

[72] Inventor **Louis Heimowitz**
Brooklyn, New York
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 [73] Assignee **Diapants Corporation**
Brooklyn, New York
a corporation of New York

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Primary Examiner—Charles F. Rosenbaum
 Attorney—Lackebach and Lackebach

[54] **DIAPER GARMENT**
1 Claim, 9 Drawing Figs.

[52] U.S. Cl. 128/284
 [51] Int. Cl. A61f 13/16
 [50] Field of Search 128/284,
 286, 287

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ABSTRACT: Diaper-like garment which may effectively be employed on infants from the time they initially begin using diapers until such time as they are completely trained and do not require further use of diapers fabricated of a double layer of terry cloth and an outer covering of knitted material with soft cotton tufting on its inner surface to provide high absorbing qualities for large amounts of liquid without wetting through and constructed and arranged with an expansible waistband portion adapted to be held on the body without the use of safety pins, strings or other loose objects to create the appearance of a pair of pants while automatically forming a pocket in the crotch to contain solid soils.

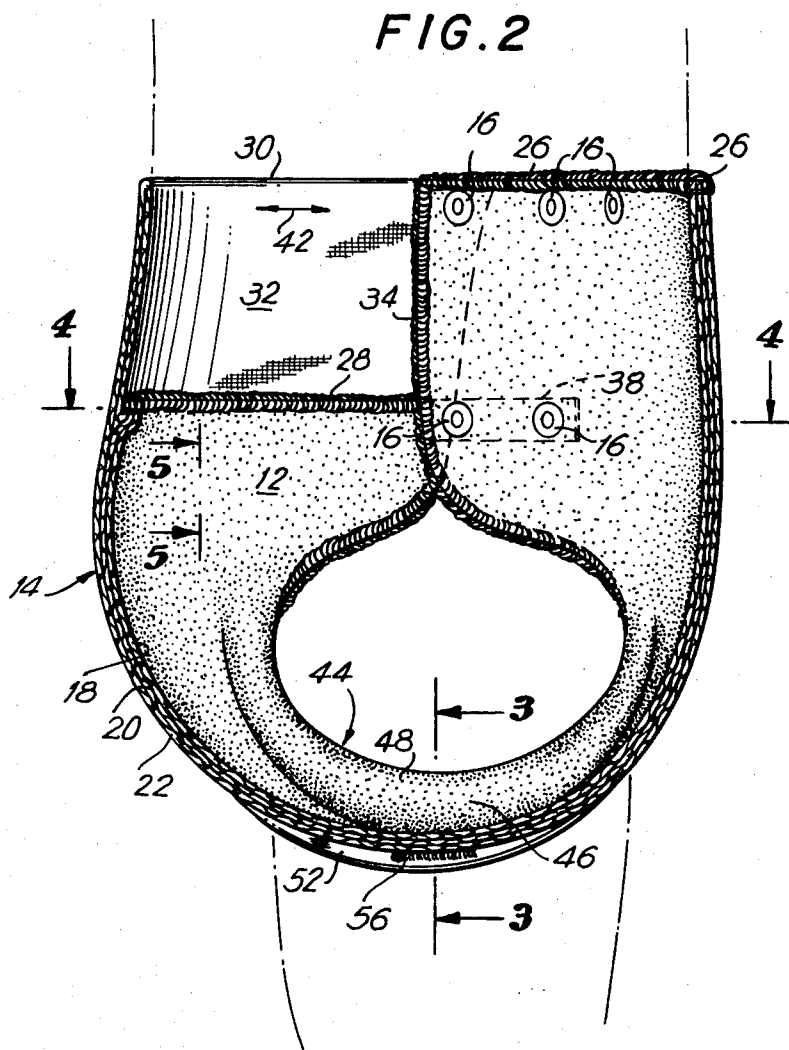


FIG. 1

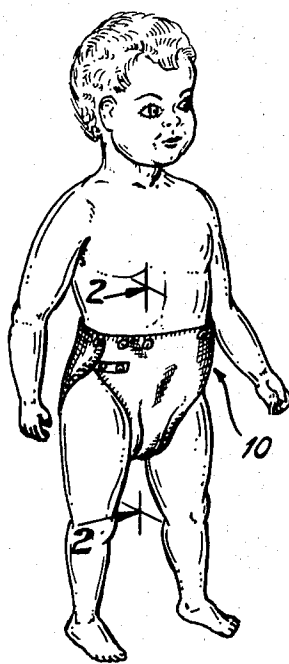


FIG. 2

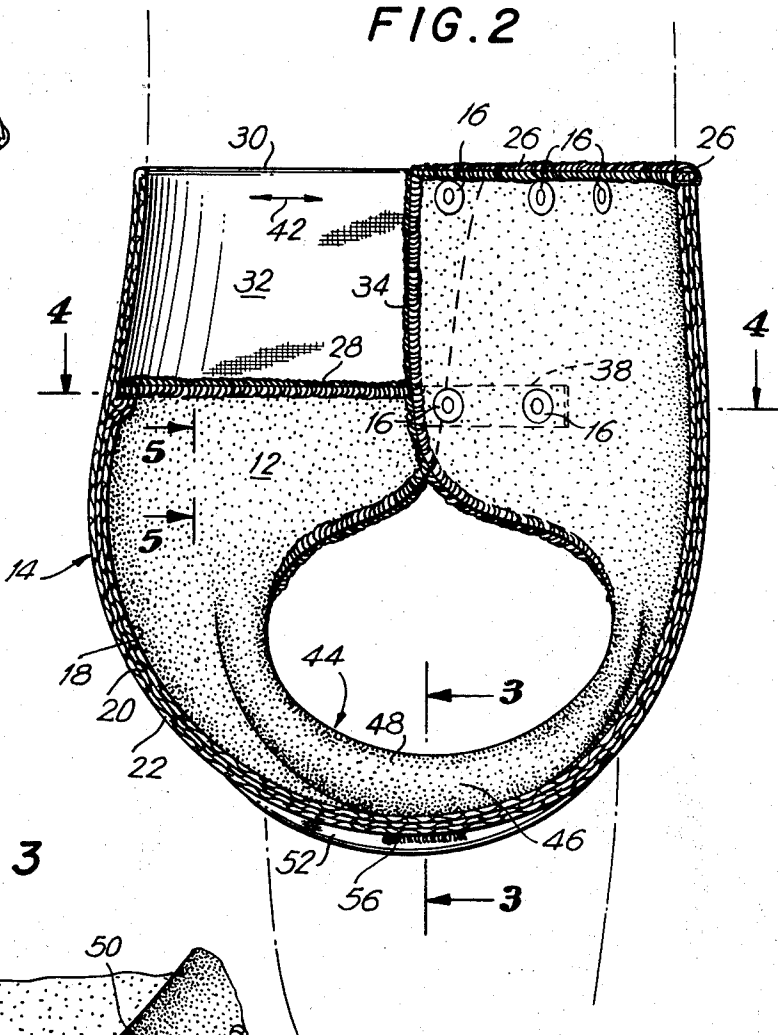
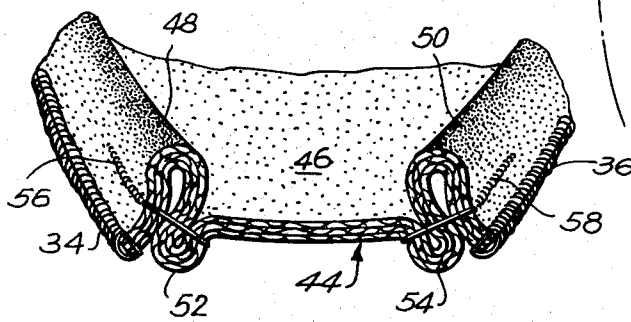


