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L. RAVKIND ET AL

2,500,432

PINLESS DIAPER

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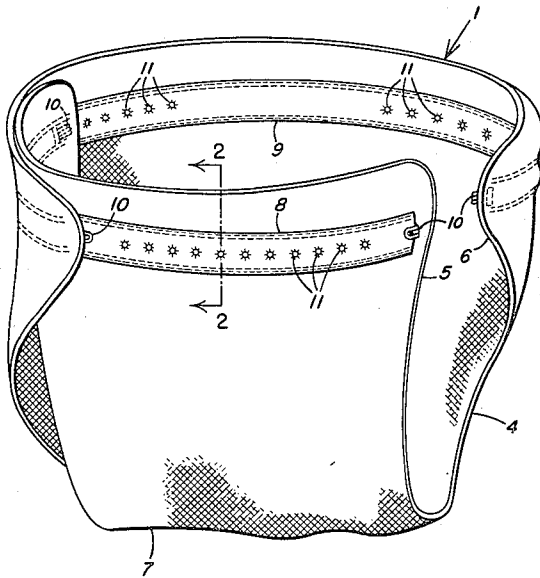


FIG. 1

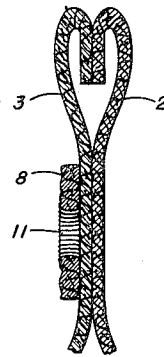


FIG. 2

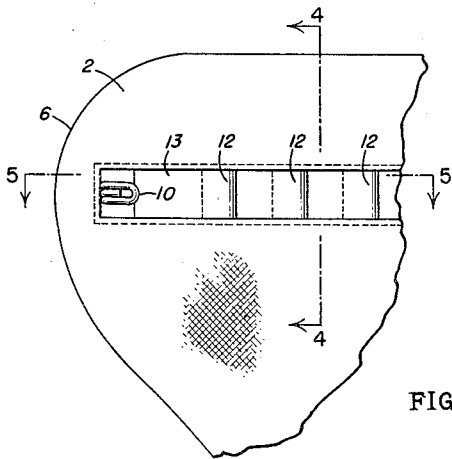


FIG. 3

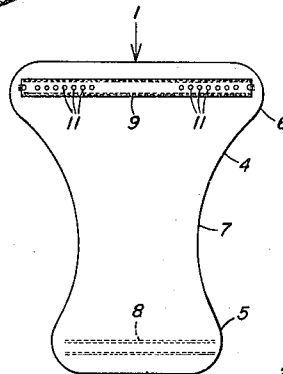


FIG. 4

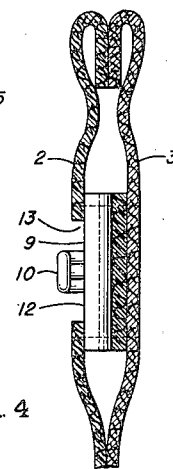


FIG. 5

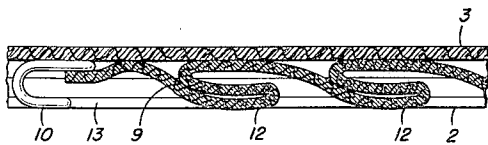


FIG. 6

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PINLESS DIAPER

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6 Claims. (Cl. 128—284)

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This invention relates generally to diapers and more particularly to diapers of the pinless type.

An object of the invention is to provide an improved diaper incorporating fastening means by which a diaper can be put on and securely fastened in place without the use of pins or other separate fasteners.

Another object of the invention is to provide a pinless diaper having fastening means adjacent its opposite edges by which the diaper can be fitted snugly to a baby without the use of strings or other additional fasteners.

A further object of the invention is to provide a diaper incorporating fastening means which is adjustable to fit a baby of any size.

An additional object of the invention is to provide a pinless diaper of such shape that it requires no initial folding and is ready for immediate use.

