Aug. 16, 1960 I. S. DE WOSKIN 2,949,114

DISPOSABLE ABSORBENT PADS

Filed Dec. 12, 1955 2 Sheets-Sheet 1

FIG. 1.

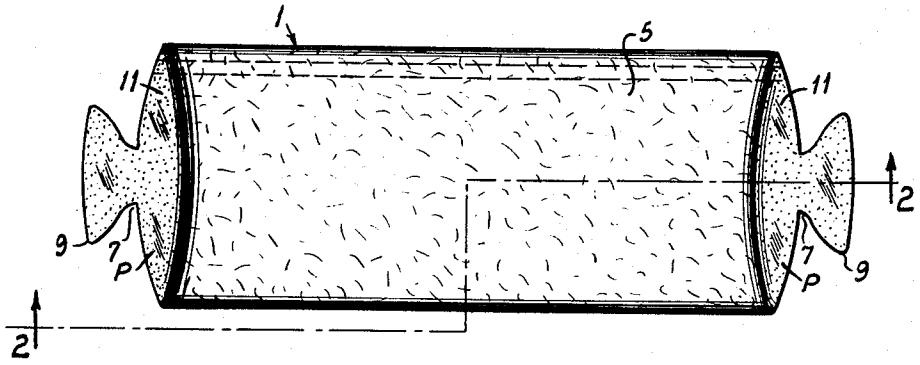


FIG. 2.

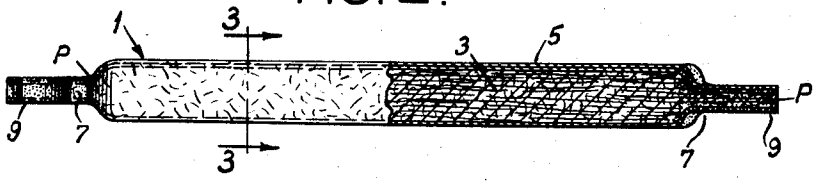


FIG. 3.

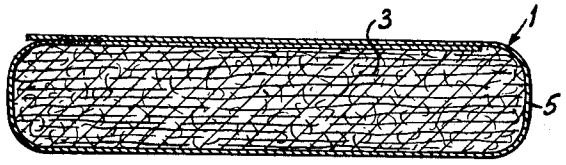


FIG. 4.

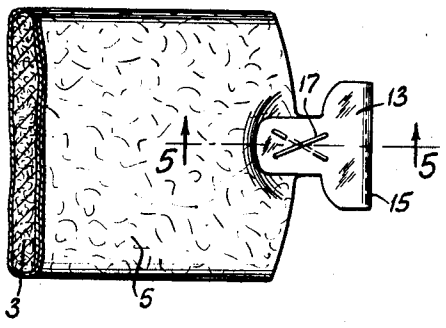
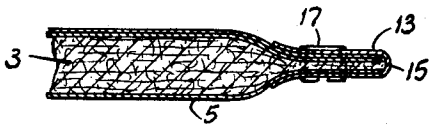


FIG. 5.



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Aug. 16, 1960 I. S. DE WOSKIN 2,949,114

DISPOSABLE ABSORBENT PADS

Filed Dec. 12, 1955 2 Sheets-Sheet 2

FIG. 6.

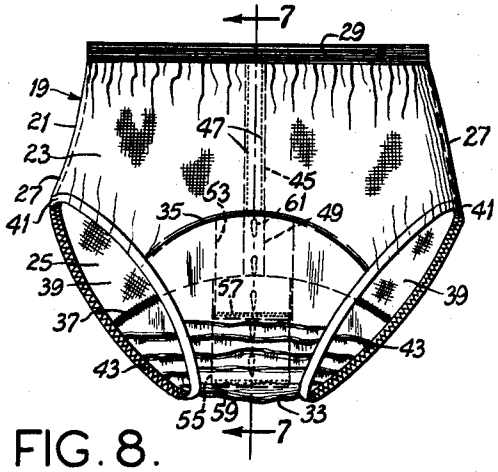


FIG. 7.