FIG. 3



INVENTOR.
LOUIS HEIMOWITZ

BY
Rackebach & Siegel
ATTORNEYS

FIG. 4

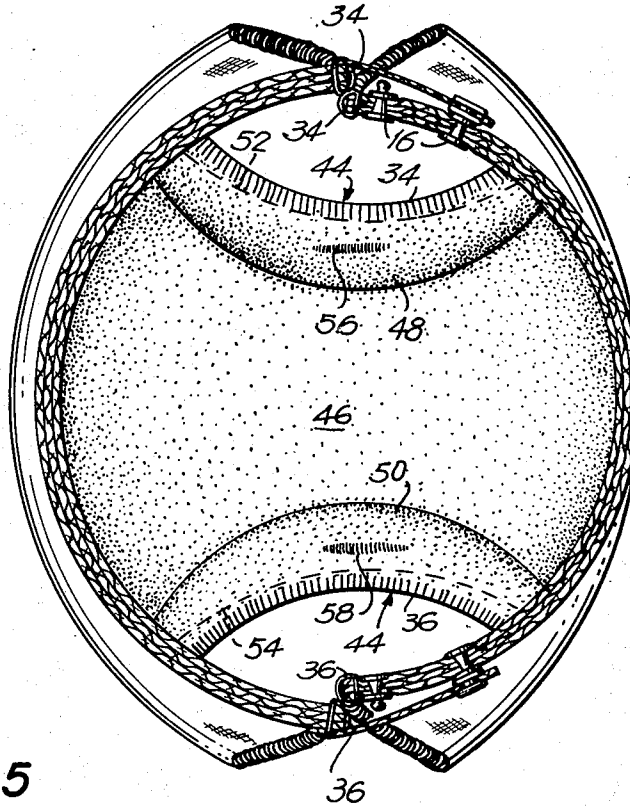


FIG. 5

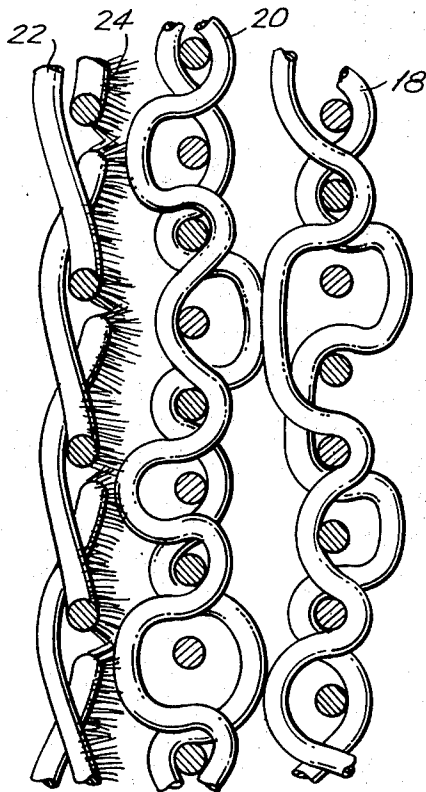
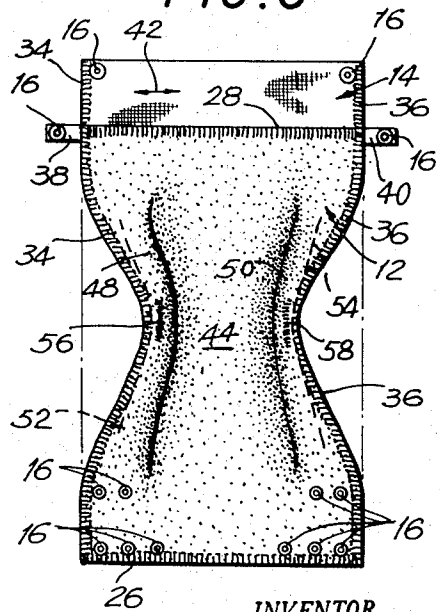


