

Feb. 13, 1968

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3,368,562

ONE-PIECE FOLDED DIAPER

Filed Nov. 16, 1964

2 Sheets-Sheet 1

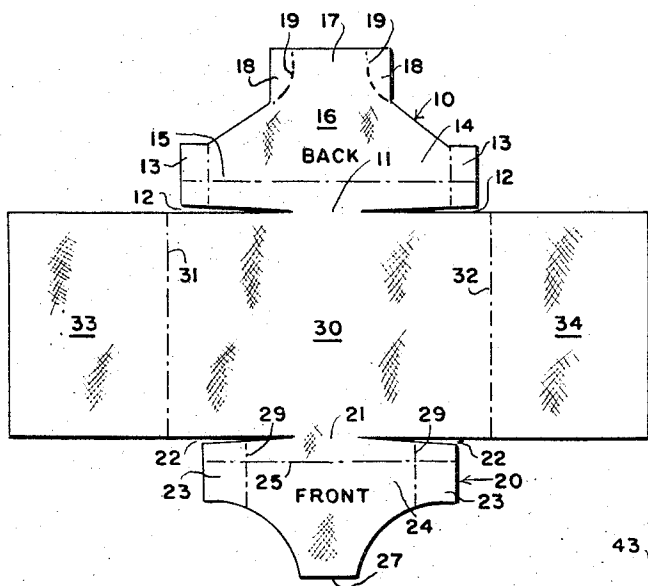


FIG. 1

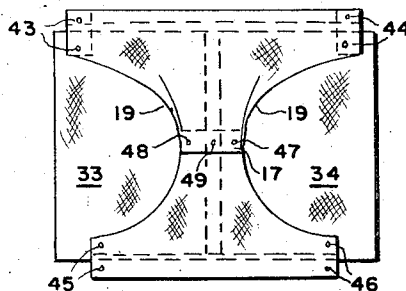


FIG. 3

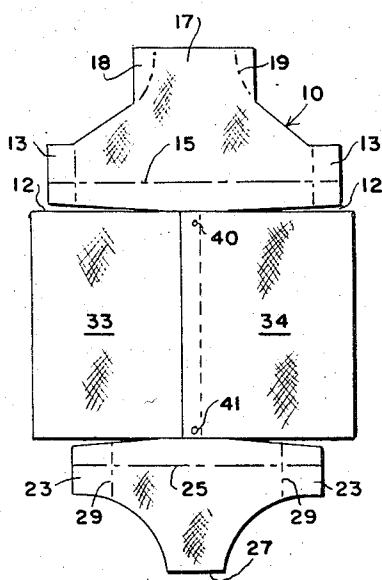


FIG. 2

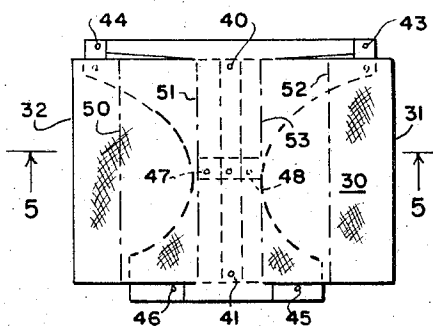


FIG. 4

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2 Sheets-Sheet 2

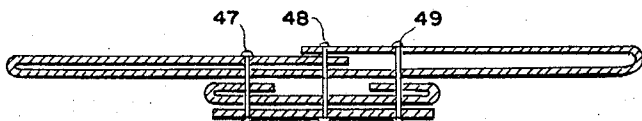


FIG. 5

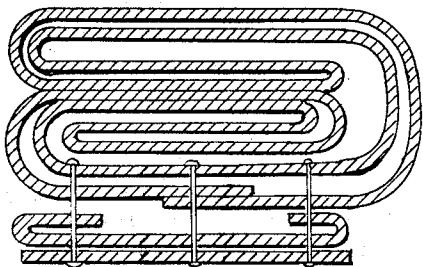


FIG. 7

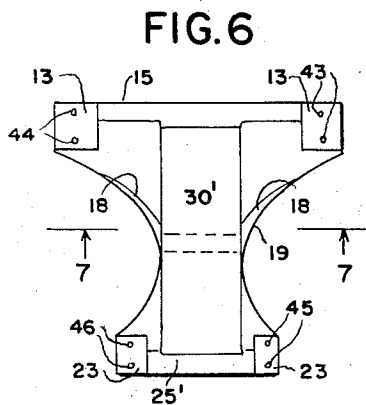


FIG. 6

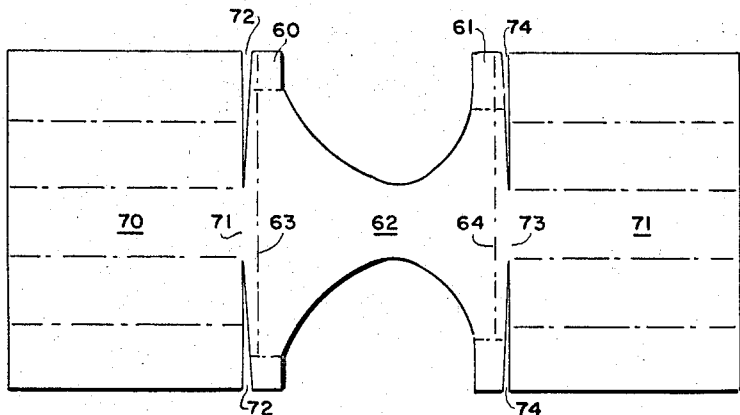


FIG. 9

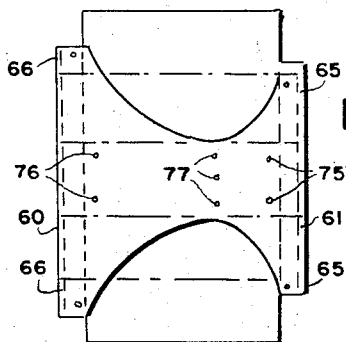


FIG. 10

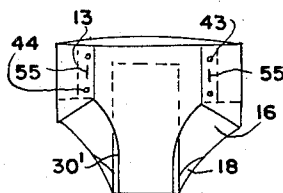


FIG. 8

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ONE-PIECE FOLDED DIAPER

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ABSTRACT OF THE DISCLOSURE

A one-piece fabric diaper which is folded to form a form-fitting garment having an integral multi-ply pad element.

This invention relates to a diaper of the type having a plurality of thicknesses in the central area with a reduced number of thicknesses in the area surrounding the waist where the diaper is pinned together or attached.

It is common practice to combine three or four diapers in clothing an untrained baby especially when the diapers are to be covered with rubber pants. The plural thickness of diaper provide some additional comfort for the baby but are too bulky in the area where the ends or edges thereof are to be pinned or attached.

Among the objects of the invention is to provide a diaper having a padding in the central area which is equivalent to that of four or more superposed diapers and yet having easily attached edge portions.

Among other objects of the invention is to provide a diaper having an integral padding in the central area which is equivalent to four or more superposed diapers but which when applied to a baby has the appearance of not being heavier than a single diaper.

Among other objects of the invention is to provide a diaper of the type described which launders readily.

These and other objects are attained by providing a diaper with front and back waistband sections having bias cut portions connected at their narrow ends, and with a panel section extending laterally with respect to the connected portion of the waistband sections and attached only to the central portions of the two waistband sections whereby the panel sections may be folded at least once to form a pad of plural thickness extending between the central portions of said two waistbands.

The diaper is advantageously made from a single piece of diaper cloth, but it is also possible is desired, to form the waistband sections from some cloth other than diaper cloth and unite them to the panel sections which are obviously made of diaper material.

The novel features of the invention will be understood and more fully appreciated from the following description of specific embodiments thereof, particularly when considered in connection with the accompanying drawings wherein:

FIG. 1 is a plan view of a fabric blank as it is cut to produce a preferred type of diaper according to the invention.

