat generally designated 12 that extends across the sheet between the side edges 8 (FIG. 6) which pleat forms a forwardly opening recess 13 that functions as a barrier and as an elongated pocket to prevent urine ahead of it from draining rearwardly past the recess at all times and particularly when the wearer is lying on the side or prone on the back.

Stretched elastic strips 14 (FIGS. 3, 5, 6) enclose edges 8 and are sewed thereto, and when released, provide gathers permitting expansion of the portions to which the strips are secured from front to rear of a person and, when tensioned, said strips are in sealing relation along the opposed inner sides of the legs along the crotch and up the outer sides of the buttocks. Also, said elastic strips, when so tensioned, draw the front panel snugly against the groin at points 5 to prevent leakage past these points. An ungathered intermediate portion of strip 14 extends across the front of the device between points 5 and the ends of strip 14 are secured to the rear panel at the ends of edge 10.

Elastic bands 15 (FIGS. 3-6) are secured at one of their ends to the rear panel at the ends of the upper edge 10 of the latter, and the opposite end portions of bands 15 extend forwardly from the ends of edge 10 (FIGS. 3-6) to extend across opposite sides of the body of the wearer. The forward ends of said bands are releasably secured by one of the elements of conventional snap fasteners 16 to complementary portions secured on the front panel 2 adjacent to the ends of upper edge 7 of said panel.

In further explanation of the manner in which the device of FIGS. 3-6 is formed, the lower part of the intermediate panel 3, as viewed in FIG. 1, is folded on itself along a horizontal line 17 and along lines 18, 19 that extend at a right angle to each other from a point centrally between the ends of line 17. This forms a pair of relatively large triangular pleats 20 (FIG. 2) disposed behind the triangular portion 21, which portion lies between the downwardly divergent pair of lines 18 seen in FIG. 1. In FIG. 2 the triangular portion 21 overlies pleats 20. The convergent ends of lines 18 and lines 19 are at a point centrally between the ends of fold line 17.

When pleats 20 are formed as above described, the portions of fold line 17 at opposite sides of the central point between its ends will be generally vertical (FIG. 2) and edge notches 24 (FIGS. 1, 2) in the free end edge of portion 21, at one side of the divergent ends of lines 18, will be in alignment with similar notches 25 at the opposite sides of the divergent ends of lines 18. Also, the sets of notches 24, 25 will be in alignment with notches 26 that are in the side edges of the intermediate panel adjacent to the divergent ends of lines 19.

One of the fold lines of the wide pleat 12 is along fold line 27 that, in turn, extends horizontally across sheet 1 between notches 28, which notches are at the divergent ends of fold lines 19.

The side edges of the intermediate panel 3 are formed with relatively deep laterally outwardly opening recesses 29 (FIG. 1), the outer ends of the lower divergent sides, as viewed in FIG. 1, being at notches 28, which are at the ends of fold line 27. The other sides of recesses 29 are slightly longer than the sides extending from notches 28 and said other sides terminate in notches 30. A fold line 31, parallel with line 27, extends between the apices 32 of recesses 29 and the pleat 12 is formed by folding the portion between lines 27, 31 in FIG. 1, downwardly and forwardly from the position shown in FIG. 1 to a position in which notches 26 are aligned with the apices 32 of recesses 29. As the distance between the apices of recesses 29 is less than the distance across the sheet between notches 28, the forwardly opening recess 13 (FIG. 6) will be formed when the free edges between notches 24, 25, 26, 28 and apices 32 are gathered within and secured within transversely folded elastic strip 14.

Pleats 20 extend generally longitudinally of the device, or from their juncture at 2' with the front panel rearwardly, and the pouch portion forwardly of the transverse pleat 12 is expandable laterally between said pleat 12 and the front panel 2 to carry moisture absorbent material for the genital organs. Pleat 12 is also expandable to a degree, but always performs the function of providing a forwardly opening recess insuring against rearward movement of moisture when the wearer is standing, seated, lying prone on the back or lying on either side. Obviously the pouch-like portion extending upwardly to groin furrow from the lowermost part of said portion retains moisture that may be on the bottom of said portion.

