Sept. 23, 1958 L. BRAFMAN 2,853,073

DIAPER WITH INTERMEDIATE LIQUID REPELLENT LAYER

Filed Sept. 3, 1954 2 Sheets-Sheet 1

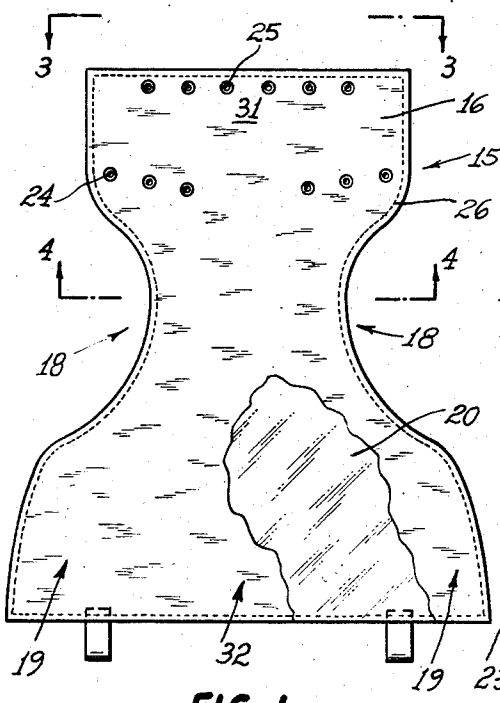

FIG. 1

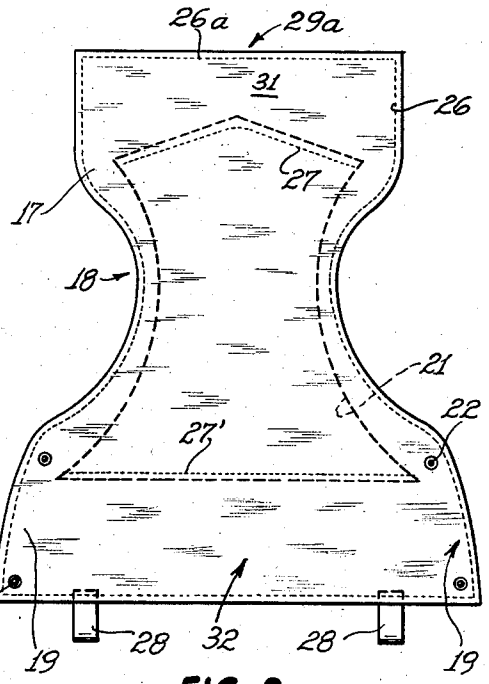

FIG. 2

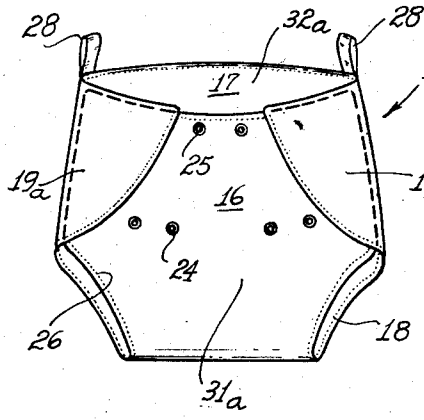

FIG. 5

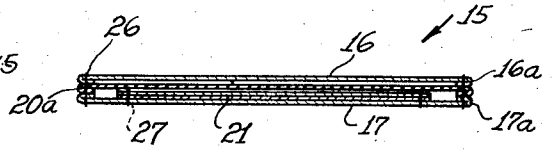

FIG. 4

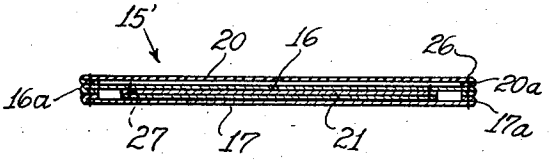

FIG. 6

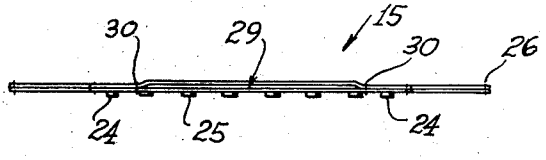

FIG. 3

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DIAPER WITH INTERMEDIATE LIQUID REPELLENT LAYER

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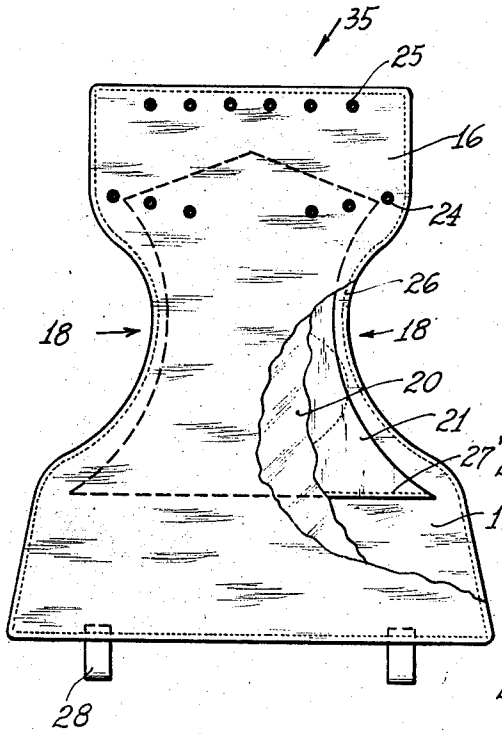

FIG. 7

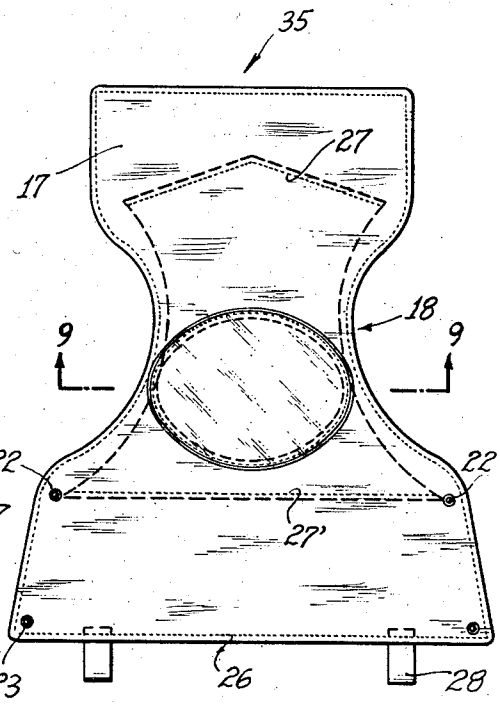

FIG. 8

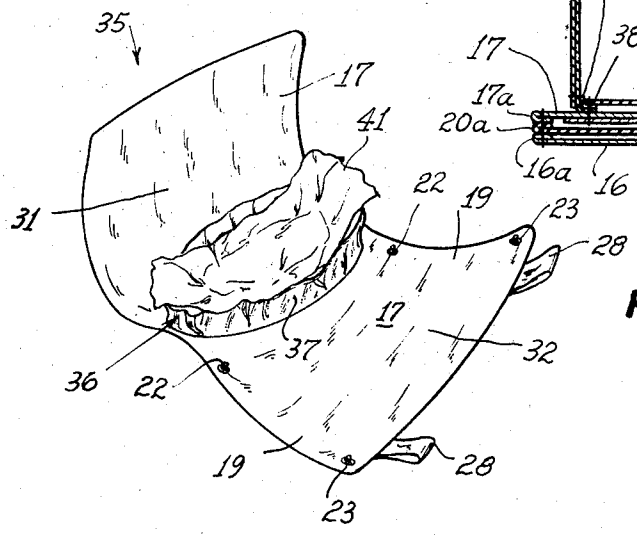

FIG. 10

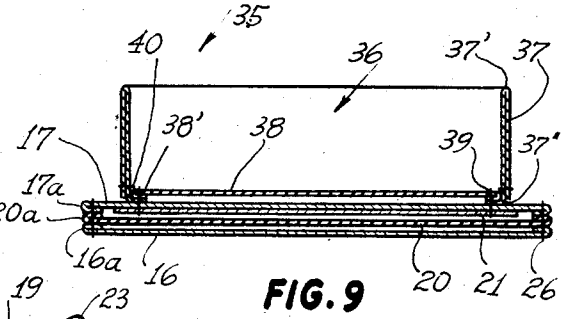

FIG. 9

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DIAPER WITH INTERMEDIATE LIQUID REPELLENT LAYER

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Application September 3, 1954, Serial No. 454,050

3 Claims. (Cl. 128—284)

This invention relates to improvements in diapers.

It is an object of the present invention to provide a very efficient, economical, practical diaper with intermediate liquid repellent layer for babies, invalids, and hospitalized persons.

It is another object of the present invention to provide a diaper in which the water repellent member is coterminous with the moisture absorbent members.

It is another object of the present invention to eliminate the use of extra rubber of plastic panties which usually causes chafing and irritation to the baby's waist and/or thighs.

