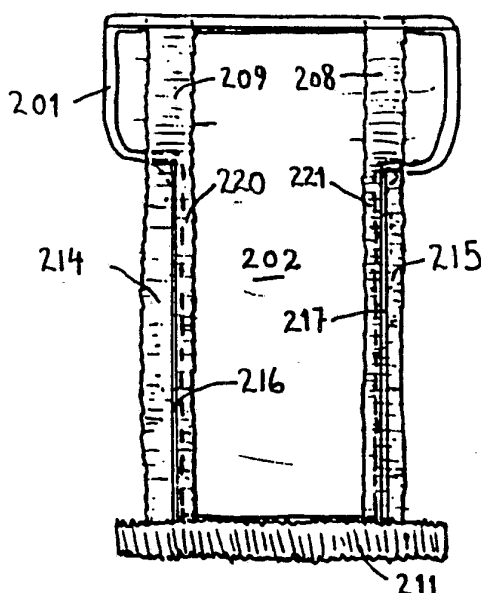




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<p>(21) International Application Number: PCT/SE92/00341 (22) International Filing Date: 21 May 1992 (21.05.92)</p> <p>(71) Applicant (for all designated States except US): MÖLN- LYCKE AB [SE/SE]; S-405 03 Göteborg (SE).</p> <p>(72) Inventors; and (75) Inventors/Applicants (for US only) : HEDLUND, Gunilla [SE/SE]; Musselvägen 5A, S-459 33 Ljungkile (SE). MAGNUSSON, Ing-Britt [SE/SE]; Oxelvägen 22, S-435 37 Mölnlycke (SE).</p> <p>(74) Agents: BERG, Sven, Anders et al.; H. Albihns Patentbyrå AB, Box 3137, S-103 62 Stockholm (SE).</p>	<p>(81) Designated States: AU, CA, FI, HU, JP, NO, US, Euro- pean patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, MC, NL, SE).</p> <p>Published <i>With international search report.</i> <i>In English translation (filed in Swedish).</i></p>	

(54) Title: CASING OR GARMENT FOR AN ABSORBENT PAD



(57) Abstract

The present invention relates to a supportive device which is intended to be used once or several times in supporting on its inner surface an absorbent pad (2) which is intended for one-time-use only, such that the supportive device (1) and the absorbent pad together form an absorbent article, such as a diaper or an incontinence guard. According to the invention, elastic devices (8, 9) are disposed on the inner surface of the supportive device, these devices being intended to extend over parts of an absorbent pad (2) coacting with the supportive device, such as to hold the pad firmly on the device.

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CASING OR GARMENT FOR AN ABSORBENT PAD

5 The present invention relates to a supportive device which can be used time after time to support on its inner surface a disposable absorbent pad intended for one-time-use only, such that the supportive device and the absorbent pad together form an absorbent article, such as a diaper or an incontinence guard.

10 The large majority of present-day diapers are so-called all-in-one diapers, which are used once and then discarded. Such diapers are easy to use, fit snugly around the wearer, function well and are comfortable to wear. An all-in-one diaper, however, is less suitable from the
15 aspect of waste-handling procedures, since the plastic pad supportive device and the absorbent pad form an integral unit which can only be divided up into its separate components with difficulty, for instance in a recovery system which is constructed for such separation.
20 tion.

The object of the present invention is to provide a supportive device on which an absorbent pad, or absorbent body, is supported so as together with said device
25 form an absorbent article, such as a diaper, which from the aspect of use is equally as beneficial as an all-in-one diaper.

This object is achieved with a supportive device of the
30 kind defined in the introduction which, in accordance with the invention, is characterized in that elastic elements are provided on the inner surface of the supportive device, and in that said elastic elements extend over parts of an absorbent pad coacting with the supportive device in a manner to hold the pad firmly on
35 said device. This will ensure that the absorbent pad is

held correctly positioned on the supportive device and will also enable the absorbent pad to be placed in position on the device more easily.

5 In accordance with one advantageous embodiment of the invention, the side edges of the inner surface of the supportive device are provided with leg elastication in the form of elastic bands which are extended to reach the front edge of the device so that in their extended
10 state the elastic bands will also stretch over part of the absorbent pad. According to an advantageous variant of this embodiment, the elastic bands also include transverse parts which extend over parts of the absorbent pad in a manner to hold the pad firmly to the
15 supportive device.