Another object of the invention is to provide a pinless diaper of substantially hour-glass shape incorporating fastening means by which the ends of the diaper are secured in place whereby uncomfortable bulkiness is avoided and snug fit assured.

Another object of the invention is to provide a diaper incorporating fastening means so arranged that no metal or other relatively hard substance can touch a baby's body.

A further object of the invention is to provide a pinless diaper which is highly absorbent and long wearing.

Other objects and advantages of the invention will appear hereinafter in the detailed description, be particularly pointed out in the appended claims and illustrated in the accompanying drawings, in which:

Figure 1 is a perspective view of a diaper embodying the present invention, the parts of the diaper being shown as applied to a baby, but with one side unsecured to illustrate certain of the details of construction.

Figure 2 is a vertical sectional view on an enlarged scale taken along the lines 2—2 of Figure 1.

Figure 3 is a fragmental plan view on an enlarged scale of one corner of the diaper showing a modified form of securing means.

Figure 4 is a vertical sectional view on an enlarged scale taken along the lines 4—4 of Figure 3.

Figure 5 is a horizontal sectional view on an enlarged scale taken along the lines 5—5 of Figure 3, and

Figure 6 is a plan view of the diaper on a reduced scale.

Referring now in detail to the drawings in which like reference characters designate like parts, the diaper, designated generally as 1, preferably is multi-layered and comprises inner and

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outer sheets, 2 and 3, respectively. To avoid chafing a baby's skin, these sheets may be stitched or otherwise secured together, with their edges tucked or folded in, as shown in Figure 2, so that the edge of the diaper is smooth.

As shown in Figure 6, the diaper has an elongated body 4 of somewhat hour-glass shape and its end or front and rear waistband portions, 5 and 6, respectively, are of relatively greater width than the intermediate or crotch portion 7.

For securing or fastening the diaper in place, there are provided on each of the waistbands 5 and 6, adjacent the upper and lower edges of the diaper but on opposite sides, strips, tapes or bands 8 and 9, respectively, which are sewn or otherwise secured to the diaper. These strips desirably extend substantially to the outer edges of their respective waistbands. Adjacent and preferably underlying the outer end of each of the strips 8 and 9 is a hook or other fastener or securing element 10 of metal or other suitable material, there thus being a fastening element in each of the four corners of the diaper. To avoid possible contact between the hooks and a baby's skin the hooks are preferably confined within the edges of the diaper, so as to be separated from the skin by one or more layers of the diaper. On each waistband inwardly of the hooks are positioned the securing means or fastening elements for engaging, interlocking, or mating with the pair of hooks on the opposite waistband.

While the corner fasteners and the mating elements inwardly of the ends of the strips by which the opposite ends of the diaper are fastened or secured may be of several forms, only two forms of mating fasteners have been illustrated, each of which is adapted to receive a hook. The first of these mating fasteners appears in Figures 1, 2 and 6. As there shown, a plurality of spaced eyelets or openings 11, having reinforced edges, are formed in the strips inwardly of their outer ends. The other form, shown in Figure 5, comprises a pleated strip having spaced, inwardly directed pleats 12 for engaging the hooks. As preferred with either the pleated or reinforced eyelet type, the strips may be attached to the outside of the diaper, as in Figure 1, or inserted between its layers through a rectangular slot 13 formed in the sheet corresponding to the face or engaging surface of each strip. In the latter case, each slot is preferably of less dimensions than its associated strip to enable the edges of the sheet defining the slot to partly overlap and be stitched to the face of the strip, thus reinforcing the latter.

As previously mentioned and as shown in Figure 6, the diaper is preferably of substantially hour-glass form or configuration with its least width approximately midway between its ends.

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So formed, the intermediate portion 6 of the diaper will conform to the corresponding portion of a baby to whom the diaper is applied, regardless of the baby's size, without uncomfortable folds or extra bulk. The widths of the waistbands 4 and 5 are relatively greater and preferably of such combined dimension or circumference as to encircle the waist of any baby, at least up to the training stage.