FIG. 6



INVENTOR.
LOUIS HEIMOWITZ

BY
Rackebach & Siegel
ATTORNEYS

FIG. 7

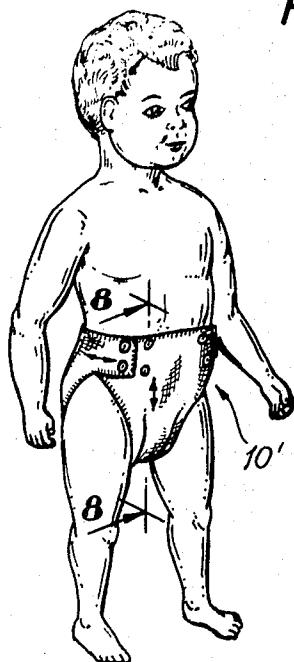


FIG. 8

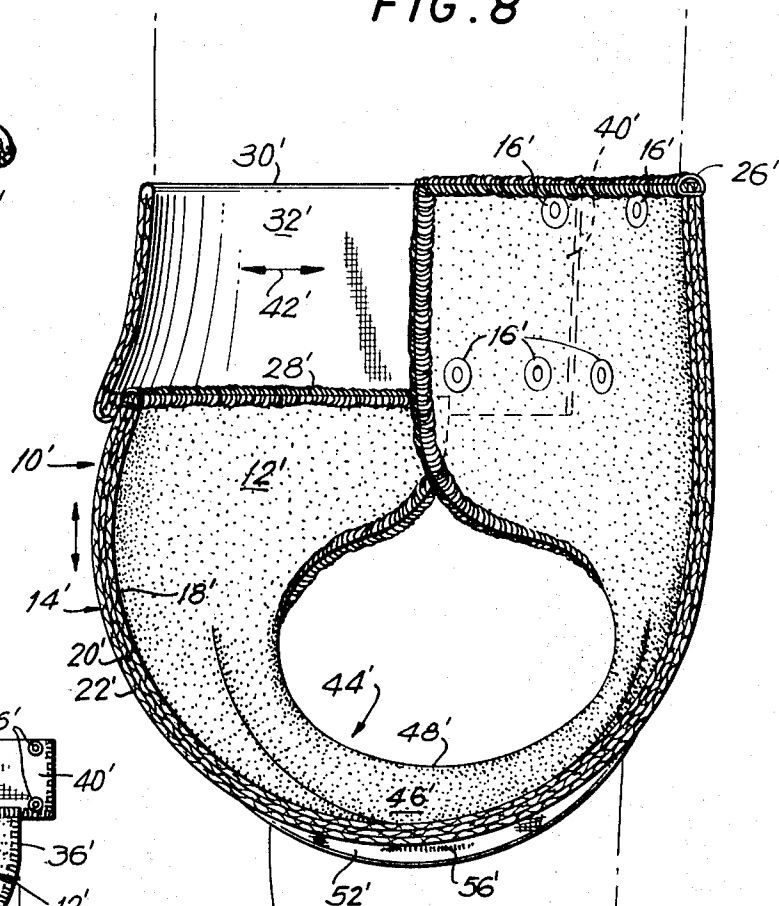
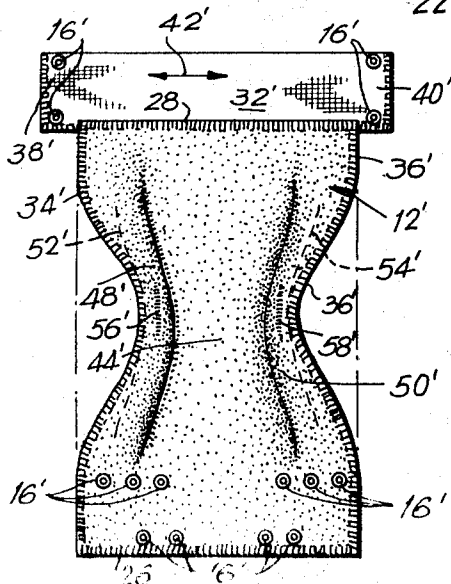


FIG. 9



INVENTOR.
LOUIS HEIMOWITZ
BY
Lackebach & Siegel
ATTORNEYS

DIAPER GARMENT

This invention relates to garments and, more particularly, to diaper-like garments especially for infants.

It is a primary object of the present invention to provide a garment, and, more particularly, a diaper-like garment for use upon infants which is simple in construction, easy to use, easy to launder, attractive in appearance, long lasting and relatively inexpensive to manufacture.

It is another primary object of the present invention, in addition to the foregoing object, to provide such a garment which when in position has a neat pants-like appearance which cannot change in shape, shift, or in any way bind the infant.

It is another primary object of the present invention, in addition to the foregoing objects, to provide such a garment of simple construction readily adapted for application to the infant without the use of pins or other detachable fasteners and which is contoured to conform with the infant's body when in use.