The invention will now be described in more detail with reference to the accompanying drawings, in which
20 Figure 1 is a top view of an absorbent article which includes an inventive supportive device, that side of the device which lies nearest the wearer's skin in use facing towards the viewer;

25 Figure 2 is a cross-sectional view of part of the crotch region of the article shown in Figure 1, when the article is worn;

30 Figure 3 is a perspective view of an absorbent article which includes a supportive device constructed in accordance with another embodiment of the invention;

35 Figures 4 and 5 are views similar to the view of Figure 1 and illustrate variants of the inventive supportive device in coaction with a T-shaped absorbent pad; and

Figures 6 and 7 are views similar to the view of Figure

1 and show variants of inventive supportive devices in
coaction with rectangular absorbent pads.

5 The absorbent article illustrated in the drawings is
comprised of a T-shaped supportive device 1 in which
there is inserted an absorbent pad 2, which is also T-
shaped. The device 1 can be used several times, whereas
the pad 2 is intended for one-time-use only. The device
10 1 is preferably made essentially of skin-friendly,
liquid-impermeable but air-permeable material and the
absorbent pad is preferably comprised of an absorbent
core 3 embraced by an insulating layer 4 of good liquid-
permeability. This combination of supportive device
15 material and absorbent pad material is suitable when the
absorbent pad is homogenous from a structural aspect, or
has a symmetrical structure in relation to a central
transverse plane, such as to render unimportant how the
absorbent pad is turned when inserting the same into the
20 supportive device. In other case, the insulating layer
or sheet 4 of the absorbent pad will then extend solely
on the upper side of the pad and the configuration of
said layer will differ markedly from the configuration
of the layer or sheet embracing the undersurface of the
absorbent pad. It will be understood that the choice of
25 material from which the supportive device 1 is made
depends to some extent on the construction of the absor-
bent pad 2. For instance, it is not necessary for the
supportive device material to be impervious to liquid
when the layer or sheet which embraces the underside of
30 the absorbent pad is impervious to liquid and extends
beyond the edges of the absorbent core. It will there-
fore be obvious that the invention is not restricted to
the aforesaid choice of supportive device material, and
that any appropriate supportive device material can be
35 used.

The front part 5 of the supportive device 1 also includes parts 6, 7 which are preferably, but not necessarily made of liquid-permeable material. As will be seen from Figure 1, these parts 6, 7 are arranged on top of the T-shaped layer from which the supportive device 1 is essentially constructed, in the side components of the T, and are secured along the outer edges of said components or parts, on the inside of the supportive device, i.e. on the side facing towards the viewer. The parts 6, 7 form together with said side parts of the T-shaped supportive device pockets which function to securely hold in position the T-shaped part of an absorbent pad 2 inserted into the supportive device. Elastic threads or bands 8, 9 are provided along the edges of the pocket openings.

Waist elastication 11 is provided along the edge of the rear supportive device part 10 in the form of an elastic band which extends beyond the side edges of the supportive device 1, so as to form elastic attachment tabs 12, 13 which are intended to be secured to the outer side of the front part of the device, so as to give the absorbent article a pants-like configuration when worn. The fastener tabs 12, 13 include conventional fastener means which enable the tabs to be released from and refastened onto the outer surface of the front part of the device. Examples of appropriate fastener means include burr-type fasteners (Velcro tape), press-studs and adhesive devices.

Broad elastic bands 14, 15 extend along the side edges of the supportive device 1, from the back part of the device, over the crotch part 22 and slightly in on the front part 5 thereof. The elastic bands 14, 15 are attached to respective side edges in a stretched state by means of respective narrow, longitudinally-extending

joins 16 and 17, said joins being welded seams or glue joins, for instance. The elastic bands 14, 15 may also be sewn to the supportive device 1. The elastic bands 14, 15 include respective transverse parts 18, 20 and 19, 21 which extend transversely on both sides of respective joins or seams 16 and 17. In the case of the described embodiment, the elastic bands 14, 15 and the waste elastic are comprised of elastic foamed material enclosed in a supportive device that is made of skin-friendly, heat meltable non-woven fabric. Those parts of the non-woven fabric which extend on opposite sides of the elastic band are joined together in punctiform manner through openings in the foamed material. It will be understood, however, that other elastic material, such as rubber, can be used instead of the elastic foam, and neither is it necessary to envelope the elastic band in supportive device material. However, that side of the elastic band which faces towards the wearer in use will preferably be coated or covered with a soft, skin-friendly material, unless the elastic band is manufactured from a material which possesses such properties.

