Nov. 24, 1964 I. S. DE WOSKIN 3,157,928

FASTENING DEVICE

Filed Oct. 30, 1961

4 Sheets-Sheet 1

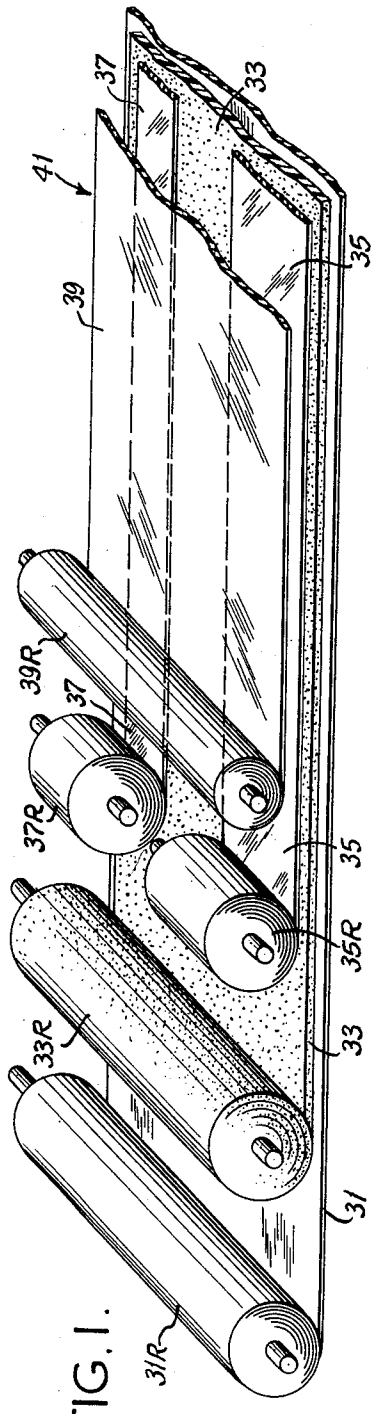


FIG. 1.

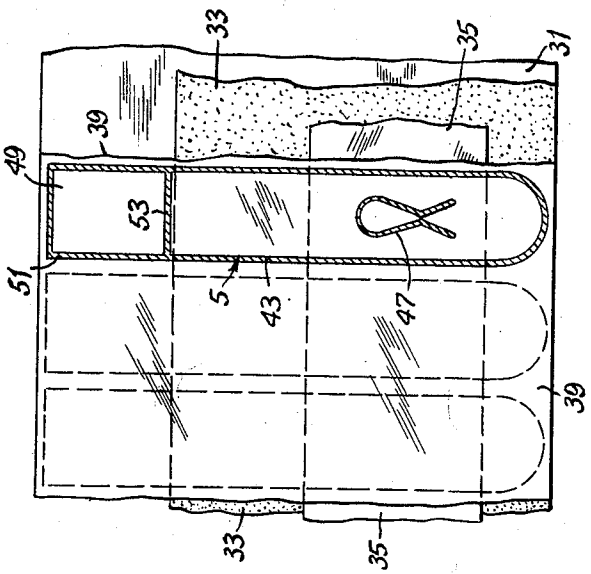


FIG. 4.

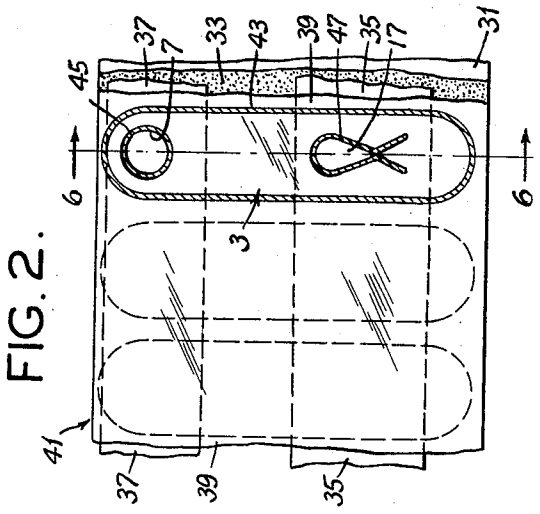


FIG. 2.