A further primary object of the present invention, in addition to each of the foregoing objects, is to provide such a garment which comprises an expansible waistband portion.

Still another primary object of the present invention, in addition to each of the foregoing objects, is to provide a garment of the character described which is so designed and constructed as to greatly facilitate the putting on and taking off thereof with the least possible inconvenience to the infant, and which can be washed and dried easily and quickly.

A still further primary object of the present invention, in addition to each of the foregoing objects, is to provide such a garment having very high capacity for soaking up liquids without wetting through, and which thereby precludes the necessity for utilizing rubber pants, or the like.

Another and yet still further primary object of the present invention, in addition to each of the foregoing objects, is to provide such garments which are constructed and arranged to automatically form a pocket in the crotch to hold and contain solid soils.

It is also a primary object of the present invention, in addition to each of the foregoing objects, to provide such garments which will be useful for long periods of time in that they may effectively be employed on infants from the time they initially begin using diapers until such time as they are completely trained and do not require further use of diapers.

Another and yet still further primary object of the present invention, in addition to each of the foregoing objects, is to provide such a garment which is substantially non-irritating to an infant's skin, even when wet.

A further primary object of the present invention, in addition to each of the foregoing objects, is the provision of such garments which are constructed and arranged to preclude the necessity or even possibility of "doubling-up" of diapers, thereby enabling more efficient laundering thereof.

It is a feature of the present invention that garments constructed in accordance with the principles thereof need not be smoothed, folded, or stacked after laundering, but, rather, are wrinkle-proof and may be crushed or packed haphazardly but will yet retain their proper appearance upon being unpacked.

The invention resides in the combination, construction, arrangement and disposition of the various component parts and elements incorporated in an improved garment constructed in accordance with the principles of this invention. The present invention will be better understood and objects and important features other than those specifically enumerated above will become apparent when consideration is given to the following details and description, which when taken in conjunction with the annexed drawing describes, discloses, illustrates and shows certain preferred embodiments or modifications of the present invention and what is presently considered and believed to be the best mode of practicing the principles thereof. Other embodiments or modifications may be suggested to those having the benefit of the teachings herein, and such other embodiments or modifications are intended to be reserved especially as they fall within the scope and spirit of the subjoined claim.

In the drawing:

FIG. 1 is a view of an infant wearing a garment constructed in accordance with the principles of the present invention;

FIG. 2 is a cross-sectional, side elevational view of the garment of the preceding figure taken along line 2-2 of FIG. 1;

FIG. 3 is a partial cross-sectional, front elevational view taken along line 3-3 of FIG. 2;

FIG. 4 is a cross-sectional plan view taken along line 4-4 of FIG. 2;

FIG. 5 is an enlarged cross-sectional schematic illustration, taken along line 5-5 of FIG. 2;

FIG. 6 is a view, looking from the inside, of the garment of the preceding figures before being wrapped around an infant and illustrating in phantom the appearance of the garment in an intermediate step of manufacture thereof;

FIG. 7 is a view of an infant wearing another garment constructed in accordance with the principles of the present invention;

FIG. 8 is a cross-sectional side elevational view of the garment of the preceding figure taken along line 8-8 thereof; and

FIG. 9 is a view similar to FIG. 6 illustrating the garment of FIGS. 7 and 8.

With reference now to the drawing, and particularly to FIGS. 1-6 thereof, there is shown and illustrated a diaper-like garment constructed in accordance with the principles of the present invention and designated generally by the reference character 10 adapted to be positioned upon the body of an infant in the conventional position without requiring the use of pins, ties, or the like, to be retained in such position without binding or otherwise irritating the infant and to provide an aesthetically appealing garment having the configuration of a pair of pants which will always look neat and trim, without unsightly bulges and which fits snugly on the infant without slipping, riding, or the like.

The garment 10 comprises an inner high absorbency structure 12 and an outer generally smooth appearing structure 14. A plurality of separable fasteners 16 are provided for removably adjustably securing the garment 10 in the appropriate position upon the body of an infant.