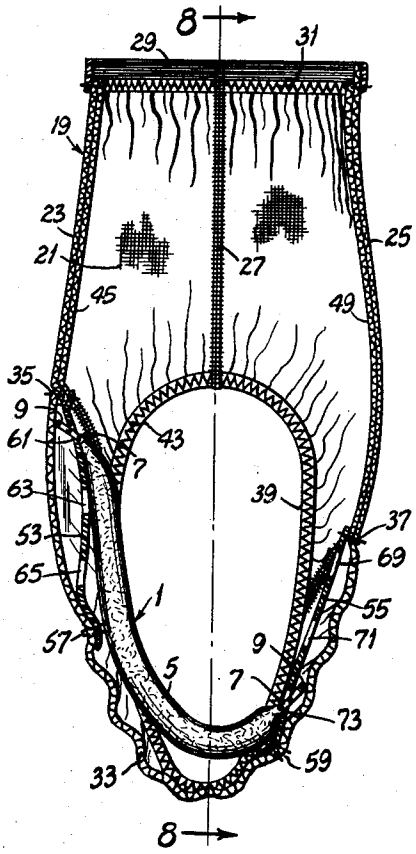


FIG. 8.

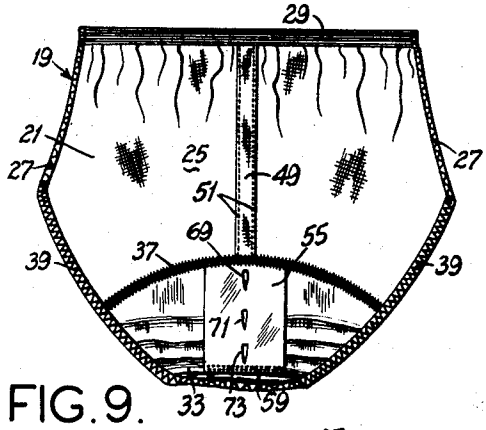
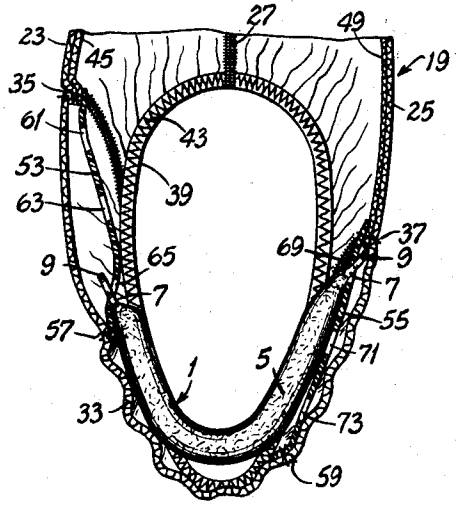


FIG. 9.



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2,949,114

DISPOSABLE ABSORBENT PADS

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3 Claims. (Cl. 128—290)

This invention relates to disposable absorbent pads and more particularly to a sanitary napkin formed with means for securing it to a garment.

Among the several objects of the invention may be noted the provision of a disposable absorbent pad, such as a sanitary napkin, formed with means at its ends for securing it to a garment; the provision of a sanitary napkin construction which eliminates the usual long extensions of the wrapper of the napkin; the provision of a sanitary napkin which is of such construction that it may be economically manufactured in a simple straight-line process; and the provision of a sanitary napkin such as described which is comfortable to wear. Other objects and features will be in part apparent and in part pointed out hereinafter.

The invention accordingly comprises the constructions hereinafter described, the scope of the invention being indicated in the following claims.

In the accompanying drawings, in which several of various possible embodiments of the invention are illustrated,

Fig. 1 is a plan view of a sanitary napkin of this invention;

Fig. 2 is a side elevation of Fig. 1 and partly in section on line 2—2 of Fig. 1;

Fig. 3 is an enlarged transverse cross section taken on line 3—3 of Fig. 2;

Fig. 4 is a fragmentary view illustrating a modification of the napkin, parts being broken away and shown in section;

Fig. 5 is a cross section taken on line 5—5 of Fig. 4;

Fig. 6 is a front elevation of a sanitary garment useful with a napkin of this invention;

Fig. 7 is an enlarged section taken substantially on line 7—7 of Fig. 6, showing a napkin secured in one position in the garment;

Fig. 8 is a cross section on the scale of Fig. 6 taken on line 8—8 of Fig. 7; and

Fig. 9 is a fragment of Fig. 7 illustrating the napkin in another position.

Corresponding reference characters indicate corresponding parts throughout the several views of the drawings.