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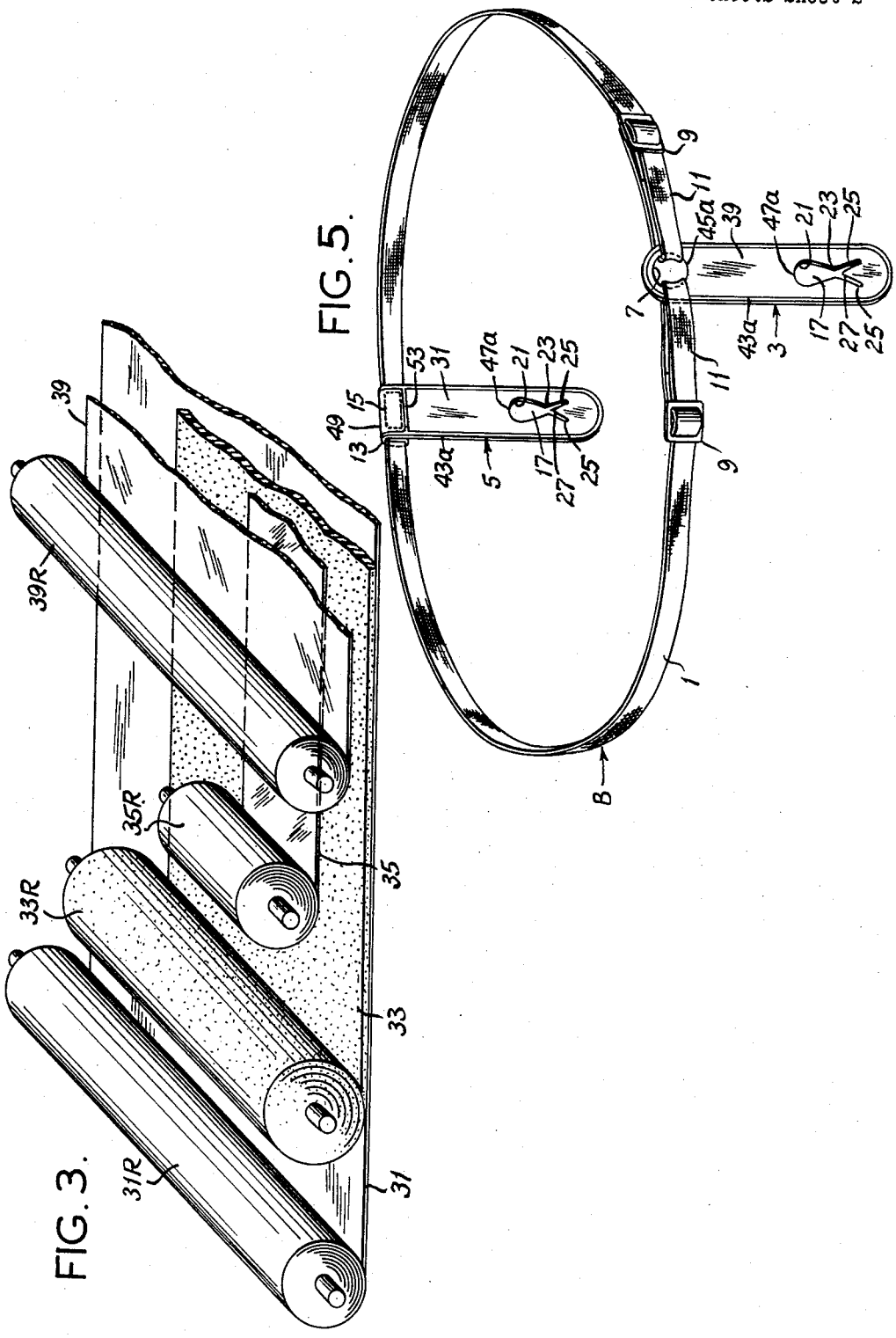


FIG. 3.

