



(51) International Patent Classification:

A61F 13/495 (2006.01) A61F 13/514 (2006.01)
A61F 13/494 (2006.01)

(21) International Application Number:

PCT/SE2008/051472

(22) International Filing Date:

16 December 2008 (16.12.2008)

(25) Filing Language:

English

(26) Publication Language:

English

(71) Applicant (for all designated States except US): **SCA HYGIENE PRODUCTS AB** [SE/SE]; ., S-405 03 Göteborg (SE).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **KROOK, Fredrik** [SE/SE]; Schaktmästaregatan 7, S-412 61 Göteborg (SE).
ISACSON, Jonas [SE/SE]; Terrassgatan 15, S-411 33 Göteborg (SE).

(74) Agent: **VALEA AB**; Lindholmspiren 5, S-417 56 Göteborg (SE).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report (Art. 21(3))

(54) Title: ABSORBENT ARTICLE WITH IMPROVED WASTE CONTAINMENT

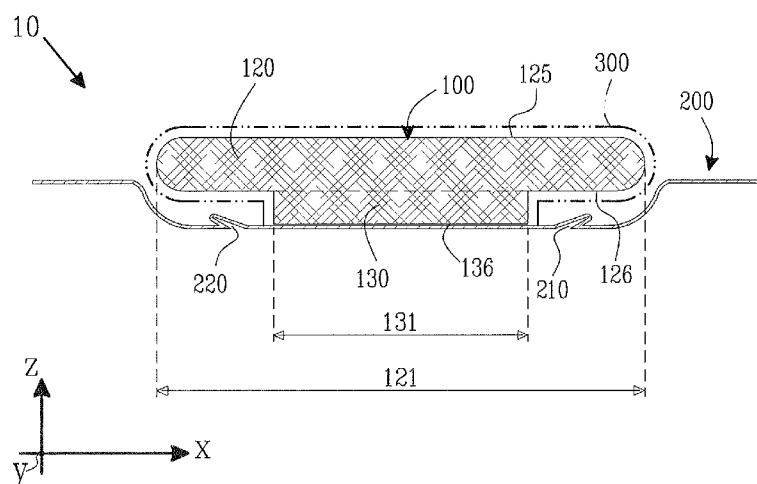


Fig. 2

(57) Abstract: An absorbent article is provided which comprises an absorbent core and a liquid-impermeable backsheet. The absorbent core has an upper absorbent portion and a lower absorbent portion. In at least a region A of the absorbent core, the lower absorbent portion has an extension in the transverse direction which is less than the extension of the upper absorbent portion in the transverse direction. The backsheet also comprises at least two pleats which are able to form pockets in the backsheet.

ABSORBENT ARTICLE WITH IMPROVED WASTE CONTAINMENT

TECHNICAL FIELD

The invention relates to an absorbent article suitable for collecting and retaining loose
5 faeces.

BACKGROUND OF THE INVENTION

Absorbent articles, particularly diapers, are commonly used for the absorption of bodily
exudate such as urine, faeces, blood and sweat. Efforts have been made in recent years
10 to improve the leakage-security of such articles.

Loose faeces are those which have a higher liquid content than the average human
faeces. Loose faeces can for example be produced by breastfed infants, or by individuals
with diarrhoea. Loose faeces can cause absorbent articles to leak, as such faeces are
15 often highly fluid and expelled rapidly from the human body. Leakage is especially a
problem around the leg region of absorbent articles.

Various constructions have been adopted to address the problem of leakage in absorbent
articles, particularly the leakage of loose faeces.

20

WO 98/27907 discloses a diaper with pleats for containment of liquid and solid waste.

JP 2007 222251 discloses an absorbent article having a central core member and
adjacent core pieces.

25

So-called "standing gathers" or "leg gaskets" which aim to form a seal about the leg region
of the wearer are *inter alia* described in WO 1996/24320.

Despite the advances in the field of absorbent articles, there remain problems with
30 leakage, particularly the leakage of loose faeces.

The present invention aims to address the problems of leakage from absorbent articles, particularly leakage of loose faeces. A further aim is to provide specialised storage and containment of loose faeces.

5 SUMMARY OF THE INVENTION

The invention provides an absorbent article, as shown in Figures 1-4. The absorbent article extends in the longitudinal (y) and transverse (x) directions and comprises an absorbent core and a liquid-impermeable backsheet. The absorbent core has an upper absorbent portion and a lower absorbent portion. The upper and lower absorbent portions
10 extend in the transverse (x) and longitudinal (y) directions.

In at least a region A of said absorbent core in the longitudinal direction – the lower absorbent portion has an extension in the transverse direction which is less than the extension of the upper absorbent portion in the transverse direction.

15

The absorbent core is attached to the liquid-impermeable backsheet substantially via the lower absorbent portion. At least in region A, the backsheet comprises at least two pleats aligned substantially in the longitudinal direction (y) of the absorbent article. At least two of said at least two pleats are located on either side of the lower absorbent portion in the
20 transverse direction (x), said at least two pleats being located under the upper absorbent portion in the transverse direction (x).

Suitably, the upper absorbent portion comprises substantially the same material as the lower absorbent portion. In said region A – the extension of the lower absorbent portion in
25 the transverse direction is less than 80%, preferably less than 70%, more preferably less than 60% of the extension of the upper absorbent portion in the transverse direction.

The upper absorbent portion of the absorbent core preferably has an upper surface, said upper surface being raised along the longitudinal axis of symmetry (Y) in at least said
30 region A.