The inner structure 12 comprises at least one layer of highly absorbent fabric, and may, for example, preferably comprise two layers 18 and 20 of a fabric such as terry cloth in superposed position, as shown. The outer structure 14 also comprises at least one layer of fabric material and preferably comprises a single piece of knitted fabric 22, such as a knitted cotton fabric and may be provided with a soft tufting 24 on the inner surface thereof (see FIG. 5).

The sponge-like quality of the double layers 18 and 20 of terry cloth, which may, for example, comprise nine-ounce terry cloth, plus the outer covering of knit material 22 provided with the soft cotton tufting 24 on the inner surface thereof, gives the garment 10 a very high capacity for soaking up an incredible amount of liquid without wetting through. Furthermore, the high absorbing capacity of the garment 10 eliminates the need for rubber pants, since any liquids are so absorbed especially by the terry cloth layers 18 and 20 that no wetting through occurs. Furthermore, the exposed loop threads of the terry cloth, and especially the loop threads of the inner terry cloth layer 18 serve to enable a certain degree of ventilation of the baby's skin while maintaining the bulk of the garment, and the liquid entrained therein, from direct contact with the baby's skin. The knit outer layer 22, being of lesser absorbency than the inner layers 18 and 20, tends to reduce the possibility of wetting through, even when a large quantity of liquid has been absorbed by the garment 10. Additionally, the soft cotton tufting 24, provided on the interior surface of the outer layer 22, together with the terry loops extending outwardly from the outer terry layer 20 further aids in preventing wetting through.

As heretofore pointed out, the inner structure 12 comprises at least one layer of high absorbency fabric, and preferably comprises a plurality of fabric layers, for example, the two terry cloth fabric layers 18 and 20. Each of these layers com-

prises a single panel, of generally rectangular configuration, which is of substantially equal dimensional extent and which is disposed in superposed, congruent relationship to each other. The outer structure 14 preferably comprises a generally rectangular panel of knitted material, such as knitted cotton provided with tufting on the interior surface thereof. This tufting may, for example, comprise a napped surface produced by treating the knit fabric with a conventional napping roll, or the like.

The knit panel 22 is likewise preferably of generally rectangular configuration having one dimension substantially similar to one dimension of the fabric panels 18 and 20 and the other dimension somewhat greater than the other dimension of the inner fabric panels 18 and 20. The outer fabric panel 22 is disposed in superposed relationship to the inner fabric panels or layers 18 and 20, as shown in phantom in FIG. 6.

With particular reference now to FIGS. 2 and 6, the garment 10 may be fabricated by disposing the three fabric layers 18, 20 and 22 one on top of the other and securing the three layers together at the end portions, as by means of rows of over-edge stitching 26 and 28. The outer or knit layer or panel 22 is then folded back upon itself, as shown particularly in FIG. 2 to define a waistband edge 30 spaced from the row of stitching 28 to define therebetween a knit waistband portion 32 and the side edges of the resulting assembly secured together, as by means of rows of over-edge stitching 34 and 36. Extension means, such as knit flaps or elastic tape members 38 and 40 may then be secured with the side edges of the garment 10, adjacent the row of stitching 28 and extending generally outwardly thereof, as shown, and the plurality of separable fastener members 16 applied in a conventional manner. For example, the fastener members 16 may comprise conventional snap fasteners, which are preferably fabricated of rust resistant material, such as stainless steel, or the like, and may be secured with the appropriate fabric portion by sewing, bent prongs, or the like, to enable the garment 10 to be formed into a pants-like configuration for positioning in the usual position upon the body of an infant.

The elastic strap members 38 and 40 provide a degree of resiliency generally along the line of the row of end stitching 28. The waistband portion 32, which comprises only the knitted panel 22 provides a degree of resiliency along the waistband portion of the garment 10 due to the inherent resiliency of a knit fabric. To aid in controlling the resiliency, the knit fabric layer 22 is preferably knit to provide a greater degree of resiliency in the horizontal direction, as indicated by the arrow 42 while being essentially non-resilient perpendicular thereto. Hence, the garment 10 will be effectively retained in position upon the body of the infant without binding, slipping, or the like, enabling the garment 10 to fit snugly on the infant and to thereby appear neat and trim, without unsightly bulges.