FIG. 2 is a plan view, similar to FIG. 1, showing the first step in making the diaper.

FIG. 3 is a plan view of the outside of the diaper showing the diaper as it appears after laundering.

FIG. 4 is a plan view similar to FIG. 3 but of the inside of the diaper.

FIG. 5 is a diagrammatic cross sectional view taken on line 5—5 of FIG. 4 showing the folds of the diaper.

FIG. 6 is a plan view of the diaper from the inside as it is prepared for applying to the baby.

FIG. 7 is a cross sectional view taken on line 7—7 of FIG. 6 showing the folds of the pad region.

FIG. 8 is a front view of the diaper of FIG. 6 as applied to a baby.

FIG. 9 is a plan view of a modified form of the diaper.

FIG. 10 is a view similar to FIG. 3 of the modified form of diaper produced from the blank of FIG. 9.

In the drawings, it is desirable to show both certain prospective fold lines and the outline of parts obscured by other parts and in order to avoid confusion the obscured lines are shown as dotted, while prespective fold lines are shown by dot-dash lines.

The diaper blank of FIG. 1 comprises the back portion 10, the front portion 20 and the panel portion 30. The back portion 10 is connected to the pad or panel portion 30 only by the narrow region 1, slits 12, having been cut from the sides up to the narrow region 11. All cutting of such slits and edges of the diaper is advantageously done with pinking shears in order to avoid unravelling of the edges, but such edges are shown as straight to simplify the showing. The back 10 includes a waistband region 14, extending on either side of the prospective fold line 15, and the portion 16 for connecting to the front portion. The end 17 of the back portion 10 is cut in a straight line and is wider than the corresponding end 27 of front portion 20 so that tabs 18 may be formed by folding inwardly along lines 19 for reasons to be more fully explained below. Folding the back portion along line 15 (rather than along the line between slits 12) produces a waistband of double thickness with a soft, smooth fold at the top of the waistband. Folding along line 15 rather than on the line of slits 12 also provides a flexibility and fullness between the back and the pad so that the diaper fits well even though the pad region is much thicker than the remainder of the diaper. Waistband ends 12 are also folded to provide additional strength to the pinning or attaching tabs.

The front portion 20, similar to back portion 10, has a narrow region 21 defined by slits 22, by which it is attached to pad portion 30. The waistband region 24 is adapted to be folded along line 25 to produce a double thickness waistband with a soft, smooth folded edge. Tab portions 23 can also be folded inwardly along lines 29 to provide strong, neat end tabs.

In producing the diaper from the blank of FIG. 1, the first step is to fold the panel 30 along lines 31 and 32 so that the ends 33 and 34 thereof overlap at the ends. In the diaper shown, the ends 33 and 34 are folded so as to just barely overlap along the center line of the panel 30, obviously ends 33 and 34 can be made longer and can also be made if desired to overlap in a rather wide area. With the narrow overlapping as shown, only two rivets 40 and 41 or other permanent type of fastening means (as shown in FIG. 2) are required to hold the doubled portions of the pad or panel 30 together.

After ends 33 and 34 have been attached along the center line of the diaper, back portion 10 is folded along line 15 and the waistband areas secured together by suitable rivets 43, 44 or by sewing, by adhesives, or by any other suitable attaching means. Similarly, the front portion 20 is folded along line 25 and the doubled waistband areas thereof secured together by rivets 45, 46, etc. Thereafter, the ends 17 and 27 of the back and front respectively are secured by rivets 47, 48 and 49. As will be clear from a comparison of FIGS. 3 and 4, the rivets 47, 48 and 49 extend all the way through ends 17, 27 and the two thicknesses of panel or pad member 30. Rivets 43, 44, 45 and 46, however, extend only through the double thickness of the waistbands. In securing end 17 to end 27 the tab portions 18 of end 17 are folded under and these produce an additional fullness in the seat of the resultant diaper. The diaper as shown in FIGS. 3 and 4 is completely formed as far as the manufacturing thereof is concerned, and this is the form of the diaper as it is removed from the laundering device.

