

[54] **HOLDER FOR ABSORBENT PADS, SUCH AS INFANTS NAPKINS**

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[58] Field of Search.... 128/286, 287, 290 R, 290 H, 128/284

[56] **References Cited**

UNITED STATES PATENTS

1,961,515	6/1934	Friedman	128/284
2,224,518	12/1940	Lakritz	128/284
2,570,963	10/1951	Mesmer	128/284

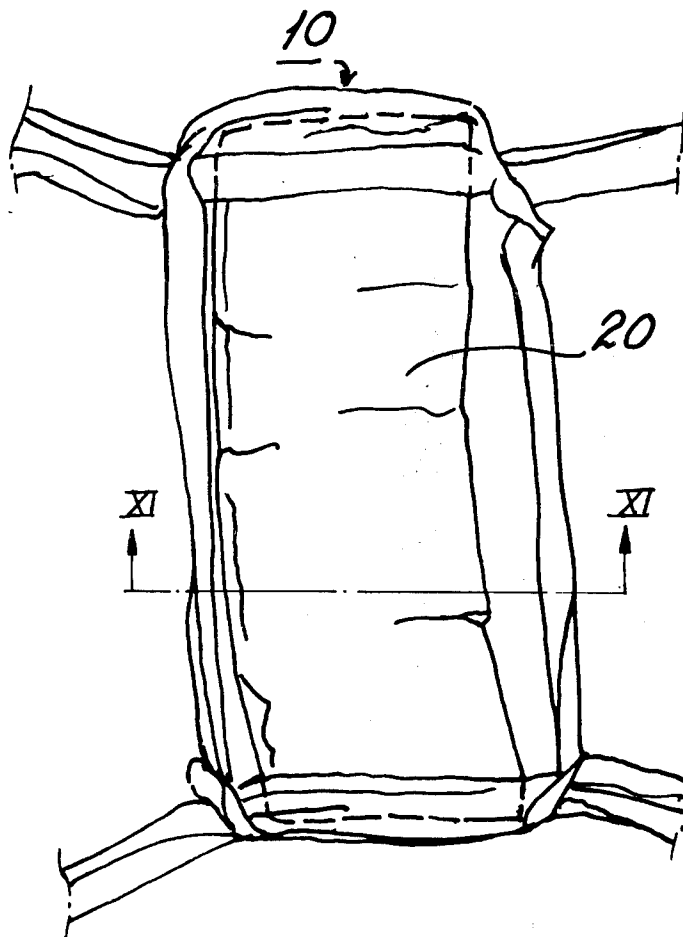
2,630,120	3/1953	Nielson	128/287
2,916,037	12/1959	Hansen	128/284
3,036,573	5/1962	Voigtman et al.	128/290
3,349,769	10/1967	Piekarski	128/284
3,563,242	2/1971	Hedstrom	128/290 R
3,635,221	1/1972	Champaigne, Jr.	128/290 R