Generally longitudinally centrally of the garment 10, the superpositioned layers or panels of fabric 18, 20 and 22 are folded and secured in a manner to be hereinafter described to define a crotch portion 44 defining a soil pocket 46 adapted to retain and prevent accidental spilling of solid soils. Preferably, and with particular reference to FIG. 3, the superpositioned layers or panels of fabric are folded to a generally S-shaped configuration to define generally upstanding folds 48 and 50, with the soil pocket 46 being disposed therebetween and generally downwardly extending folds 52 and 54. Securing means, such as stitching 56 and 58 is provided to retain the folds in position. Hence, the garment 10 is of generally tapered or hourglass configuration in its completed form, as shown in solid lines in FIG. 6.

With reference now to FIGS. 7 and 8, there is shown and illustrated another garment constructed in accordance with the principles of the present invention and designated generally by the reference character 10'. The garment 10' is substantially similar to the garment 10 previously described. Accordingly, like reference characters are used to designate like parts of the garment 10', as were used for the garment 10, with the exception that the reference characters applied to

the garment 10' are primed and only those features and details of the garment 10' which differ from the garment 10 will be hereinafter described, it being understood that in all other respects, the garment 10' is substantially similar to the garment 10.

The garment 10' differs from the garment 10 predominately in the configuration of the outer structure 14', which, rather than being fabricated of a single unitary piece of knitted fabric is fabricated of a plurality of pieces of knitted fabric.

Particularly, the outer structure 14' comprises a generally rectangular knitted panel 22' of substantially similar dimensional extent as the inner terry cloth fabric layers or panels 18 and 20 with the waistband portion 32' being fabricated of a separate panel of knitted fabric. The waistband portion 32' is secured, along the lower edge thereof, with the inner and outer terry cloth layers 18' and 20' and with the knitted panel 22', as by means of a row of over-edge stitching 28'. The waistband portion 32' is preferably fabricated to provide a degree of resiliency in a generally horizontal direction, as indicated by the arrow 42', and, rather than being of a dimensional extent substantially the same as the panels 18', 20' 22' is of somewhat greater dimensional extent to define outwardly extending portions or tabs 38' and 40'. If desired, the panel 22' may be configured to provide resiliency in the longitudinal direction, rather than transversely as in the panel 22.

The garment 10', accordingly, may be disposed upon the body of an infant in a like manner to the garment 10 and retains all of the advantages thereof. Furthermore, the garment 10' is fabricated entirely of fabric, and does not require the use of any elastic, elastic threads, elastic members, or the like, and is hence of exceptional durability and may be readily laundered and dried without deterioration or other harmful effects.

Both of the garments 10 and 10', in addition to their obvious advantages to the user, such as the high absorbency thereof, the aesthetically appealing appearance thereof, the presence of the soil pocket, and the ease of utilization and fit upon infants of substantially all sizes and ages, also present certain advantages to operators of commercial diaper services.

Diaper service operators find the process of counting soiled garments constructed in accordance with the principles of the present invention faster and more accurate than that of counting conventional diapers. When using conventional diapers, the customers are apt to double-up a large percentage, that is, they place one diaper flat upon the other and fold the combination to the proper size for fitting the infant. When the infant wets this combination, the two conventional diapers, together with the folds, tend to cling tenaciously to each other. For accurate counting and proper washing, the "soil-counter" must laboriously open up the folds and separate the diapers. The super absorbent quality of the diaper-like garments constructed in accordance with the principles of the present invention eliminate this problem since the garments of the present invention not only require no "doubling-up" but the pants-like shape with the soil-pocket crotch construction prevents the putting together of two garments fabricated according to the present invention even were the customer inclined to do so. Furthermore, since the diaper-like garments of the present invention cannot be "doubled-up" they are susceptible to automatic counting by machine.

Additionally, the diaper-like garments of the present invention provide the additional feature of eliminating the need for smoothing, folding and stacking of the clean product. This is a process that is absolutely essential with conventional diapers. Unless conventional diapers are smooth and folded while still warm, immediately after drying, countless wrinkles will form and set. Diaper-like garments constructed in accordance with the principles of the present invention are wrinkle proof and they may be crushed, helter-skelter, into a package for delivery, and when the customer extricates them, one at a time for use, she will be delighted with their appearance.