Referring to the drawings, there is indicated at 1 in Figs. 1–3 a pad, more particularly a sanitary napkin, made in accordance with this invention. The napkin consists of a body 3 of absorbent material and a wrapper 5 of porous material. The body 3 may consist of any fluff material such as is customarily used in the manufacture of sanitary napkins, for example, flocky absorbent ground cellulose pulp material. The wrapper may consist of any material such as is customarily used in the manufacture of sanitary napkins, for example, a non-woven porous fabric. The wrapper may also be made of gauze. The ends of the wrapper 5 and the body 3 are conterminous.

In accordance with this invention, the ends of the napkin are die cut to provide at each end a generally centrally

projecting integral stem portion 7 narrower than the width of the napkin and an integral head or button 9 at the end of the stem. The head or button 9 is wider than the stem 7 but narrower than the width of the napkin. The buttonheaded ends of the napkin including the stem 7 and head 9 at each end are compressed flatwise to be of less thickness than the remainder of the napkin and provided with means for holding them compressed, whereby the ends are stiffened sufficiently to serve for fastening purposes as will be made clear. As shown in Figs. 1 and 2, end portions of the napkin including the stems and heads and end regions 11 across the full width of the napkin are impregnated with a plastic material, such as a melamine resin, as indicated at P for holding the end compressed and stiffening them. The impregnation and compression at 11 seals the ends of the napkin.

Napkins such as above described may be manufactured, for example, by wrapping a continuous strip of wrapping material around a continuous strip of body material, impregnating the resultant stock at napkin length intervals with the resin, compressing the impregnated portions of the stock, and then die cutting. These operations may be carried out in a simple straight-line process, resulting in economy of manufacture.

Figs. 4 and 5 illustrate a modified type of pad, which has the same type of T-shaped ends as shown in Figs. 1 and 2, but wherein each end is held in compression and stiffened by exterior stiffening means such as a piece of stiff paper 13. This is folded at 15 around the outer edge of the head and has its folded portions fastened together as by staples 17 with the stem and head compressed therebetween. The paper stiffening member 13 is made of such outline that when folded it has a T shape as shown in Fig. 4. In this case, the ends are not sealed.

Now referring to Figs. 6 to 9, there is indicated at 19 a sanitary garment of the panty type useful with a napkin of this invention. This is shown to comprise a body portion 21 of thin fabric material, which may be any conventional knitted fabric such as is widely used for panty garments, for example acetate or nylon. The body portion consists of front and back sections 23 and 25 joined at stitched side seams 27. An elastic waistband 29 encircles the waist of the body portion, which is puckered, and is stitched to the waist by the seam indicated at 31. The garment has a crotch section 33 of flexible, impervious, waterproof plastic material such as vinyl film which is heat sealable, sealed to a knit fabric. The crotch section is seamed by stitching along its front and back margins throughout their extent to the front and back body sections as indicated at 35 and 37, respectively. The plastic side of the crotch section is on the inside. The body portion and crotch section are cut to provide leg openings 39, and elastic bands 41 encircle the leg openings, being stitched to the puckered margins of the body portion and the side margins of the crotch section which extend along the leg openings as indicated at 43. The front and back margins of the crotch section extend from one leg opening to the other.

On the inside of the front section of the body portion is a narrow substantially non-stretchable fabric tape 45 extending generally centrally from the waist to and terminating at the center of the front margin of the crotch section and caught at its upper end in the waistband seam 31 and at its lower end in the front crotch section seam 35. The tape 45 is stitched along its side margins to the front body section as indicated at 47. On the inside of the back section of the body portion is a similar tape 49 extending centrally from the waist to and terminating at the center of the back margin of the crotch section and caught at its upper end in the waistband seam 31 and at its lower end in the back crotch seam 37. The tape 49 is stitched along its side margins to the back body section as indicated at 51.

Special napkin-fastening members 53 and 55 are provided on the inside of the crotch section 33 at the front and back ends of the crotch section. Each of these consists of a strip of plastic material, preferably a heat-sealable plastic. The strips extend in front-to-back direction. One end of the front fastener strip 53 (its upper end) is caught in the front crotch section seam 35, along with the lower end of the tape 45. The other and lower end of the strip 53 is secured to the inside plastic surface of the crotch section by a heat-sealed seam as indicated at 57. One end of the back fastener strip 55 (its upper end) is caught in the back crotch section seam 37, along with the lower end of the tape 49. The other and lower end of the strip 55 is secured to the inside plastic surface of the crotch section by a heat-sealed seam as indicated at 59. Between their ends, the strips 53 and 55 are free of the crotch section between their ends.