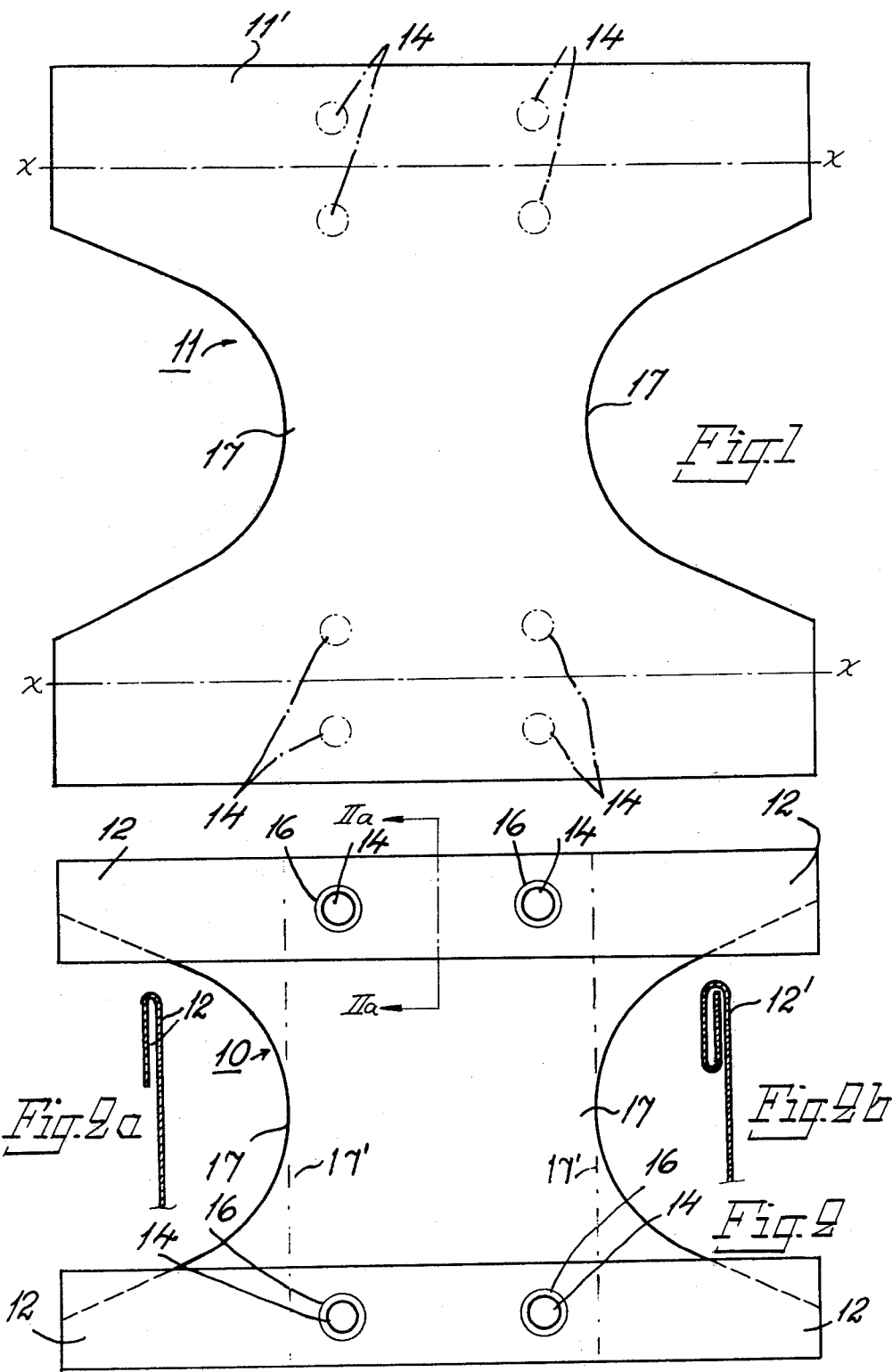
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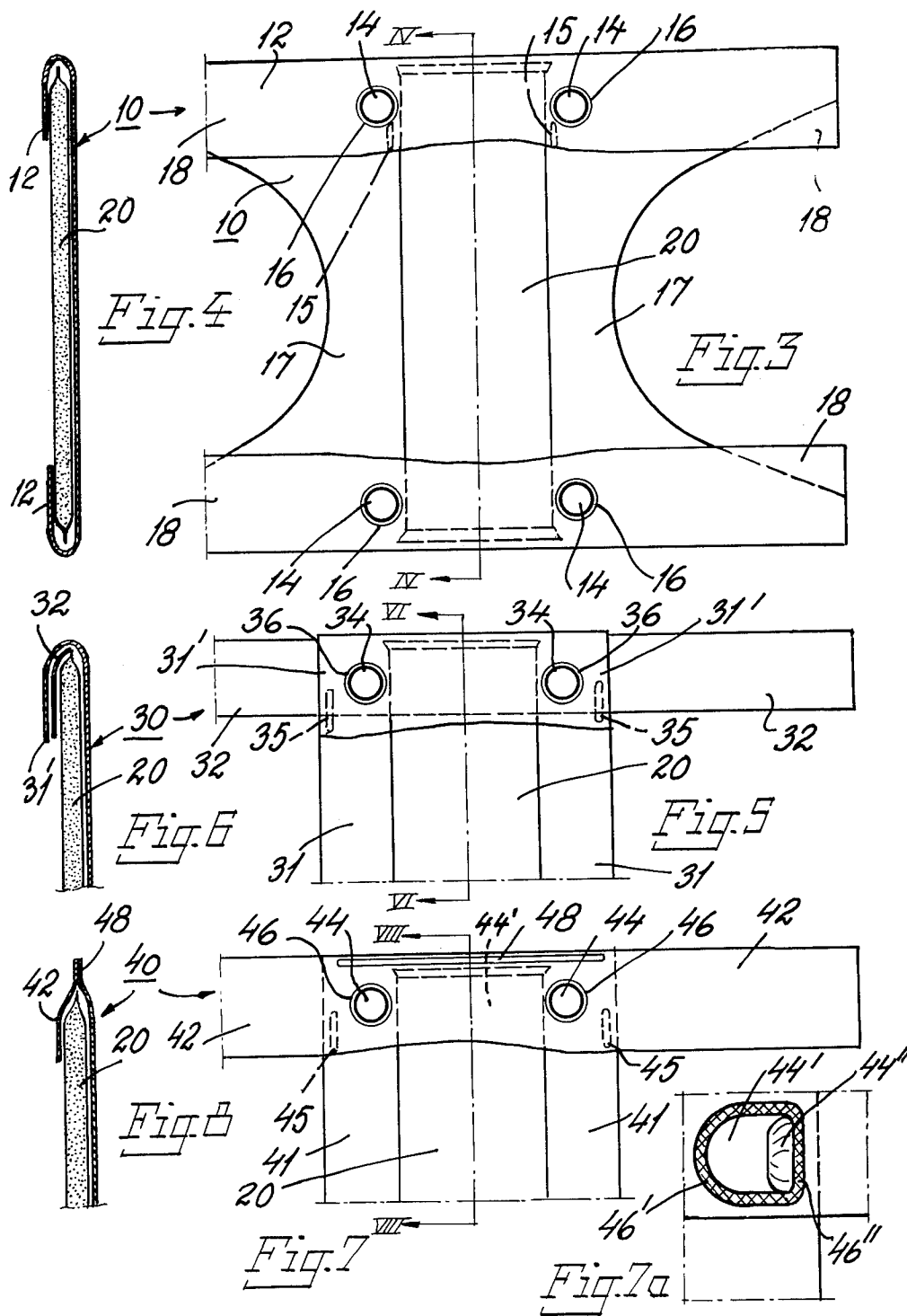
[57] **ABSTRACT**