Furthermore, the completely novel appearance and texture of the terry cloth layers enable diaper-like garments con-

structed according to the present invention to be colored to mask the otherwise unsightly stains caused by many of the medicines and lotions often used on infants. Previous conventional diapers could not be effectively so colored, particularly because of consumer resistance since consumers, and particularly mothers, expect and demand that a conventional diaper be white. Since the diaper-like garments of the present invention present such a novel appearance, this resistance is effectively overcome and the aesthetic advantages to colored garments may be effectively exploited. Particularly, the diaper-like garment of the present invention and specifically the inner terry cloth layer thereof may be colored yellow to provide an effective masking for the various medicinal stains which often result.

It is to be understood that terminology such as "upper", "lower", "inwardly" and "downwardly", as used in the preceding description and in the subjoined claim, along with other similar directional terminology, is to be construed and interpreted in its normal and accepted sense. However, such terminology is not to be construed or interpreted in a limiting sense either in the preceding description or the subjoined claim, since the same is used merely to facilitate an understanding of, and to clearly set forth and particularly define the present invention.

While the invention has been described, disclosed, illustrated and shown in terms of certain preferred embodiments or modifications which it has assumed in practice, the scope of the invention should not be deemed to be limited by the precise embodiments or modifications herein described, disclosed, illustrated or shown, such other embodiments or modifications as may be suggested to those having the benefit of the teachings herein being intended to be reserved especially as they fall within the scope and spirit of the claim hereto appended.

I claim:

1. Easily and repeatedly washable, comfortable and easily applied diaper-like garment for infants comprising, in combination, inner highly absorbent machine washable and dryable air permeable textile fabric panel means for disposition against the skin of an infant to absorb and convey moisture outwardly thereof, said inner highly absorbent panel means comprising at least one layer of fabric material woven to provide a multiplicity of longitudinally extensive loops or piles projecting generally perpendicular upwardly thereof and disposed with the loops or piles extending generally inwardly for contact with the infant's skin to separate the bulk of the garment from the infant's skin, to absorb and conduct liquid waste away from the infant's skin and to permit air contact

with a substantial percentage of the infant's skin within the garment; outer less absorbent machine washable and dryable air permeable textile fabric panel means for enabling air and vapor passage therethrough to aid in reducing diaper rash and other irritations while substantially precluding the transfer of liquid therethrough, said outer less absorbent panel means comprising a knitted fabric provided with a napped surface on the interior thereof to aid in retaining the bulk of the outer fabric from intimate contact with the underlying absorbent layer, further aiding and precluding wetting therethrough; an intermediate layer of pile or looped fabric material disposed between said inner highly absorbent panel means and said outer less absorbent panel means with the loops or piles thereof extending generally inwardly and into contact with the back of said inner panel means for withdrawing liquid waste yet further from contact with the infant's skin, said inner highly absorbent fabric panel means being of generally rectangular configuration, said outer less absorbent fabric panel means being of similarly generally rectangular configuration and extending in the longitudinal direction a distance beyond one of the short edges of said inner highly absorbent fabric panel means to define a waistband portion, said inner highly absorbent fabric panel means comprising substantially inelastic material to preclude binding and bunching against the infant's skin, said outer less absorbent fabric panel means comprising material which is at least resilient in at least a direction generally parallel said short edge so that the garment may be smoothly secured and retained in position on the infant; means for securing said outer panel means in covering relationship overlying and exterior said inner panel means to provide an aesthetically appealing appearance and prevent wetting through of liquid waste materials which might dampen or soil adjacent materials; means for securing a longitudinally intermediate portion of at least said inner highly absorbent fabric panel means in a plurality of generally longitudinally extending laterally spaced apart folds having a generally S-shaped cross sectional configuration to define a crotch portion of lesser width than the width of said short ends, said folds extending generally upwardly of the central portion of the garment to form generally curvilinear side walls defining therebetween a generally pocket-like depression for receiving and containing non-liquid waste materials therewithin; and a plurality of separable fastener mating members disposed, respectively, adjacent the four corners of the garment to enable said waistband portion to be adjustably easily connected with the opposite short edge in a waist-encircling orientation on an infant's body to define a generally panty-like assembly.

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