FIG. 5.

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FIG. 6.

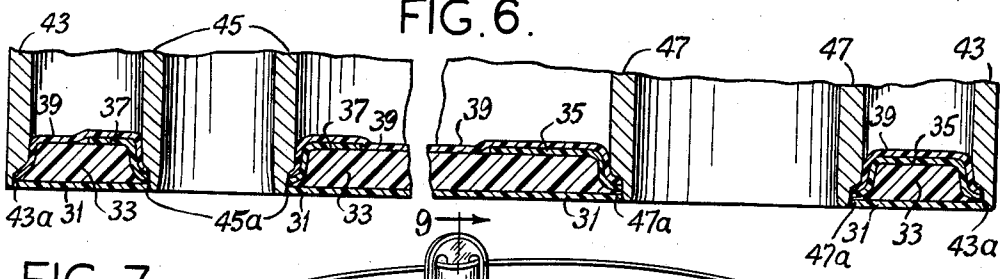


FIG. 7.

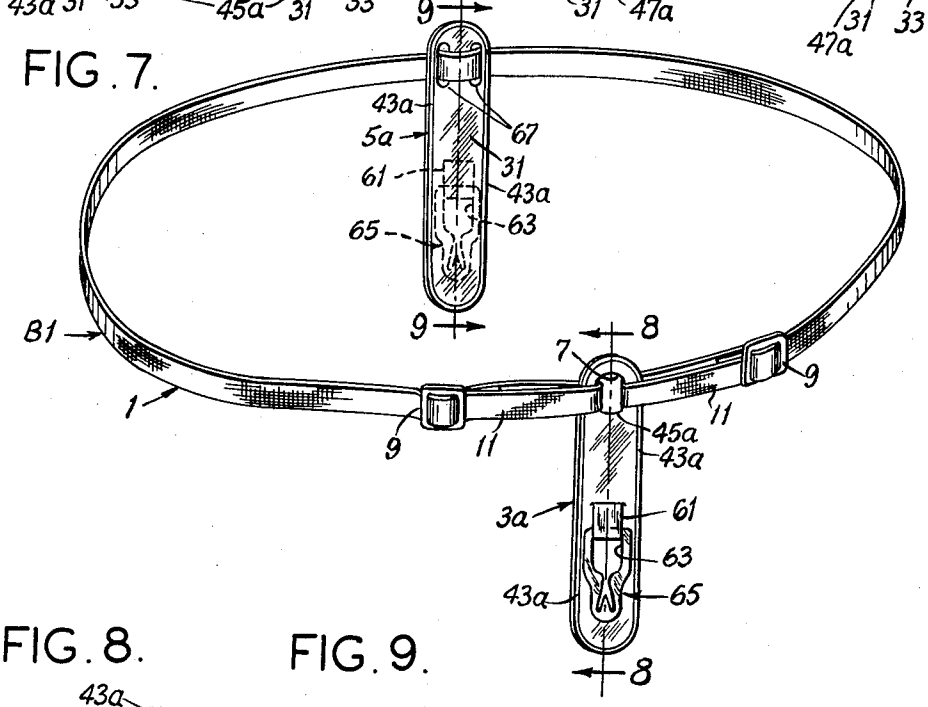


FIG. 8.

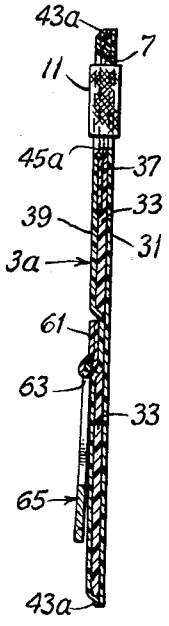
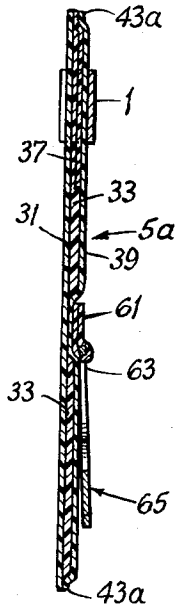


FIG. 9.