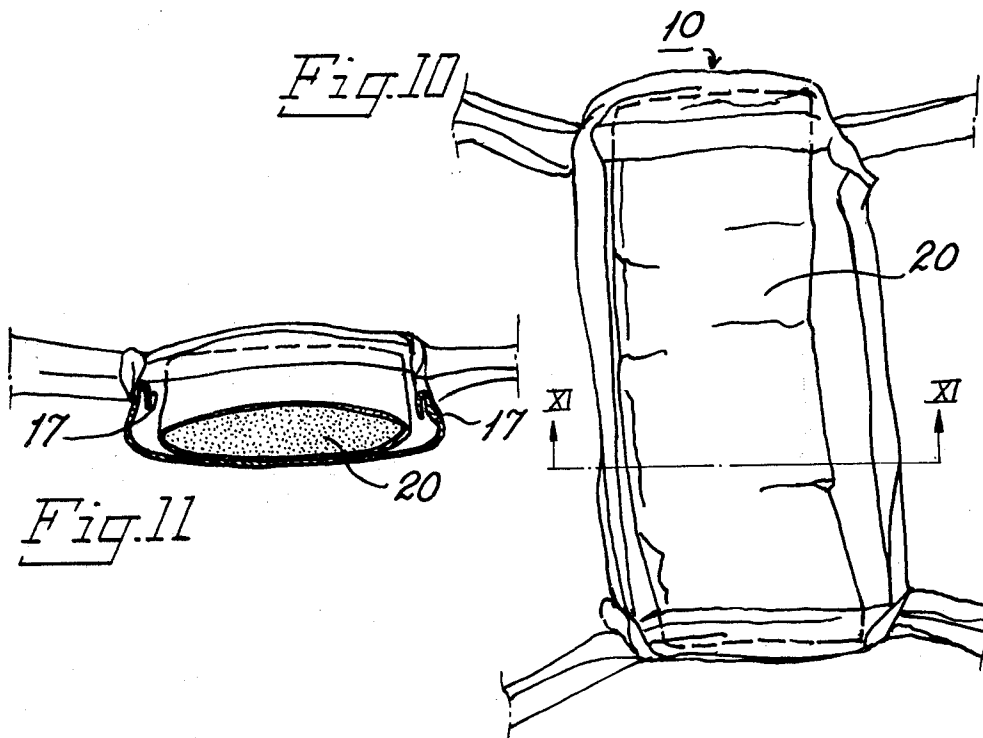
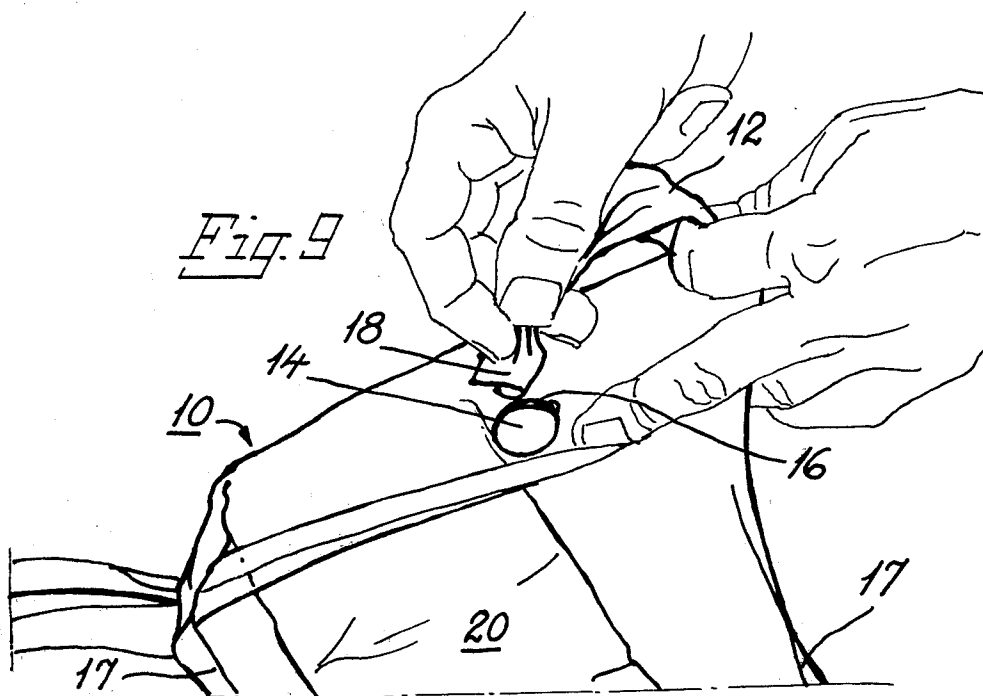
A holder of thin sheet material for an absorbent pad or inlay is provided, comprising a central portion from which tie ends extend in X or H form. An opening is provided near each junction tie end - central portion for threading through of the tie ends before the holder is tied on, whereby opposite edges of the central portion are raised and twisted so as to cause the holder to assume a trough-like form for conveniently receiving the absorbent material.