The front strip 53 is provided with a series of slits or buttonholes, three of these being shown, and designated 61, 63 and 65. These slits extend in front-to-back direction and are located generally on the front-to-back center line of the crotch section, spaced in front-to-back direction. The back strip 55 is similarly provided with three slits or buttonholes, designated 69, 71 and 73. These also extend in front-to-back direction and are located generally on the front-to-back center line of the crotch section, spaced in front-to-back direction at intervals corresponding to the spacing of 61, 63 and 65.

As shown in Fig. 7, a napkin 1 is secured in place in the crotch section by having one of its button-headed ends buttoned into the slit or buttonhole 61 in front strip 53 and its other end buttoned into the slit or buttonhole 73 in the back strip 55. The buttonhole 61 is the uppermost buttonhole in the front strip, and the buttonhole 73 is the lowermost buttonhole in the back strip. This positions the napkin toward the front of the crotch section. Alternatively, as shown in Fig. 9, the napkin may have one end buttoned into the lowermost buttonhole 65 of the front strip and its other end buttoned into the uppermost buttonhole 69 of the back strip. This locates the napkin more to the back of the crotch section. An intermediate position of the napkin may be obtained by buttoning its ends into the intermediate buttonholes 63 and 71 of the front and back strips.

With the upper ends of the strips 53 and 55 caught in the front and back crotch seams 35 and 37 along with the lower ends of the tapes 45 and 49, strain is transmitted from the napkin through the strips 53 and 55 to the tapes to be taken by the latter. This takes the strain off the thin fabric of the body portion of the garment, strain being transmitted by the tapes to the waistband 9 via the securement of the upper ends of the tapes in the waistband seam 31. It will also be observed that with the lower ends of the strips 53 and 55 heat-sealed to the crotch section, as opposed to stitching their lower ends, no holes are made in the crotch section through which leakage may occur. The securement of the lower ends of the strips 53 and 55 to the crotch section prevents lateral displacement of the napkin.

In view of the above, it will be seen that the several objects of the invention are achieved and other advantageous results attained.

As various changes could be made in the above constructions without departing from the scope of the invention, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

I claim:

1. A sanitary napkin comprising a body of flocky absorbent material and a porous wrapper, the ends of the wrapper and the body being conterminous, the ends of the napkin each being formed to have a generally centrally projecting integral stem narrower than the width of the napkin and an integral head on the end of the stem wider than the stem and narrower than the width of the napkin, said stems and heads each including integral portions of the body of flocky absorbent material and the wrapper which are continuous with the portions of the body of flocky absorbent material and wrapper intermediate said ends, portions of the napkin including said stems, heads and end regions across the full width of the napkin being compressed flatwise to be of less thickness and stiffer than the portion of the body intermediate its ends, and being impregnated with a material for holding them compressed and stiffening them.

2. A disposable absorbent pad to be worn in the crotch comprising a body of flocky absorbent material and a porous wrapper, the ends of the wrapper and the body being conterminous, said pad being formed to have at each end thereof an integral stem narrower than the width of the pad projecting endwise therefrom and an integral head on the end of the stem wider than the stem and narrower than the width of the pad, said stems and heads each including integral portions of the body of flocky absorbent material and the wrapper which are continuous with the portions of the body of flocky absorbent material and wrapper intermediate said ends, portions of the pad including said stems, heads and end regions across substantially the full width of the pad being compressed flatwise to be of less thickness and stiffer than the portion of the body intermediate its ends, and being impregnated with a material for holding them compressed and stiffening them, the portion of said pad between said compressed end regions being of substantially uniform full thickness entirely across its width.

3. A sanitary napkin having an elongate body with parallel sides and integral T-shaped end portions each comprising a stem narrower than the width of said body projecting endwise centrally from the respective end of said body and an integral head on the outer end of the stem wider than the stem and narrower than said body, said napkin comprising a mass of fluff and a porous wrapper surrounding said fluff, said stems and heads each including portions of the mass of fluff and wrapper which are continuous with the portions of the mass of fluff and wrapper included in said body, the ends of the wrapper and the ends of the mass of fluff being conterminous, said stems, heads and end regions of said body extending across the width of the body being compressed flatwise to be of less thickness and stiffer than the portion of said body between said end regions, said stems, heads and end regions being impregnated with a material for holding them compressed and stiffening them, said body throughout the length thereof between said compressed end regions thereof being of substantially uniform full thickness across its entire width from one side thereof to the other.

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