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FIG. 10.

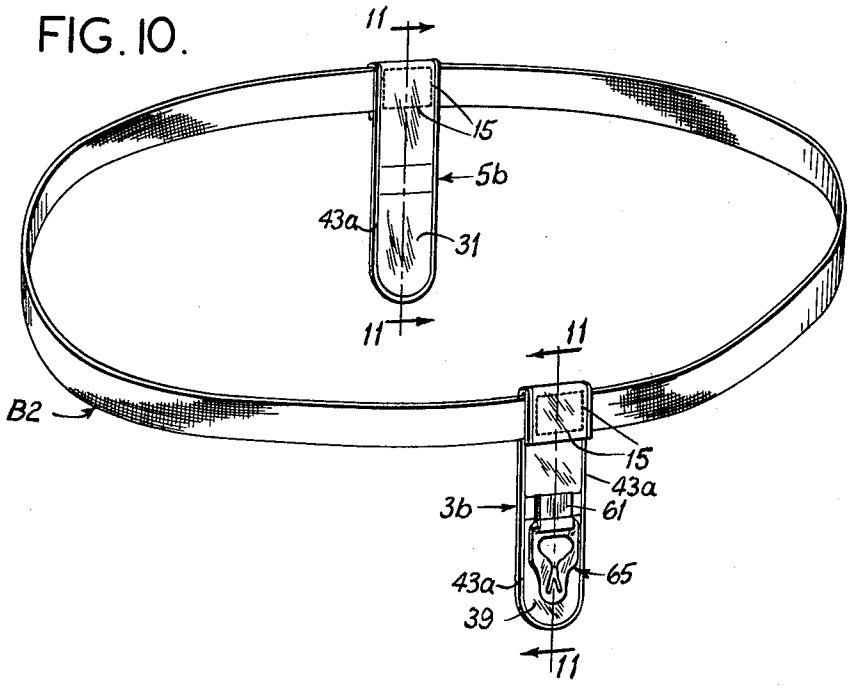


FIG. 11.

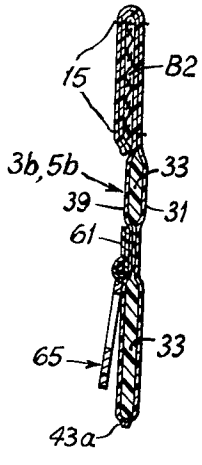


FIG. 12.

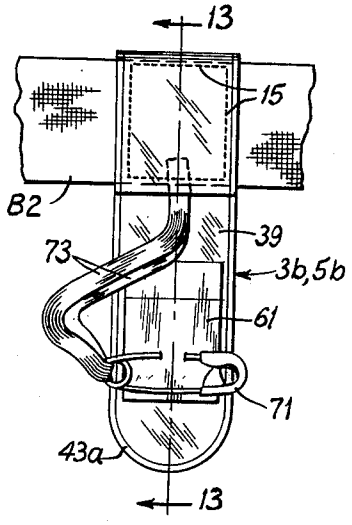
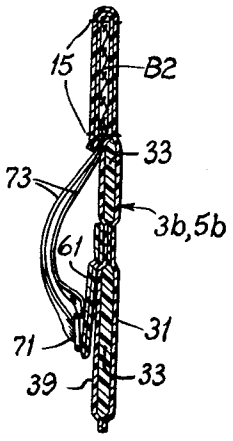


FIG. 13.



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3,157,928

FASTENING DEVICE

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Filed Oct. 30, 1961, Ser. No. 148,528
9 Claims. (Cl. 24—150)

This invention relates to apparel, more particularly to items of apparel, such as sanitary belts, worn next to the body.