10 Claims, 14 Drawing Figures









HOLDER FOR ABSORBENT PADS, SUCH AS INFANTS NAPKINS

The present invention relates to a holder or fastening device for an absorbent pad, e.g. an infant's napkin.

As infant's diapers there are widely used today light elongated cushions or pads of a strongly absorbent paper or cellulose material which by means of a holder, the "back sheet" or "swaddle", of thin plastics, is tied on the infant. The device is simple and efficient but suffers from the inconvenience that the cooperation between the pad and the swaddle is not always very good, so that the pad may often slide out of position in relation to the swaddle. To remedy this inconvenience the swaddle is often made in such a way that it forms two opposing pockets in which the ends of the pad may be inserted whereby the pad is better and more safely oriented in relation to the swaddle. The arrangement means a considerable improvement but still the cooperation between the pad and the holder or swaddle cannot be considered as completely satisfactory.

The invention has thus for its object to provide a holder of the kind under consideration, in particular a pad or napkin swaddle which as to its structure and design is quite as simple as swaddles hitherto known but considerably improved so as to form together with the napkin or pad a perfectly cooperating unit or diaper, in which the pad is firmly and securely oriented and which may be readily tied in place on the infant with the pad in a fixed position without any risk of displacement. The object is attained and the above indicated inconveniences in connection with previous pad or napkin swaddles are removed, it being gained at the same time that the swaddle itself is caused to contribute to the protecting and collecting effect which was previously the responsibility of the absorbent pad alone, by the holder or swaddle according to the invention.