Another object of the present invention is to provide a diaper shaped to the baby's form which is adjustable from infant to large size.

A still further object of the present invention is to provide a diaper with intermediate water repellent layer in which is contained a plurality of moisture-absorbent elements positioned in such manner in relation to the outer and inner layers that they will always be under the baby's buttocks when the diaper is adjusted on the baby.

Yet another object of the present invention is to provide a diaper made up of a plurality of plies, one of which is a water repellent layer, and in which the plies are seamed together on two sides and one end leaving the other end open to facilitate drying of the diaper after being washed.

Another object of the present invention is to provide tabs at the closed end of the diaper for facilitating attachment of the diaper to a shirt or the like, and also for use to hang the diaper to a clothes line preventing the diaper from becoming soiled which would happen if the diaper was hung directly on a usually soiled clothes line.

A still further object of the present invention is to provide a diaper having a flexible water repellent receptacle for retaining the baby's waste matter or excretions.

The above and other objects, features and advantages will appear from the following detailed description and in the accompanying drawings illustrating modes of carrying out the invention. It is understood, however, that it is not intended that the invention be limited to the exact details described herein which illustrates satisfactory diapers of many which may be produced as a result of the knowledge gained through or gleaned from an understanding of the invention, and it is further understood and intended that there be included, as part of the invention, all such obvious changes and modifications thereof, as would occur to a person skilled in the art.

In the drawings:

Fig. 1 is a plan view of a diaper according to the invention, showing the layer farthest away from the body of the wearer on top, partly broken away, exposing underneath the plastic sheet;

Fig. 2 is a plan view of the diaper with the fabric absorbent layer closest to the body of the wearer on top, showing the reinforcement layer in dotted line;

Fig. 3 is an end view along line 3—3 of Fig. 1;

Fig. 4 is a cross-section along line 4—4 of of Fig. 1;

Fig. 5 is a view showing the diaper in folded condition and snapped into position;

Fig. 6 is a cross-section similar to that shown in Fig. 4 showing a modification in which the water repellent sheet comprises the outermost layer, followed by the absorbent fabric layer and two reinforcement panels (the later three members being stitched together), and an absorbent fabric layer which is contactable with the body of the user;

Fig. 7 is a plan view similar to Fig. 1 showing the invention in a modified form;

Fig. 8 is a plan view similar to Fig. 2 showing the modification of Fig. 7;

Fig. 9 is a cross-section taken along line 9—9 of Fig. 8; and

Fig. 10 is a perspective view of the modification shown in Figs. 7, 8 and 9.

Reference will now be made to the various examples by which the invention is realized. Referring to Figs. 1 to 5, inclusive, there is disclosed a diaper **15** comprising an outer layer or member **16** and an inner layer or member **17**, these members being made of any conventional liquid absorbing sheet material or diaper cloth or at least the inner layer **17** being made of such material, and being of conventional hour-glass shape with incurved or concave portions as indicated at **18**. These members may be plain white in color or may incorporate any desired design or figures to give the diaper an aesthetic appearance. The outer layer **16** is preferably provided with the female elements **24**, **25** of snap fasteners and the inner layer with the complementary male elements **22**, **23** of said snap fasteners.

A plurality of layers of liquid absorbing material, such as diaper cloth, are seamed at their ends to the inner face of inner layer **17** by means of the stitches **27**, **27'**, constituting a pad **21**. The sides of pad **21** are preferably arcuate and extend inwardly from the sides of the outer and inner layers **16**, **17** and these sides are preferably free of securement so as to prevent puckering thereof or folds or creases being formed therein. The pad **21** is shorter than the inner and outer layers at both ends. At the seam **27** the pad **21** is preferably tapered forming an extension for the male genitals if the diaper is used on a male.

Interposed between the outer layer **16** and the pad **21** which is secured to the inner layer **17**, is a sheet of liquid repellent, moisture blocking material **20**. Material of this type is well known in the art and need not be described herein. However, sheet or layer **20** is of the same size and shape as the inner and outer layers or members **16**, **17** and the three layers **16**, **20** and **17** are seamed together substantially around the periphery of the diaper at their folded-over margins **16***a*, **20***a* and **17***a*, respectively, by the peripheral line of stitches **26**, except at the end **29***a* of the diaper where an opening **29** is provided at the termini **30** of the seam **26** to facilitate drying of the diaper when washed. The line of stitches **26** beyond the termini **30** continue only on inner layer **17** as seen at **26***a*, Fig. 2, holding down the folded edge thereof and providing a finished edge thereat. Secured to the closed and somewhat wider end of the diaper are the loops or tabs **28** to facilitate the diaper being secured to a shirt of the wearer.