Figure 2 is a schematic illustration which shows part of the crotch region of the diaper illustrated in Figure 1, when the diaper is worn. The contours of the thighs and crotch of the wearer are illustrated in broken lines. As shown in the Figure, the elastic band 15 lies tightly against the wearer's leg and adopts a generally vertical position. Because the elastic band 15 is relatively wide, the elasticity of the band may be chosen so that while the band tension around the leg is relatively slight, the proof of the article against leakage will not be jeopardized nevertheless. Thus, because the tension in the elastic band is restricted and the band has a relatively large width, there is very little risk of the band chafing the wearer's thighs or legs, even

though the band 15 should move relative to the wearer's legs as the wearer moves. Furthermore, because the supportive device is able to swing freely around the joints or seams 16, 17 in relation to the elastic bands 14, 15, the risk of such movement of the elastic bands as a result of leg movement is also reduced.

The provision of elastic band parts 18, 20 and 19, 21 which extend transversely to the longitudinally-extending joints also facilitates correct positioning of the absorbent article on the wearer. When the article illustrated in Figure 1 is placed in position on the wearer, the outer edges of the outer, transversely-extending parts 18, 19 of the elastic bands 14, 15 will come into contact with the wearer's legs first. The elastic bands are more rigid than the flexible supportive device material, and consequently the upward movement (when the wearer stands up) or the upward and forward movement (when the wearer lies down) to which the article is subjected in the crotch region thereof when putting on the article will cause the elastic bands to pivot about the joints until the two transversely-extending parts 18, 20 and 19, 21 come into abutment with the inside of the wearer's legs. This ensures that the article is brought to its correct position.

The end of respective elastic bands 14, 15 which terminates in the front supportive device part 5 is not connected at its respective inner transverse part 20 and 21 to the supportive device 1 and can therefore accompany unobstructed the upward pivotal movement of the respective bands around the joints 16 and 17 initiated when putting on the article. The elastic bands 14, 15 in the rear part of the supportive device, on the other hand, are fastened to the supportive device by the waist elastic 11 provided in the supportive device 1. Since

this point of attachment is relatively far removed from the crotch region, it will not counteract the upward pivotal movement of the elastic bands 14, 15 to any great extent. This attachment of the elastic bands 14, 15 to the rear supportive device part is advantageous because the elastic bands 14, 15 at the rear supportive device part will hold the rear part of the absorbent pad 2 securely against the supportive device, since upward swinging of the transverse parts 20, 21 is thereby prevented in this part of the supportive device.

Figure 3 illustrates another embodiment of an inventive supportive device, here referenced 101, which differs from the supportive device shown in Figures 1 and 2 in that the elastic bands 114, 115 forming the leg elastic-ation solely extend in towards one another transversely in relation to the joins 116, 117, and thus only on one side of respective joins. Those article components of the Figure 3 embodiment which correspond to similar article components of the Figure 1 embodiment have been identified with the same reference sign with the addition of one-hundred.

Similar to the supportive device 1 of the Figure 1 embodiment, the supportive device 101 of this embodiment is shown in coaction with an absorbent 102 inserted in said device. Distinct from the absorbent 2 of the Figure 1 embodiment, the absorbent pad 102 of this embodiment has a length which makes it necessary to extend the elastic bands 114, 115, and therewith the supportive device 101, in order to enable the pad 2 to be inserted fully into the supportive device. Subsequent to having inserted the absorbent pad, the elastic bands 114, 115 are allowed to contract, whereupon the composite article 101, 102 is deformed to the curved configuration shown schematically in Figure 3. As

indicated in Figure 3, contraction of the elastic bands 114, 115 results in lifting of those parts of the supportive device which lie laterally outside the absorbent pad 102 in the crotch region of the article. The elastic bands 114, 115 will also lift up and therewith form desirable liquid barriers. The elastic bands of this embodiment will also lie directly against the wearer's thighs, thereby preventing the occurrence of the supportive device pleating or wrinkling between the wearer's legs and the leg elastication.