A few embodiments of the invention will now be described by way of example with reference to the accompanying drawings wherein

FIG. 1 is a plan view of a developed blank of a pad holder or swaddle according to the invention.

FIG. 2 shows a plan view of the completed swaddle and

FIG. 2a is a fragmentary cross-section along the line IIa—IIa in FIG. 2.

FIG. 2b is a cross-sectional view corresponding to FIG. 2a but shows a modification.

FIG. 3 is a plan view of the pad holder or swaddle with a pad inserted, and

FIG. 4 is a cross-sectional view along the line IV—IV in FIG. 3.

FIG. 5 is a view corresponding to one half of FIG. 3 and shows a modified embodiment of a pad holder or swaddle according to the invention, and

FIG. 6 is a cross-sectional view along the line VI—VI in FIG. 5.

FIG. 7 corresponds likewise to one half of FIG. 3 and shows an embodiment further modified, whereas

FIG. 8 is a sectional view taken along the line VIII—VIII in FIG. 7.

FIG. 7a is a fragmentary view showing a modified configuration of the apertures which are formed according to the invention in the swaddle.

FIG. 9 is a perspective view which illustrates how the swaddle and the pad are caused to cooperate according to the invention.

FIG. 10 is a perspective view of the complete unit pad/swaddle or diaper ready for tying on the infant and finally,

FIG. 11 shows a cross-sectional view taken along the line XI—XI in FIG. 10.

FIG. 12 is a perspective view of the diaper as positioned on an infant.

In FIG. 1 there is thus shown a developed blank 11 for a pad holder or swaddle 10 according to the invention, the material comprising in conventional manner a thin plastics foil. The blank 11 shown agrees, in fact, substantially with the simplest type of swaddles now used, that is, it comprises two parallel strip portions 11' united by a transverse central portion 17 whose opposite edges in most cases are curved. When such a blank with no further treatment is used as a swaddle, see e.g., the U.S. Pat. No. 3 563 242, the blank is folded along lines x—x so that folded strip portions 12 are formed, see FIG. 2. Developed in plan the swaddle will thus exhibit an X or H form which may be considered as composed of a central, elongated, substantially rectangular portion, as indicated by dash-dot lines 17' in FIG. 2, and strip portions 12 which extend from the corners of said portion. An absorbent pad is applied by its end being pushed into the portions 12 thus folded, approximately as shown in FIG. 3 where the pad is designated by 20. In order to better orient the pad and fix its position in relationship to the holder or swaddle it may occur that the folded and superposed portions of the strip portions 12 are tacked or united along welding beads or hot seals 15, see FIG. 3, a pocket being formed between the beads 15 of each pair, the ends of the pad 20 thus being received in said pockets in a fixed position. The complete diaper-forming assembly pad/swaddle is then tied in place on an infant by means of the ends 18 of the strip portions 12.

According to the invention the blank 11 is provided with apertures 14, either in connection with the manufacture (punching) of the blank 11, as shown in FIG. 1, or after the strip portions 11' have been folded along lines x—x, in which case the apertures 14 are punched through the superposed layers of each folded strip portion 12 as shown in FIG. 2. In the last mentioned case preferably a heat punching operation is used so that, at the same time as the apertures 14 are cut, there is a melting together or welding of the two layers along the edges of the aperture, as indicated at 16 in the figures. The apertures 14 are located symmetrically in relationship to the axes of symmetry of the blank or swaddle, and the spacing of the apertures in each strip portion 12 is adjusted to the width of the pad which may be received at a proper clearance between the apertures, as may be clearly seen from FIG. 3. If the edges of the apertures 14 are melted or welded together according to the above, a pocket will obviously be formed between these welds 16, corresponding to the pocket formed between the previously used weld beads 15, as may be seen from FIG. 3.