Fig. 5 illustrates the folded condition of the diaper when adjusted upon the wearer, the portions **19**, **31** and **32** of Figs. 1 and 2, forming respectively the flaps **19***a*, front **31***a* and rear **32***a* of Fig. 5. Adjustment as to size upon the wearer may be accomplished by means of the complementary snap fasteners **22**, **23**, and **24**, **25**.

Fig. 6 illustrates the invention in a somewhat modified form, wherein the diaper is generally indicated by the numeral **15'**. In this form of the invention the liquid repel-

lent, moisture blocking sheet or layer **20** is disposed on the outside of the diaper rather than between the inner and outer layer as seen in Figs. 1 to 4, the pad **21** being located as shown in said figures.

Figs. 7 to 10, inclusive discloses the invention in a still further modified form. The diaper body may be of construction similar to that shown in Figs. 1 to 4 and like parts are indicated accordingly. The outer and inner liquid absorbing layers **16** and **17** respectively, and the intermediate liquid repellent layer **20** are coextensive and are seamed together by the stitches **26**, except at the central portion of the narrower end indicated by the numeral **35**, which portion is open similar to that as indicated at **29** in Fig. 3. The layers forming the pad **21** are seamed at their ends by the stitches **27** and **27'**. Disposed over the inner layer is a liquid repellent receptacle or catch device **36** in which may be disposed the absorbent paper or cellulosic sheet **41**. The excrement or waste matter of the user of the diaper will be received in receptacle **36** and deposited on the absorbent sheet **41**, the latter containing the deposit being easily removed from the receptacle and discarded when the diaper is removed from the body of the wearer.

Receptacle **36** which may be cylindrical or oval is made of conventional flexible liquid repellent material and is provided with a bottom **38** and a peripheral wall **37** both of which are seamed together at their fold-over margins **37'** and **38'** by the stitches **39** and **40**. It is preferable for stability to make the wall **37** two-ply by folding the material upon itself as indicated at **37'**. It is preferable to make receptacle **36** oval in shape and it may be disposed with relation to inner layer **17** with its major axis transversely thereof as shown in Fig. 8 or with its minor axis transversely of inner layer **17**.

It is apparent that there has herein been provided diapers which are very efficient, practical and useful and which attain the purposes and advantages contemplated by the invention. It is understood that the liquid repellent or waterproof layer may be eliminated from the diaper.

While the invention has been described and illustrated with respect to some particular preferred examples which give satisfactory results, it will be understood by those skilled in the art after understanding the principle of the invention, that various changes and modifications may be made without departing from the spirit and scope of the invention and it is intended, therefore, in the appended claims to cover all such changes and modifications.

I claim:

1. A diaper comprising an outer layer, an inner layer and an intermediate layer, said layers being coextensive and seamed together at their sides and one end and being open at their other end, complementary fastener elements disposed on said outer and inner layers whereby the diaper may be secured in folded condition on the wearer, a pad comprising at least one sheet, said pad being shorter and narrower than said layers and being secured at its ends to said inner layer and being unsecured at its sides, said intermediate layer being of liquid repellent material and being located between said pad and said outer layer, said pad and said inner and outer layers comprising liquid absorbing material, one of the secured ends of said pad being tapered.

2. A diaper comprising an outer layer, an inner layer and an intermediate layer, said layers being coextensive and seamed together at their sides and one end and being open at their other end, complementary fastener elements disposed on said outer and inner layers whereby the diaper may be secured in folded condition on the wearer, a pad comprising at least one sheet, said pad being shorter and narrower than said layers and being secured at its ends to said inner layer and being unsecured at its sides, said intermediate layer being of liquid repellent material and being located between said pad and said outer layer, said pad and said inner and outer layers comprising liquid absorbing material, and a flexible liquid repellent receptacle secured to said inner layer substantially at the central portion thereof.

3. A diaper comprising an outer layer, an inner layer and an intermediate layer, said layers being coextensive and seamed together at their sides and one end and being open at their other end, complementary fastener elements disposed on said outer and inner layers whereby the diaper may be secured in folded condition on the wearer, a pad comprising at least one sheet, said pad being shorter and narrower than said layers and being secured at its ends to said inner layer and being unsecured at its sides, said intermediate layer being of liquid repellent material and being located between said pad and said outer layer, said pad and at least said inner layer comprising liquid absorbing material, one of the secured ends of said pad being tapered.

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