According to one variant of this embodiment, the elastic bands 114, 115 are also attached to the supportive device 101 at their respective front edges, more specifically to the pockets 106, 107.

Figure 4 and 5 illustrate further embodiments of an inventive supportive device, wherein those elements of these embodiments which correspond to similar elements in the Figure 1 embodiment have been identified with the same reference signs as those used in Figure 1, with the addition of a two-hundred prefix and a three-hundred prefix respectively. The embodiments illustrated in Figures 4 and 5 differ from the embodiments illustrated in Figures 1-3 mainly in that the pockets 6, 7 and 106, 107 and their respective elastication 8, 9 and 108, 109 have been replaced with extended parts 208, 209 and 308, 309 of the leg elastication 214, 215 and 314, 315. As will be seen from Figures 4 and 5, the longitudinally-extending joins 216, 217 and 316, 317 of respective leg elastications are terminated by outwardly-extending parts.

The further embodiments of the inventive supportive device illustrated in Figures 6 and 7 differ from the earlier described embodiments mainly because they are

intended to coact with rectangular absorbent pads 402 and 502 respectively. As with the earlier Figures, those elements which correspond to similar elements in Figure 1 have been identified with the same reference signs prefixed with an even hundred, i.e. four-hundred and five-hundred respectively.

Shown in Figure 6 is a supportive device 401 which supports a rectangular absorbent pad 402. The front end of the pad 402 is inserted into a pocket 406 whose lateral extension is limited by joins 431, 432, such as weld seams or glue joins. An elastic thread 408 extends along the edge of the opening of pocket 406.

Waist elastic 411 is used at the lower edge to hold the rear end of the absorbent 401. Accordingly, the waist elastic is fastened to the supportive device 401 by means of a transverse join 430, and the space beneath the elastic band 411 is limited transversely by joins 433, 434.

In the case of the Figure 7 embodiment, the rectangular absorbent pad 502 is held totally by the longitudinally-extending leg elastics 514, 515, which are extended to reach the front edge of the supportive device 501.

By using elastic devices to hold an absorbent body firmly to the inventive supportive device, in the aforesaid manner, the pad will be held securely in place in the supportive device when the diaper or the incontinence guard according to any one of the embodiments shown in Figures 1, 2-7 is placed on a wearer. Furthermore, these elastic devices can be given a length which will enable them to be stretched from their relaxed state, or contracted state, to an extent such as to enable those parts of the absorbent pad which coact with

the elastic devices to be readily inserted between said devices and the supportive device without jeopardizing secure attachment of the absorbent pad when placing the pad in the supportive device. Furthermore, the manner
5 in which elastic devices are used in accordance with the invention means that said devices need only extend over a small part of the absorbent pad in order to hold the pad securely. This fact permits the advantageous use of the transverse parts of the leg elastic to securely hold
10 the absorbent pad.

Claims

1. A supportive device intended for use once or a
5 number of times to support on its inner surface an
absorbent pad (202; 302; 502) intended for one-time-use
only, such that the supportive device (202; 302; 502)
and the absorbent pad together form an absorbent arti-
cle, such as a diaper or an incontinence guard, in which
10 elastic devices (214, 215; 314, 315; 514, 515) are
disposed on the inner surface of the supportive device,
said devices being intended to extend over parts of an
absorbent pad (202) coacting with the supportive device
such as to hold the pad firmly on the supportive device,
15 c h a r a c t e r i z e d in that elastic bands (214,
215; 314, 315; 514, 515) are attached in a stretched
state to the inner surface of the supportive device
along the side edges of said supportive device at least
within the crotch region thereof, said elastic bands
20 extending from the rear edge of the supportive device to
its front edge; in that respective ends of the elastic
bands are fastened to the front and rear edges of the
supportive device; and in that the part of the elastic
bands located in the crotch region also form leg elasti-
25 cation.