It will be noted that the diaper as shown in FIGS. 3 and 4 is well suited for laundering. Thus, the panels 33 and 34 although originally fairly long as shown in FIG. 1 have been fixed in doubled position with the end edges thereof protected, the waistband portions are of double thickness, the panty part or connection portions of the waistbands are permanently connected to the pad portion 30 by rivets 47-49. When removed from a laundering device the diaper naturally assumes the flat position shown in FIGS. 3 and 4.

In use, the diaper is placed as shown in FIG. 4 and the panel portions are folded along lines 50, 51, 52 and 53 to produce the diaper with thick pad 30 as shown in FIG. 6. Waistband length 15' is longer than waistband length 25' so that the diaper can be fastened as by pins 55 at the front rather than at the sides as shown in FIG. 8. FIG. 7 gives an idea of the folds of the diaper, the thickness of each fold being exaggerated.

A modified form of diaper is shown in FIGS. 9 and 10. In this form of the device the waistbands 60, 61 are integrally connected by the bias cut portion 62. The pad or panel portion 70 is connected to waistband 60 in the narrow area 71, defined by slits 72. The panel portion 71 is connected to waistband 61 in the narrow area 73 defined by slits 74. Fold lines 63 and 64 are shown for producing front and back waist band portions of double thickness. After panel portions 70 and 71 are superposed on the waistband portions by folding along line 63 and 64 respectively, the doubled waistband layers are folded to form tabs 65 and 66 and secured together, and the panels 70 and 71 are also secured in position by rivets 75, 76. Preferably, also the central portion of the seat formed between waistbands 60 and 61 is secured to the panels 70, 71 by rivets 77. If desired, the connecting portions between waistbands 60 and 61 may be longer than panels 70, 71 so that rivets 77 may provide a looseness on the back side toward waistband 61. The diaper of FIG. 10 will be found to be substantially the same as that of FIG. 3 and it is used in the same way as the diaper of FIG. 3.

When the diapers of the invention are applied to a baby, a non-bulky panty type of diaper is provided which is equivalent in effect to at least four superposed diapers without the clumsiness or the confining thickness in regions where the absorption properties of the diaper are of no utility. The actual fabric content of the diaper is only a fractional portion of the fabric content of four diapers. It is possible by the invention to increase the effective thickness of the diaper pad far beyond that corresponding to four superposed diapers.

The features and principles underlying the invention described above in connection with specific exemplifica-

tions will suggest to those skilled in the art many other modifications thereof. It is accordingly desired that the appended claims shall not be limited to any specific feature or details thereof.

I claim:

1. In a diaper, a back waistband portion, a front waistband portion, fabric means connecting the front and back waistband portions to form the outside portion of the diaper, and a fabric pad portion wherein said front and back waistband portions, the portion connecting the front and back waistband portions, and the pad portion are formed of a single piece of fabric, said front and back waistband portions being formed on opposite sides of said pad portions, said pad portion connected to the front waistband portion along a relatively narrow intermediate region of said front waistband portion, and the back waistband portion connected to said pad portion along a relatively narrow intermediate region of said back waistband portion, said front and back waistband portions being folded along the waistbands to produce waistbands of double thickness, means connecting the fabric connecting means together to form an intermediate portion, said pad portion freely extending on both sides of the intermediate region thereof whereby the sides of said pad portion may be folded at said intermediate portion to build a multiplicity of layers of fabric along said intermediate region extending between the front waistband portion and the back waistband portion.

2. The diaper as claimed in claim 1, having a multiplicity of layers formed by folding the sides of the pad portion to overlap in the area of the intermediate region and securing the overlapping ends to each other and to the intermediate region.

3. The diaper as claimed in claim 1 wherein the material is bias-cut and comprising tab means on the bias cut connecting means adapted to produce fullness in said bias-cut connecting means.

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