A typical sanitary belt comprises a waistband and tabs hanging down from the band at front and back provided with means for fastening the ends of a sanitary napkin thereto. Among the several objects of the invention may be noted the provision of an improved cushioned construction for such tabs which makes them comfortable to wear next to the body. A further object of the invention is the provision of a cushioned construction such as described provided with an opening, such as a hole for receiving the waistband, which is suitably stiffened or reinforced at the opening. Still a further object of the invention is the provision of a tab such as described provided with an opening formed to receive and grip a gauze end of a sanitary napkin, and reinforced as such opening. While the invention is particularly described herein as it pertains to sanitary napkins tabs, it will be understood that its principles may be applied to other items of apparel where a cushioned construction may be desirable, such as hose supporters, shoulder pads for straps of ladies' garments, and the like. 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 perspective illustrating how certain strips are combined in the manufacture of certain front tabs of this invention for sanitary belts;

FIG. 2 is a plan view showing how the front tabs are formed from the strips combined as in FIG. 1;

FIG. 3 is a perspective illustrating how certain strips are combined in the manufacture of certain back tabs of this invention for sanitary belts;

FIG. 4 is a plan view showing how the back tabs are formed from the strips combined as in FIG. 3;

FIG. 5 is a perspective showing a sanitary belt having a front tab made according to FIGS. 1 and 2 and a back tab made according to FIGS. 3 and 4;

FIG. 6 is an enlarged cross section taken on line 6—6 of FIG. 2 with parts broken away to reduce the width of the view;

FIG. 7 is a perspective showing a sanitary belt having modified types of front and back tabs;

FIG. 8 is an enlarged vertical section of the front tab of FIG. 7, taken on line 8—8 of FIG. 7;

FIG. 9 is an enlarged vertical section of the back tab of FIG. 7, taken on line 9—9 of FIG. 7;

FIG. 10 is a perspective showing a sanitary belt having another type of tab constructed in accordance with this invention;

FIG. 11 is an enlarged vertical section of the tab used on the FIG. 10 belts, taken on either of lines 11—11 of FIG. 10;

FIG. 12 is a view in elevation showing still another type of tab constructed in accordance with this invention; and

FIG. 13 is a vertical section of the FIG. 12 tab, taken on line 13—13 of FIG. 12.

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

Referring first to FIG. 5 of the drawings, there is indicated at B a sanitary belt comprising an elastic waistband 1 carrying a front tab 3 and a back tab 5 constructed in accordance with this invention. As shown, the front tab 3 has a circular hole 7 adjacent its upper end. The ends of the elastic band 1 are looped through this hole and held by clasps 9. The loops are designated 11. The back tab has its upper end folded around the elastic band 1 as indicated at 13 and secured thereto by stitching 15. The front tab has an opening 17 adjacent its lower end formed for gripping one end of the gauze of a typical sanitary napkin. The back tab has a similar opening 17 adjacent its lower end formed for gripping the other end of the gauze. Each of openings 17 is formed so as to have an upper portion 21 the sides of which converge in downward direction to a narrow throat 23, and narrow slot portions 25 diverging in downward direction from the throat, there being a triangular tongue 27 of the tab material between the slots. This form is such that the gauze end of a napkin may be folded lengthwise to a width narrow enough for insertion in the upper portion 21 of the opening, after which the folded gauze end may be pulled down into one or the other of the slots to cause it to become firmly gripped to the tab.