2. A supportive device according to Claim 1,
c h a r a c t e r i z e d in that the part (208, 209;
308, 309) of the elastic bands which extends over the
30 front part of the supportive device is attached to the
inner surface of the supportive device solely at the
ends of said band part.

3. A supportive device according to Claim 1,
35 c h a r a c t e r i z e d in that the elastic bands
(514, 515) are attached in a stretched state to the

inner surface of the supportive device along the side edges thereof, said elastic bands extending from the rear edge of the supportive device to the front edge thereof and are attached to the inside surface of the supportive device by means of narrow, longitudinally-extending joins (516, 517) and include parts (520, 521) which extend transversely from respective joins in a direction towards the centre long axis of said device.

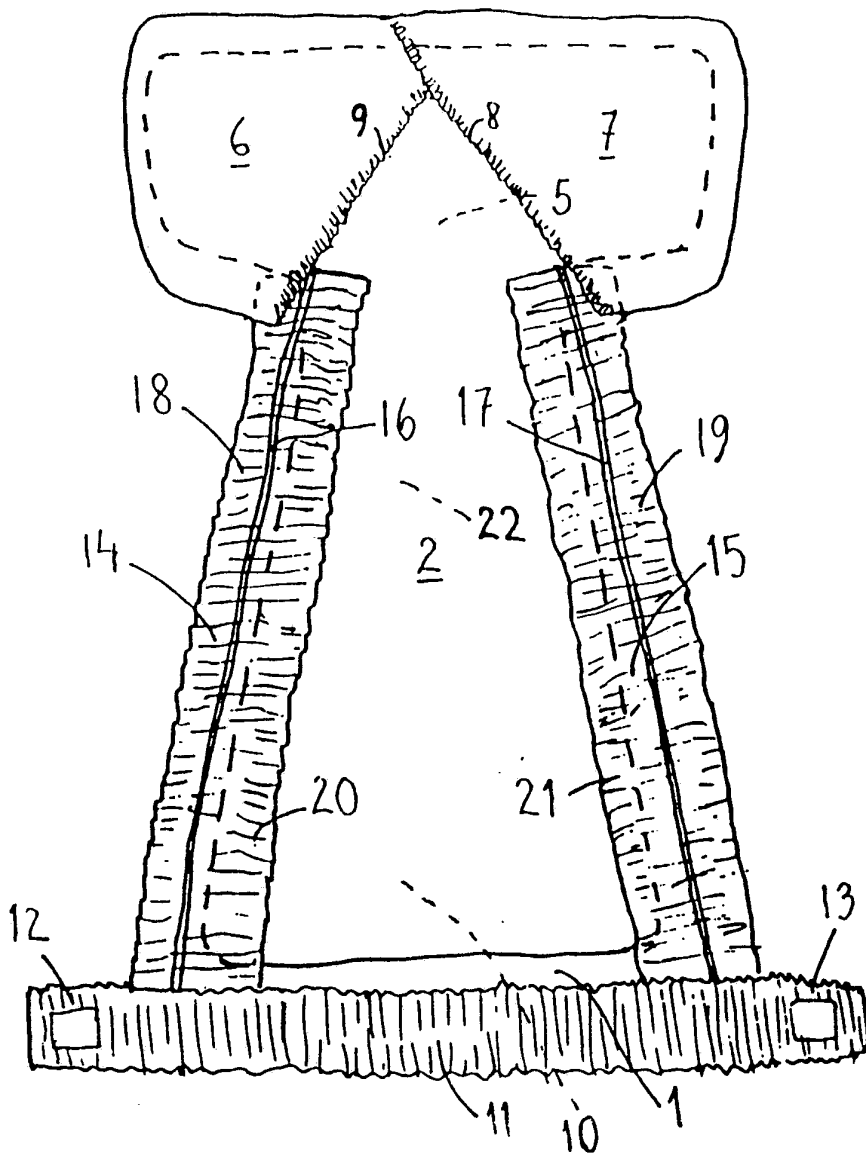


FIG. 1

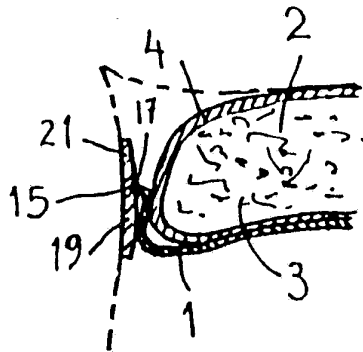


FIG. 2

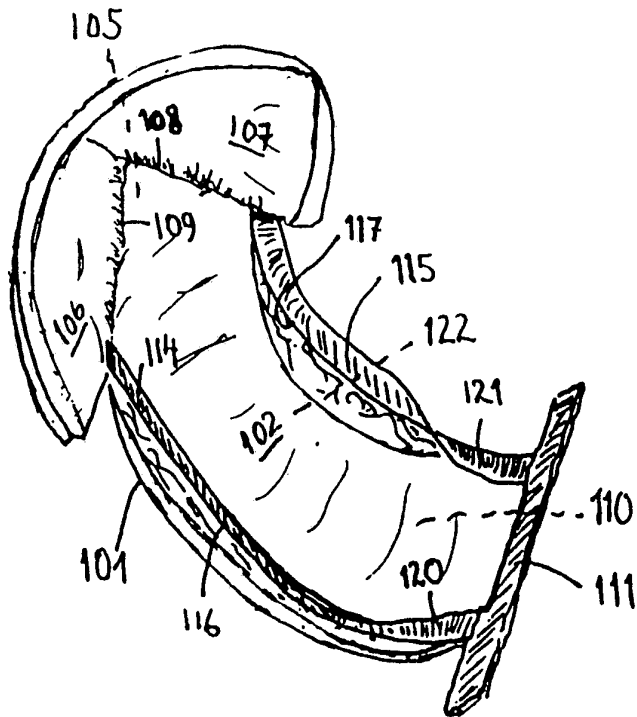


FIG. 3

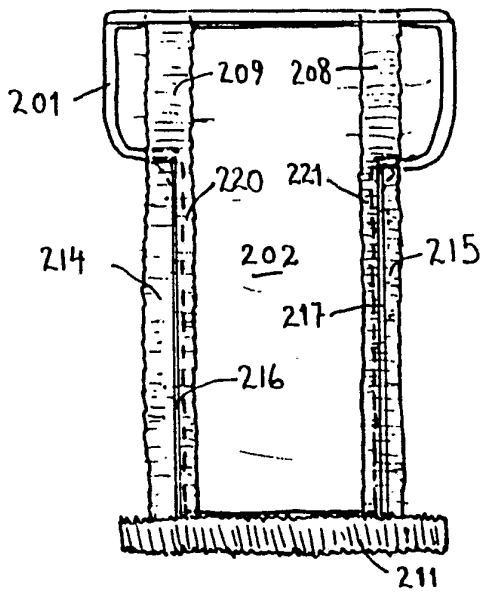


FIG. 4

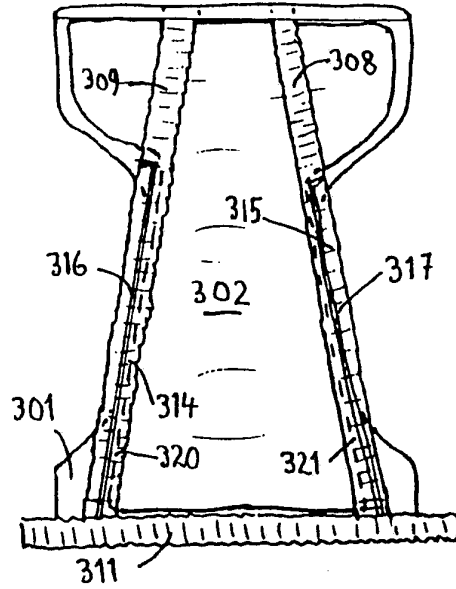