The diaper may be applied in the usual manner by placing the rear waistband 6 against the back of the baby and bringing or folding the front waistband up over its stomach to encircle the baby's waist. The adjacent sides of the waistbands are next brought together with their corners overlapping, the corners of the front waistband underlying the rear waistband in the illustrated embodiments. To fasten or secure the diaper in place it is then only necessary to engage or interlock the hooks 10 on each waistband with the confronting or contiguous eyelets, pleats or other fastening elements 11 and 12 on the other or opposite waistband. By this means the four corners of the diaper are secured or held in place and all possible bulking or underfolding as a result of subsequent activity of the baby avoided. Accordingly, it is only necessary to provide sufficient openings, whether in the form of eyelets or pleats, inwardly of either side of each waistband to enable the diaper to be fitted snugly to any size of baby with all of its corners secured.

It will be apparent from the foregoing detailed description that there has been provided an improved diaper of the pinless type which fits snugly without prefolding, can be applied to a baby of any size, and all corners of which can be secured in place. It should be understood that the described and disclosed embodiments are merely exemplary of the invention and that all modifications are intended to be included which do not depart either from the spirit of the invention or the scope of the appended claims.

We claim:

1. A diaper comprising an elongated body, identical fastening means attached adjacent opposite corners of each end portion of said body, said means on one end portion projecting from a different face of said body than said means on said other end portion, and a plurality of spaced complementary fastening means extending inwardly from each of said corners and substantially transversely of said body, said identical fastening means being selectively engageable with said complementary fastening means on overlapping of said corners for adjustably securing said corners.

2. A diaper comprising an elongated body, identical fastening means attached adjacent opposite corners of each end portion of said body, said means on one end portion projecting from a different face of said body than said means on said other end portion, and tapes attached to said end portions and extending transversely of said body, said tapes confronting said identical means when said corners are overlapped and each having a plurality of spaced complementary fastening means, said identical fastening means being selectively engageable with said complementary fastening means for adjustably securing each of said corners to the opposite end portion of said body.

3. A diaper comprising an elongated body, a hook attached adjacent opposite corners of each

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end portion of said body, said hooks on one end portion projecting from a different face of said body than said hooks on said other end portion, bands attached to said end portions and extending substantially transversely of said body, each band confronting a hook of the other end portion when said corners are overlapped, and a plurality of spaced pleats on each of said bands, said hooks being selectively engageable with the confronting of said pleats for adjustably securing said corners.

4. A diaper comprising an elongated body, a hook attached adjacent opposite corners of each end portion of said body, said hooks on one end portion projecting from a different face of said body than said hooks on said other end portion, bands attached to said end portions and extending substantially transversely of said body, each band confronting a hook of the other end portion when said corners are overlapped, and a plurality of spaced openings on each of said bands, said hooks being selectively engageable with the confronting of said openings for adjustably securing said corners.

5. A diaper comprising a body having sides and end portions, a pair of identical fastening members on each end portion of said body, said members of each pair being attached to the associated end portion adjacent opposite sides of said body and one of said pairs projecting from a different face of said body than said other pair, and a plurality of spaced complementary fastening means on each end portion and extending substantially transversely of said body, said identical fastening members being complementary to and selectively engageable with said complementary fastening means when said end portions are overlapped for adjustably securing said end portions.

6. A diaper comprising a substantially hourglass shaped body having sides and end portions, one of said end portions being wider than and adapted to overlap the other end portion, a pair of identical fastening members on each of said end portions, said members of each pair being attached to the associated end portion adjacent opposite sides of said body and one of said pairs projecting from a different face of said body than said other pair, and a plurality of spaced complementary fastening means on each end portion and extending substantially transversely of said body, said identical fastening members being selectively engageable with said complementary fastening means when said end portions are overlapped for adjustably securing said end portions.

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