Nov. 14, 1950 J. H. CROSSINGHAM 2,530,046

DIAPER

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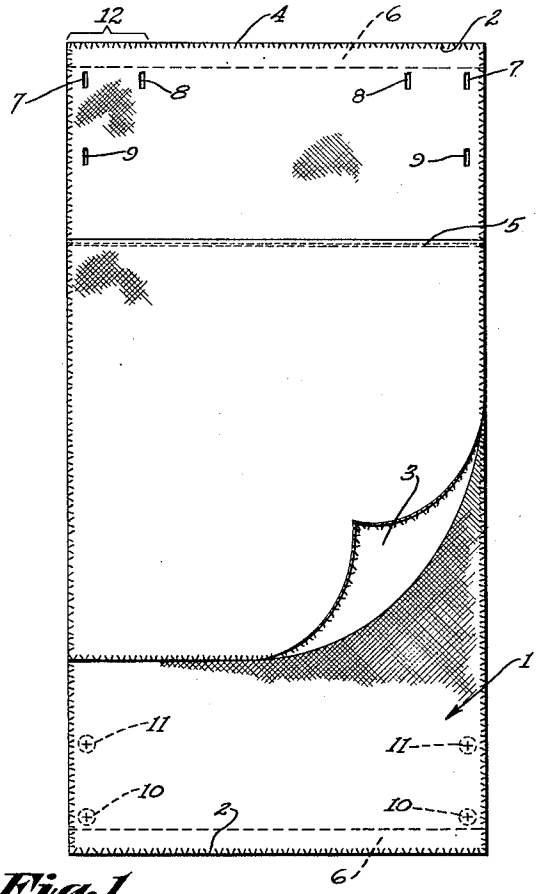


Fig. 1

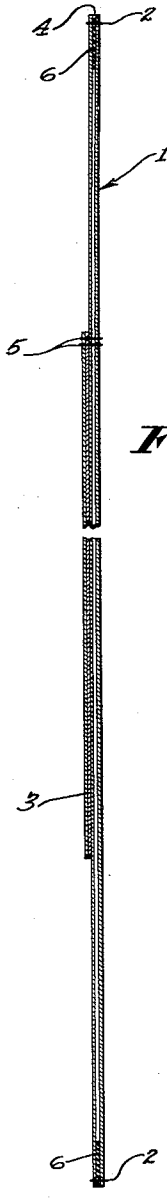


Fig. 2

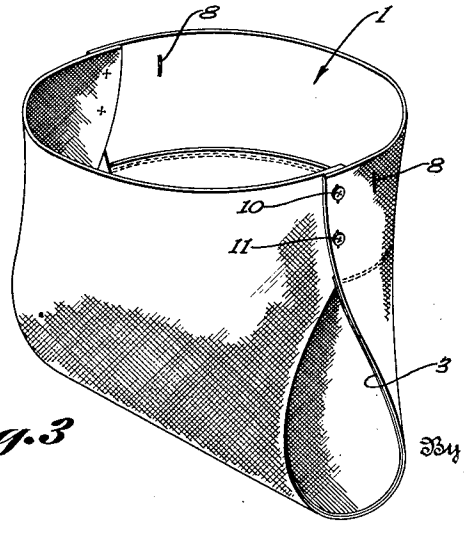


Fig. 3

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This invention relates to diapers. One of the objects of the invention is the provision of a diaper which may comfortably fit an infant throughout an appreciable period of its growth, having an elastic circumferential girth line stretchable responsive to distension by the body, and an adjustment by which additional portions of elastic may be introduced into the girth line, increasing its circumference while reducing its constrictive tension.

Another object of the invention is to provide a diaper having a flap constituting additional padding overlying an intermediate area of the diaper, stitched thereto solely along an edge adjacent the back of the diaper so that it can be slipped under the buttocks as part of the diaper, without displacement from its normal smooth flat position.

Still another object of the invention is to provide a diaper with a flap as described, in which the flap may be moved away from its normal plane of surface contact with the rest of the diaper, except at its stitched line of juncture therewith, so that it can be scrubbed independently of the rest of the diaper and separated from surface contact therewith for quick drying.

A further object of the invention is the provision of a diaper with a flap as described, in which the girth line can be adjusted to raise the flap at the back.

Other objects of the invention will appear as the following description of a preferred embodiment thereof proceeds.

In the drawings which accompanying and form a part of the following specification:

Figure 1 is an elevation of the improved diaper with one corner of the flap turned back;

Figure 2 is a longitudinal section through the diaper, on an enlarged scale;

Figure 3 is a perspective view of the diaper in the position the diaper assumes when fastened about the body of a baby.

Referring now in detail to the several figures, the numeral 1 represents a piece of knit tubular fabric stitched around the edges so as to form a flat elongated sheet of two ply thickness, in which the wales run lengthwise, making the sheet elastic in a transverse direction, it being inelastic longitudinally. The lines of stitching 2, at the opposite ends, are of a type which permits the stitching to stretch with the fabric.

Additional padding is provided in the form of a rectangular flap 3, of knit tubular fabric, having the same width as the sheet 1, and with the wales running in the same direction, said flap

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being stitched laterally and at the bottom, to maintain its flat shape, and being sewn at its top transversely to the sheet 1 on that part of the sheet which constitutes the back of the diaper, some distance below the top edge 4. The line of stitching 5, which unites it to the sheet 1, also is stretchable with the fabric. The length of the flap 3 is not critical to the invention, it being herein shown as terminating equidistant from the opposite end edges of the diaper.