FIG. 5

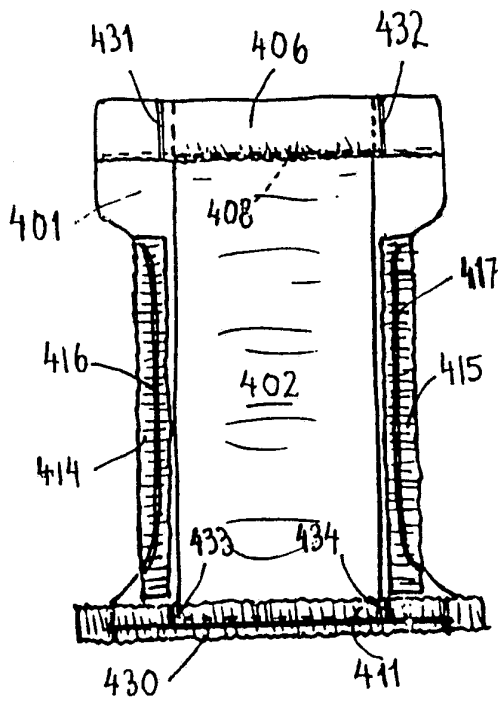


FIG. 6

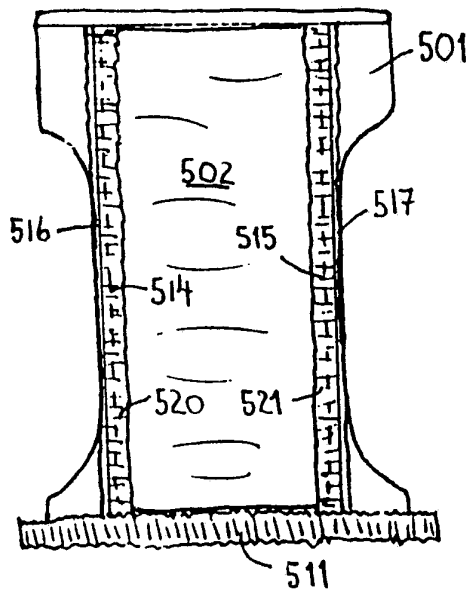


FIG. 7

INTERNATIONAL SEARCH REPORT

International Application No PCT/SE 92/00341

I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all) ⁶		
According to International Patent Classification (IPC) or to both National Classification and IPC		
IPC5: A 61 F 13/74		
II. FIELDS SEARCHED		
Minimum Documentation Searched ⁷		
Classification System	Classification Symbols	
IPC5	A 41 B; A 61 F	
Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in Fields Searched ⁸		
SE,DK,FI,NO classes as above		
III. DOCUMENTS CONSIDERED TO BE RELEVANT⁹		
Category *	Citation of Document, ¹¹ with indication, where appropriate, of the relevant passages ¹²	Relevant to Claim No. ¹³
Y	SE, B, 446055 (LANDSTINGENS INKÖPSCENTRAL LIC) 11 August 1986, see the whole document --	1-2
Y	EP, A2, 0374542 (PROCTER & GAMBLE LIMITED) 27 June 1990, sid 6, spalt 9, rad 58 - spalt 10, rad 3 --	1-2
A	SE, A, 182446 (S OHARA) 5 February 1963, see the whole document --	1-3
A	DE, A, 1104656 (REIMAR CASCORBI) 13 April 1961, see the whole document -- -----	1-3
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IV. CERTIFICATION		
Date of the Actual Completion of the International Search		Date of Mailing of this International Search Report
21st December 1992		30 -12- 1992
International Searching Authority		Signature of Authorized Officer
SWEDISH PATENT OFFICE		Ingrid Falk

**ANNEX TO THE INTERNATIONAL SEARCH REPORT
ON INTERNATIONAL PATENT APPLICATION NO.PCT/SE 92/00341**

This annex lists the patent family members relating to the patent documents cited in the above-mentioned international search report. The members are as contained in the Swedish Patent Office EDP file on **02/12/92**. The Swedish Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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		DE-A- 3378352	88-12-08
		EP-A-B- 0098512	84-01-18
		JP-B- 3057782	91-09-03
		JP-A- 59025741	84-02-09
		US-E- RE33106	89-11-07
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EP-A2- 0374542	90-06-27	AU-D- 4685789	90-06-28
		CA-A- 2004492	90-06-20
		JP-A- 3136654	91-06-11

SE-A- 182446	63-02-05	NONE	

DE-A- 1104656	61-04-13	NONE	