It may be stated that the essence of the invention resides in the introduction of the apertures 14. As a matter of course the completed diaper assembly pad/swaddle, as this is shown in FIG. 3, may be tied directly on the infant by means of the strip portions 12 in accordance with conventional practice. However, thanks to the apertures 14 introduced according to the invention a great advantage is gained in that the ends 18 of each strip portion 12 is first threaded through the adjacent

aperture 14, which operation is illustrated in FIG. 9. In doing so each end 18 is threaded from above, that is from that side of the swaddle upon which the pad is resting, through the adjacent aperture 14 and is then pulled completely through the aperture. The final result will then be as illustrated in plan in FIG. 10, that is, the pad will rest in a trough-like or hammock-like structure, as threading of the ends 18 through the holes 14 will bring about a kind of twisting movement which causes the edges of the central portion 17 of the swaddle to raise, see FIG. 11, on either side of the longitudinal edges of the pad 20. Hereby the diaper formed will be capable of exercising a further function beyond its basic fastening and holding function, viz., to form a regular container about the pad, as may be particularly clearly seen from FIGS. 10 and 11. Hereby the unit pad/swaddle need not rely exclusively on the absorption capacity of the pad for intercepting liquid and feces, but the swaddle itself forms an external cover about the pad with a collecting and shielding effect.

Within the scope of the invention the swaddle may be formed in several ways and in particular it is possible to adjust readily the material thickness of the strip portions 12 as desired, for example, as illustrated in FIG. 2b. According to this figure the strip portion 12 of the blank is folded not once but twice so that the thickness of the finished strip portion 12' is tripled.

In the foregoing it has been disclosed how the swaddle or pad-holder according to the invention is made in one piece, that is, a blank is cut or punched from a suitable plastics material, e.g., a film or sheet of plastics having suitable properties. In doing so it is unavoidable, which may be understood from e.g., FIG. 1, that there is a rather considerable waste of material. However, the holder or swaddle according to the invention may also be made in three parts, substantially with no waste at all, as illustrated in FIGS. 5-8. According to FIGS. 5 and 6 the main portion of the swaddle 30 consists of a substantially rectangular portion 31 which is folded at either short end 31' about a crossing strip 32, after which four apertures 34 are punched in the same pattern as before, preferably while heat sealing the edges 36. In order to further fix the joint and to avoid freely extending corner and edge portions, a few further weld or seal beads 35 may be applied at the same time adjacent the corners of the folded portions 31', as shown in FIG. 5. As before a napkin or an absorbent pad 20 is inserted into the pocket formed between the apertures 34, and the swaddle is used and operates exactly as described in the foregoing. One advantage is that the tie strings or strips 32 may be made longer so that they may be more readily tied together when the swaddle with the pad is applied, and these strips 32 are also suited for being supplemented with hooks or the like in order to further facilitate application.

A still further simplified embodiment is shown in FIGS. 7 and 8 according to which there is no folding at all. The back sheet or swaddle 40 shown in these figures comprises quite simply a central rectangular portion 41 with transverse strips 42, said strips being applied across the short ends 41' of the rectangular portion 41 and secured by means of a continuous weld or seal bead 48, which possibly is divided into shorter sections. As in previous embodiments further short beads 45 perpendicular to the bead 48, see FIG. 7, may be provided adjacent the crossing between the ends 41' of the central portion and the transverse strips 42, and

likewise the same pattern of apertures 44 with heat-sealed edges 46 are provided. As to appearance and function the swaddle 40 almost exactly coincides with the swaddle 30; the difference is only that the ends of the napkin or pad 20 is received in a somewhat different manner in the pockets formed between the openings 34 and 44 of each pair, see FIGS. 6 and 8, respectively.

As disclosed above the apertures 14, 34 and 44 are preferably made by heat punching or heat sealing so that their edges are welded together in the manner described. However, it is expressly pointed out that the invention for its function is in no way dependent on such a melting or welding together of the edges of the apertures. In the simplest case a perfectly operative back sheet or swaddle is obtained according to the invention if a swaddle sheet 11 according to FIG. 1 is provided quite simply with eight openings 14 symmetrically arranged as this figure shows. If the strip portions 11' of the blank are folded along lines x-x, so that the openings coincide in pairs according to FIG. 2 and if, in connection with the folding, the ends 18 of the strip portions 12 formed are directly threaded through the openings, then, of course, there will be defined as before a pocket between the openings by the strip portions 12 pulled through. As before the ends of an absorbent pad may be pushed into the pockets formed and oriented in a fixed position, and a complete unit or diaper can be tied on with the same result as before. For practical reasons and reasons of convenience, however, it is advisable to provide the openings with welded or hot sealed edges so that the swaddle, when ready for use, will appear as shown e.g., in FIG. 2.