Since a diaper is generally applied with the baby lying on its back by slipping the back of the diaper up beneath the buttocks, the flap 3, being attached to the back of the diaper with its free portion extended forward, will readily pass beneath the buttocks without disturbing the smooth and flat position of said flap, and since the flap, including the line of stitching 5, gives widthwise with the sheet 1, any stretching of the latter in securing the diaper about the baby will result in corresponding stretching of the flap in its zone of juncture with the sheet 1, so that there will be no wrinkling or creasing due to unequal stretching of the two components of the diaper.

Since the flap 3 is the part of the diaper that becomes most soiled, this usually requires the more vigorous laundering. The fact that it is sewn to the sheet 1 only at one edge, enables it to be scrubbed independently of the sheet 1, and also to be spread away from the sheet 1, for drying, resulting in quicker drying.

Diapers are manufactured only in a limited number of sizes, so that one size must be used over quite a period of growth of the baby. With respect to the conventional diaper, this results in the diaper being too large for the baby when first used, so that it has to be folded or bunched in surplus masses about the baby. The baby gradually grows into it until it fits him, but in a very short while thereafter, he outgrows it; it is discarded for the next size, which is too large for him, and the whole process is repeated. Thus with the conventional diaper, during most of his diaper age, the baby is uncomfortably dressed.

The diaper of the present invention being circumferentially stretchable, automatically adapts itself to the growth of the infant, and to prevent undue constriction of the diaper against the body, it has an adjustment which can be let out to increase the girth of the diaper.

A band 6, of elastic rubber, is inserted between the plies of the sheet at each end thereof, having when in released condition, a length equal to the width of the sheet 1, and being anchored to said sheet at its ends to hold it in position. The sheet

1 is provided adjacent its back edge with two buttonholes 7 and 8 transversely spaced, near each corner, and a buttonhole 9 near each lateral edge longitudinally spaced from the respective buttonholes 7. The forward portion of the sheet 1 on the outer face thereof is provided with two buttons 10 and 11, adjacent each lateral edge, longitudinally spaced to match the positions of the buttonholes 7 and 9.

While the baby is small, the buttons 10 are put in the buttonholes 8. This provides the minimum girth in which the end portions 12 of the rear elastic band 6 are excluded from the elastic circumference of the girth line. As the baby grows, the girth of the diaper increases through the stretching of the rubber band 6, with corresponding circumferential stretching of the fabric. Presently, when it is thought that the constriction of the girth may be beginning to cause discomfort, this is relieved by changing the buttons 10 to the buttonholes 7. This establishes a new and larger basic girth line by introducing the end portions 12 of the rear elastic band into the elastic circumference of the girth line and at the same time reduces the elastic tension for that size. This adjustment gives the diaper a renewed capacity for stretching responsive to the further growth of the child.

The buttons 11 normally cooperate with the buttonholes 9 to close the sides of the diaper above the legs, in order to bring a wider zone of the diaper both front and back, against the body, distributing the elastic pressure over a wider area, and increasing the frictional contact between the diaper and body, which prevents the diaper from sagging down between the legs.

Under certain conditions it may be desirable to have the flap 3 come up higher in the back than the front, in which case the buttons 10 can be buttoned into the buttonhole 9, thus lowering the girth line at the back, which in effect elevates the flap 3 at the back.

It is to be noted that the adjustments which result in shortening the elastic circumference of the diaper are made at the back where the body of the infant is relatively flat and firm, and that the elastic band 6 which encompasses the abdomen is never shortened, and therefore retains the maximum capacity to stretch, permitting it to freely yield to the normal tension distension of the abdomen following feeding.

While I have in the above description disclosed what I believe to be a preferred and practical embodiment of my invention, it will be understood by those skilled in the art that the buttons and buttonholes may be substituted by other equivalent fastening means, that their number either in transverse or longitudinal arrangement is a matter of mere option, and that the details of construction and arrangement of parts, as shown, are by way of example and not to be construed as limitations of the invention.

What I claim as my invention is:

1. Diaper comprising an elongated substantially rectangular widthwise stretchable sheet having back and front portions adapted to be upturned to bring said portions in embracing relation respectively to the back and front of the body, a rubber band extending across the end of each portion secured at its ends to said sheet adjacent the lateral edges thereof, a pair of fastening devices adjacent each end of the back band, the devices of a pair being transversely spaced and secured solely to said sheet so as to be relatively movable in a transverse direction when said sheet is stretched, complementary fastening devices adjacent the ends of the front band selectively engageable with the outer or inner fastening devices of said pairs, so as to include the full length of the back band in the elastic circumferential girth line formed by the bands, or to exclude the end portions of the back band therefrom, without altering the full length of the front band which is included in said girth line, and a pad congruent with the intermediate portion of said sheet, stitched thereto at one side only.

2. Diaper comprising an elongated substantially rectangular widthwise stretchable sheet having back and front portions adapted to be upturned to bring said portions in embracing relation respectively to the back and front of the body, a rubber band extending across the end of each portion secured at its ends to said sheet adjacent the lateral edges thereof, a pair of fastening devices adjacent each end of the back band, the devices of a pair being transversely spaced and secured solely to said sheet so as to be relatively movable in a transverse direction when said sheet is stretched, complementary fastening devices adjacent the ends of the front band selectively engageable with the outer or inner fastening devices of said pairs, so as to include the full length of the back band in the elastic circumferential girth line formed by the bands, or to exclude the end portions of the back band therefrom, without altering the full length of the front band which is included in said girth line, and a flat elastic pad substantially coextensive in width with the width of said sheet, said pad being elastically stitched to the inner side of said sheet on the back portion transversely thereto at a substantial distance from said pairs of fastening devices and being otherwise free from said sheet, said pad lying in surface contact with said sheet forwardly of its line of juncture therewith.

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