The upper edge 10 of the rear panel 4 is coincidental with fold lines 38 (FIG. 1) along which line the marginal portion 39 is folded to overlie the inner side of the body of the rear panel. A flexible strap 40 between said

marginal portion 39 and the body of the rear panel is secured at its ends to said marginal portion to provide a hanger over which a soft fabric piece 41 (FIG. 4) is hung, and from which such piece is suspended. The width of said piece 41 is preferably the full length of the hanger or strap 40, and may extend over the buttocks of the wearer to the pleat 12. This piece 12 provides a soft pad against the buttocks, and is of moisture absorbent material.

The piece or pad 40 is positioned on and readily removed from the hanger 40, and any moisture absorbent material ahead of pleat 12 is readily removable and replaceable when the forward ends of bands 15 are detached from the front panel 2, and the latter is dropped. This latter removal and replacement can readily be accomplished without removing the device from the wearer and without removal of the wearer's clothing.

The upper lateral portions of the rear panel 4 are preferably folded over the inner side of the rear panel substantially along fold lines 42 and secured to the rear panel at the upper edge of the rear panel. The result of this, together with the gathering of the elastic and edges 8 when the elastic strip 14 is secured over said edges 8, is that the edges 8 along the elastic strip 14 closely engage and follow the contour of the crotch along the inner sides of the legs while providing a pouch therebelow that is free from tension and has a relatively larger capacity.

The material of the sheet 1 and panel 2 may be of the waterproof type having a soft flannel-like outer surface coating integral therewith, or any other suitable moisture-proof material.

The reference to and disclosure of "notches" such as 24 - 28, 30, 37 is merely for the purpose of clarity in the description of the formation of the device from a planar sheet, and particularly the formation of the pleats 12 and 20.

I claim:

1. An incontinence device to be worn by a wearer;
  - a. an elongated sheet of flexible, waterproof material having a front panel, an intermediate panel and a rear panel respectively adapted to extend over the pubic area, between the legs, and over the buttocks of a person when in operative position on such wearer,
  - b. said intermediate panel having corresponding side edges extending longitudinally of said sheet extending between said front panel and said rear panel yieldably extensible to engage the inner surfaces of the legs along the crotch, and a pouch-like portion depending from said edges and from said front panel to receive the genital organs of said wearer and to hold a supply of moisture-absorbent material when in said operative position,
  - c. a transversely-extending, forwardly opening pleat in said sheet extending continuously thereacross between said side edges spaced between said rear panel and said front panel over which such absorbent material is adapted to extend when in said portion to restrict rearward passage of moisture deposited onto said sheet in said pouch-like portion ahead of said pleat.
2. In a device as defined in claim 1;

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d. a pair of pleats formed in said intermediate panel at opposite sides of a medial line extending longitudinally of said sheet adjacent to said front panel and between said front panel and said transversely-extending pleat.

3. In a device as defined in claim 2;

e. an elastic strip secured to said sheet along said side edges, said strip and said edges being gathered to enable yieldable extension of said edges, said strip extending to opposite edges of said front panel at points adapted to be positioned at the lower ends of the groin furrows of said wearer to yieldably draw said points toward said lower ends of said groin furrows when said device is on said wearer,

f. a pair of elastic bands extending between the rear panel and said front panel for yieldably holding said rear panel and said front panel against the buttocks and pubic area when said intermediate panel

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extends between the legs of the wearer, and

g. means for releasably securing one of the ends of said bands to said front panel adjacent the terminal outer end thereof whereby said front panel may be dropped for replacement of moisture material within said pouch-like portion without removing said device from the wearer.

4. In a device as defined in claim 1;

d. means on said rear panel adjacent to one terminal end of said sheet for releasably holding a moisture-absorbent pad thereon in a position extending from said rear panel to said transversely extending pleat.

5. In a device as defined in claim 4;

e. a moisture-absorbent pad removably held on said last-mentioned means.

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