To conclude it is also pointed out that the openings or apertures disclosed of course need not be circular but may have an arbitrary configuration. Neither need they form completely tree openings; in mechanical manufacture of articles of the kind under consideration it means a great advantage if there is no material scrap cut off in the machine proper. Thus the openings or apertures need not be completely punched out but the material may hang on in the form of a flap. This may even be arranged in such a way that it offers an advantage and facilitates the above disclosed threading through the openings. In FIG. 7a there is illustrated a proposed arrangement of the apertures, applied on the embodiment 40 of the swaddle shown in FIGS. 7 and 8. A weld or hot seal is provided, for example, in such a way that the bead formed has a rounded portion 46' and a straight portion 46'', after which the thickness of the material is only slitted or cut through within the rounded portion so that a flap 44'' clinging to the straight seal portion 46'' is formed, which flap is shown in FIG. 7a as bent down from the opening 44' formed. According to this principle many types and forms of apertures may be provided.

As a matter of course the invention is not limited to the embodiments disclosed but may be varied in further respects within the scope of the inventive concept.

I claim:

1. A holder for an elongated absorbent pad intended to be secured to the body, for instance by being tied therearound, comprising a substantially rectangular center portion formed from a thin flexible sheet material, said center portion being extended in the longitudinal direction of the pad, and plural striplike fastening portions fixed to and extending from the corners of said

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center portion, the improvement wherein opening means in the form of holes or slits are formed in the center portion adjacent the corners thereof, and the free end of each strip portion being threaded into and the strip portion pulled through the adjacent opening means, the two strip portions adjacent each end of the center portion being pulled away from one another in opposite directions to tension said strip portions and cause twisting of the adjacent longitudinally extending edges of the center portion so that said center portion assumes a troughlike form for accommodating an elongated absorbent pad therein.

2. A holder according to claim 1, wherein said center portion has a length which is greater than the minimum width thereof, one pair of said striplike fastening portions being fixedly connected to one end of said center portion adjacent the opposite longitudinally extending edges thereof and projecting outwardly therefrom in opposite directions, and another pair of said striplike fastening portions being fixedly connected to the other end of said center portion adjacent the opposite longitudinally extending edges thereof and projecting outwardly in opposite directions.

3. A holder according to claim 2, wherein all of said striplike portions are substantially parallel to one another and are elongated in a direction which is substantially perpendicular to the longitudinally extending direction of said center portion when said holder is disposed in a substantially planar condition prior to the striplike portions being threaded through the respective opening means.

4. A holder according to claim 2, wherein each said pair of striplike fastening portions is formed by a single elongated strip of thin flexible sheet material which is disposed adjacent an end of said center portion and extends substantially transversely thereof, each said strip having a central part which overlaps a part of said center portion to form a socket and a pair of end parts which project outwardly in opposite directions beyond

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the opposite longitudinally extending edges of said center portion, and the opening means as formed in each corner of said center portion also extending through the central part of the respective strip.

5. A holder according to claim 4, wherein said center portion and each said strip are initially integrally formed from a single sheet of said thin flexible material, and said strips being folded over so that the central part thereof overlaps said center portion.

6. A holder according to claim 4, wherein said strips and said center portion are initially formed as separate pieces and are then fixedly united together.

7. A holder according to claim 4, wherein the center portion and each said strip are fixedly united together along at least a portion of the periphery surrounding each said opening means.

8. A holder according to claim 4, wherein each of said strips is substantially rectangular.

9. A holder according to claim 1, wherein each said opening means is formed by a flap which is cut or punched in the center portion, said flap being connected along an edge thereof to the remaining material and being capable of being bent outwardly away from the plane of the center portion.

10. A holder according to claim 1, wherein an end portion of thin flexible sheet material overlaps each end of said center portion and extends inwardly through a distance sufficient to overlap the opening means as formed adjacent the opposite corners of the respective end of said center portion, said end portion and said center portion being fixedly connected along their outer edges so as to define therebetween a pocket-like opening which opens inwardly towards the other end of said center portion, said pocket-like opening being disposed between the pair of opening means located adjacent the end of the center portion for accommodating therein the end of an absorbent pad.

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