Front tabs 3 are made as illustrated in FIGS. 1, 2 and 6. As shown in FIG. 1, five continuous strips 31, 33, 35, 37 and 39 are withdrawn from rolls 31R, 33R, 35R, 37R and 39R and combined. Strips 31 and 39 are relatively wide strips of flexible electronically heat-sealable sheet plastic material, such as a polyvinyl chloride material. They are of equal width, this being somewhat greater than the length of the front tabs to be formed. Strip 33 is a strip of a soft, flexible, electronically heat-sealable plastic foam material having the same width as strips 31 and 39. It may be a soft polyvinyl chloride foam, for example. Strips 35 and 37 are relatively narrow strips of relatively stiff electronically heat-sealable sheet plastic material, such as a relatively stiff polyvinyl chloride material. The strips are combined with strip 33 superimposed on strip 31, strips 35 and 37 superimposed on strip 33 with strip 35 extending adjacent one edge and strip 37 extending adjacent the other edge of strip 33, and with strip 39 superimposed on strips 35 and 37.

The composite strip formed by combining strips 31, 33, 35, 37 and 39 is designated 41. This composite strip is intermittently fed through an electronic heat-sealing press which is provided with a heat-sealing die shaped to die out tabs 3 from the composite strip and to heat-seal together the edges of the portions of the strips included in the tabs. FIGS. 2 and 6 illustrate this operation. It will be understood that the press has a bed plate constituting a first electrode and a vertically movable head carrying a die constituting a second electrode. This die is formed with a downwardly extending rib 43 having the overall outline of the tab to be formed (i.e., an elongate rounded-end tab outline, a downwardly extending circular rib 45 for forming the hole in the tab, and a downwardly extending rib 47 for forming the opening 17 (including slots 25) in the tab. The die may be formed to die out a plurality of tabs on each operation of the press. For example, it may be formed to die out three tabs on each operation, and this is illustated in FIG. 2.

With the head of the press raised, the leading end portion of the composite strip 41 is brought over the bed plate of the press, and then the head of the press is lowered to cause the die ribs 43, 45, 47 to press down on the composite strip. High frequency electrical energy is applied to the bed plate of the press and the die to die out tabs 3 from the composite strip and to effect electronic heat-sealing together of the portions of the strips included in each tab at the lower edges of the die ribs 43, 45, 47. Referring to FIGS. 5 and 6, the heat seal so produced around the boundary of the tab is indicated at 43a, the

heat seal so produced around the boundary of hole 7 is indicated at 45*a*, and the heat seal so produced around the boundary of opening 17 is indicated at 47*a*. The lower edges of the ribs are formed (as appears in FIG. 6) so as to cut through the composite strip 41, accompanying the fusion of the edges of the portions of the strips included in each tab. As a result, each tab is died out of the composite strip all around the heat seal 43*a*, and portions are died out from within each tab to define hole 7 and opening 17.

The back tabs 5 are made as illustrated in FIGS. 3 and 4 in a manner similar to the manufacture of the front tabs, except that the outer strips 31 and 39 are wider than in FIG. 1, the foam strip 33 is narrower than the outer strips, and the stiff strip 37 is omitted since the back tabs are formed without the band-receiving holes 7 of the front tabs. Also, the die used to die out tabs 5 is formed so that these tabs are longer than tabs 3, and have straight instead of rounded upper ends. The foam strip 33 is positioned with one edge registering with the lower edges of strips 31 and 39 as appears in FIG. 4, and its other edge is spaced inward from the other edges of strips 31 and 39. This provides an unpadded upper end portion 49 of the tab to be folded around and stitched to the band 1. The die is formed not only to heat-seal the edges of strips 31 and 39 together all around the upper end of tab 5 as indicated at 51 in FIG. 4, but also to form a heat seal at 53 across the upper end of the portion of the foam strip included in the tab without cutting through the tab at this seal.

From the above, it will be apparent that each of the tabs 3 and 5 comprises outer layers of flexible heat-sealable sheet plastic material derived from strips 31 and 39, and which hence may be designated 31 and 39, a cushion layer of soft heat-sealable plastic foam derived from strip 33, and whence hence may be designated 33, sandwiched between the outer layers, and an insert of relatively stiff heat-sealable sheet plastic material derived from strip 35, and which hence may be designated 35, between the cushion layer and one of the outer layers (layer 39) at one end of the tab. In both the front and back tabs, the cushion layer is coextensive in width with the outer layers. In the front tab, the cushion layer is coextensive in area with the tab. As to both the front and back tabs, the insert 35 is coextensive in width with the tab, but shorter in height than the length of the tab. Each tab has opening 17 extending through the outer layers 31 and 39, the cushion layer 33 and the insert 35 formed to receive and grip an end of a santitary napkin. The front tab 3 additionally has an insert of relatively stiff heat-sealable sheet plastic material at the top derived from strip 37, and which hence may be designated 37, between the cushion layer 33 and outer layer 39. This insert 37 is coextensive in width with the tab, but shorter in height than the length of the tab. The front tab has the band-receiving hole 7 extending through the outer layers, cushion layer and insert 37. The outer layers, cushion layer and inserts, are heat-sealed at mutual boundaries thereof including their mutual boundaries around opening 17 and, in the case of the front tabs, around hole 7.

Tabs 3 and 5 are applied to the waistband 1 with layer 31 on the inside, layer 39 on the outside (see FIG. 5). This places the stiff inserts on the side of the cushion layer 33 away from the body. With the cushioning provided by layer 33 of each tab, the belt is comfortable to wear. Insert 35 provides for stiffening of the boundary of opening 17 to enable secure fastening of the gauze end of a sanitary napkin, without breakdown of the tab around the opening, and insert 37 provides for reinforcement of the boundary of hole 7 to prevent the loops 11 of the waistband from tearing out the top of front tab 3.

FIG. 7 illustrates a sanitary belt B1 with modified types of front and back tabs 3*a* and 5*a* of this invention, these tabs being shown in section in FIGS. 8 and 9. The front tab 3*a* is made like the front tab 3, with outer layers 31 and 39, cushion layer 33, insert 37 and hole 7, but, instead of having insert 35 and hole 17, a strip 61 of flexible electronically heat-sealable material is inserted through opening 63 in a metal or plastic sanitary napkin clasp 65, formed into a loop, and the ends of the strip so formed into a loop are electronically heat-sealed to the outside face of the outer layer 39. Opening 63 is formed like opening 17 for attaching a gauze end of a sanitary napkin. The back tab 5*a* is made like the front tab, with an insert 37 and with two side-by-side vertical slots 67 instead of hole 7 for receiving the waistband 1 as shown in FIG. 7.

FIG. 10 illustrates a sanitary belt B2 with further modified types of front and back tabs 3*b* and 5*b* of this invention, FIG. 11 being a section of either tab. Tabs 3*b* and 5*b* are similar to tabs 3*a* and 5*a* except that they do not have any stiffening insert, and their upper ends are formed like the upper ends of the back tab 5 of the FIG. 5 belt and are stitched to the waistband 1 as indicated at 15.

FIGS. 12 and 13 illustrate a modification of the tabs shown in FIGS. 10 and 11 wherein, instead of using the clasp 65, a safety pin 71 is carried by strip 61 to be used for attaching a gauze end of a napkin. The pin is shown as held captive by a ribbon 73, but this may be omitted.

It will be observed that each of the above-described tabs comprises outer layers 31 and 39 of flexible heat-sealable sheet plastic material and a cushion layer 33 of soft heat-sealable plastic foam sandwiched between the outer layers, with these layers heat-sealed together at their mutual boundaries. Each tab is therefore a padded tab, so that the belt is comfortable to wear. Where an opening is provided in a tab, such as hole 7 or opening 17, stiffening of the boundary of the opening is provided in a simple and economical manner with a minimum of operations simply by providing a strip such as 35 or 37, and heat-sealing around the boundary of the opening. This avoids any necessity for using metal eyelets or the like. It will be understood that this concept of providing a cushioned apertured item of apparel with stiffening around the aperture may be applicable to items other than the tabs of sanitary belts.

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.

What is claimed is:

1. An elongate tab for a sanitary belt comprising outer layers of flexible heat-sealable sheet plastic material, a cushion layer of soft heat-sealable plastic foam material between said outer layers and coextensive in width with said outer layers, an insert of relatively stiff heat-sealable sheet plastic material between said cushion layer and one outer layer toward one end of the tab, said insert being coextensive in width with said outer layers and cushion layer but shorter in height than the length of the tab, said tab having an opening through said outer layers, cushion layer and insert formed to receive and grip an end of a sanitary napkin, and said outer layers, cushion layer and insert being heat-sealed at mutual boundaries around said opening.

2. An elongate tab for a sanitary belt comprising outer layers of flexible heat-sealable sheet plastic material, a cushion layer of soft heat-sealable plastic foam material between said outer layers and coextensive in area with said outer layers, an insert of relatively stiff heat-sealable sheet plastic material between said cushion layer and one outer layer at one end of the tab, said insert being coextensive in width with said outer layers and cushion layer but shorter in height than the length of the tab,

said tab having an aperture through said outer layers, cushion layer and insert, and said outer layers, cushion layer and insert being heat-sealed at mutual boundaries thereof including their mutual boundaries around said aperture, and said tab being adapted for attachment of a sanitary napkin thereto toward its other end.

3. An elongate tab for a sanitary belt comprising outer layers of flexible heat-sealable sheet plastic material, a cushion layer of soft heat-sealable plastic foam material between said outer layers and coextensive in area with said outer layers, first and second inserts of relatively stiff heat-sealable sheet plastic material between said cushion layer and one outer layer at opposite ends of the tab, each insert being coextensive in width with said outer layers and cushion layer but shorter in height than the length of the tab, said tab having a band-receiving hole at one end through said outer layers, cushion layer and first insert and an opening toward its other end through said outer layers, cushion layer and second insert formed to receive and grip an end of a sanitary napkin, and said outer layers, cushion layer and inserts being heat-sealed at mutual boundaries thereof including their mutual boundaries around said hole and said opening.

4. An elongate tab for a sanitary belt comprising outer layers of flexible heat-sealable sheet plastic material, a cushion layer of soft heat-sealable plastic foam material between said outer layers and coextensive in area with said outer layers, an insert of relatively stiff heat-sealable sheet plastic material between said cushion layer and one outer layer at one end of the tab, said insert being coextensive in width with said outer layers and said cushion layer but shorter in height than the length of the tab, said tab having a band-receiving hole at one end through said outer layers, cushion layer and insert, said outer layers, cushion layer and insert being heat-sealed at mutual boundaries thereof including their mutual boundaries around said hole, a strip secured to the outside of said one outer layer toward the other end of the tab, and means carried by said strip for attaching one end of a sanitary napkin thereto.

5. An elongate tab as set forth in claim 4 wherein said strip is a strip of flexible heat-sealable material formed into a loop with its ends heat-sealed to the outside of said one outer layer.

6. An elongate tab as set forth in claim 5 wherein said means comprises a clasp having an opening receiving the loop.

7. An elongate tab for attachment at one end constituting its upper end to a sanitary belt, said tab comprising outer layers of flexible heat-sealable sheet plastic material, and a cushion layer of soft heat-sealable plastic material between said outer layers toward the other and lower end of the tab, said cushion layer being coextensive in width with said outer layers but shorter in height than the length of the tab and extending to said other lower end of the tab, said layers being heat-sealed at mutual boundaries thereof at said lower end of the tab, at the sides of the tab, and along a line extending transversely across the tab below the upper end of the tab, a strip of flexible heat-sealable material heat-sealed to the outside of one outer layer below said transverse line, and means carried by said strip for attaching one end of a sanitary napkin thereto.

8. An elongate tab as set forth in claim 7 wherein said strip is formed into a loop with its ends heat-sealed to the outside of said one outer layer.

9. An elongate tab as set forth in claim 8 wherein said means comprises a clasp having an opening receiving the loop.

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