The backsheet of the absorbent article according to the invention may comprise four pleats extending substantially in the longitudinal direction (y) of the absorbent article, wherein two pleats are located on each side of the lower absorbent portion in the
35 transverse direction (x) and wherein at least two of said pleats are located under the

upper absorbent portion of the absorbent core in the transverse direction (x). Suitably, all pleats in the backsheet are located under the upper absorbent portion of the absorbent core in the transverse direction (x).

- 5 The underside of the upper absorbent portion, the transverse side of the lower absorbent portion and the backsheet with at least one pleat therefore define a volume in which faeces can be received.

DEFINITIONS

- 10 In the following, the term "upper" is used to define those elements or components of the absorbent article which are located towards the wearer when the article is in use. The term "lower" is used to define those elements or components of the absorbent article which are located away from the wearer when the article is in use.
- 15 The term "under" has its usual meaning – when a component is said to lie "under" another component, it overlaps in the x-y plane of the article, and lies closer to the lower side of the absorbent article.

- A "pleat" in a given material is defined as a portion of said material which comprises a
- 20 double fold; i.e. first the material is folded one way, then another, in a Z-fold. The precise direction of folding is not relevant, and a pleat can face either direction (i.e. Z- or S-shaped).

BRIEF DESCRIPTION OF THE DRAWINGS

- 25 The invention will now be described in more detail, with reference to the enclosed schematic drawings, in which;

Figure 1 is a plan view of an absorbent article according to the invention, seen from the wearer-facing side, fully extended in the X-Y plane.

- 30 Figure 2 is a cross-section along the line II-II in Figure 1.

Figure 3 shows an alternative embodiment of the invention in cross-section.

Figure 4 shows an alternative form for the upper absorbent portion.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

Figure 1 shows an absorbent article 10 according to the invention. Although the absorbent article is illustrated as an open diaper, the invention is equally applicable for all types of absorbent articles intended for collection and storage of faeces, e.g. pant diapers
5 and incontinence guards for adults. The invention mainly refers to disposable absorbent articles, which means articles that are not intended to be laundered or otherwise restored or reused as an absorbent article after use.

The absorbent article 10 extends in the longitudinal (y) and transverse (x) directions, as
10 illustrated. The absorbent article 10 is symmetrical about a longitudinal axis which divides the absorbent article 10 into two equal halves.

The absorbent article 10 comprises an absorbent core 100, as shown in Figure 1. The absorbent core 100 can be of any conventional kind. Examples of commonly occurring
15 absorbent materials are cellulosic fluff pulp, tissue layers, highly absorbent polymers (so called superabsorbents), absorbent foam materials, absorbent nonwoven materials or the like. It is common to combine cellulosic fluff pulp with superabsorbents in an absorbent body. The thin absorbent bodies, which are common in for example baby diapers and incontinence guards, often comprise a compressed mixed or layered structure of
20 cellulosic fluff pulp and superabsorbent. The size and absorbent capacity of the absorbent core may be varied to be suited for different uses such as for infants or for incontinent adults.

The absorbent core 100 may have any overall shape in the x-y plane which is common to
25 absorbent cores in absorbent articles 10. For example, it may be rectangular or T-shaped, or have a shape which is more curved; e.g. hourglass-shaped, dogbone-shaped, or oval.

The absorbent article 10 also comprises a liquid-impermeable backsheet 200. The
30 backsheet 200 covers substantially the entire absorbent core 100. The backsheet 200 is of a liquid impervious material, such as a thin plastic film, e.g. a polyethylene or polypropylene film, a nonwoven material coated with a liquid impervious material, a hydrophobic nonwoven material, which resists liquid penetration or a laminate comprising plastic films and nonwoven materials. The backsheet 200 may be breathable so as to
35 allow vapour to escape from the absorbent core, while still preventing liquids from passing

therethrough. Examples of breathable outer cover materials are porous polymeric films, nonwoven laminates from spunbond and meltblown layers, laminates from porous polymeric films and nonwovens. The outer cover 200 may be elastic.

5 As illustrated in Figures 2, 3 and 4, the absorbent core 100 has an upper absorbent portion 120 and a lower absorbent portion 130. In that they are "*absorbent*", the upper and lower absorbent portions 120, 130 are able to absorb and contain liquid. As such, they may comprise any of the absorbent materials described above for the absorbent core 100. For increased flexibility in the variation in liquid handling, the upper 120 and lower
10 130 absorbent portions may be different. For example, an absorption gradient may be obtained between the upper and lower absorbent portions 120, 130 by e.g. introducing more superabsorbent material in one portion than the other portion. For ease of manufacture, the upper absorbent portion 120 may comprise substantially the same material as the lower absorbent portion 130. Indeed, the absorbent core 100 may be
15 unitary – i.e. formed in one piece – with the same material in upper 120 and lower 130 absorbent portions.

The upper and lower absorbent portions 120, 130 of the absorbent core 100 both extend in the transverse (x) and longitudinal (y) directions, and may independently have any
20 overall shape which is common to absorbent cores in absorbent articles 10. For example, they may be rectangular or T-shaped, or have a shape which is more curved; e.g. hourglass-shaped, dogbone-shaped, or oval. Upper and lower absorbent portions 120, 130 may have the same shape across their entire surface, or may be different. The upper 120 and lower 130 absorbent portions may have the same extension in the longitudinal
25 direction (y); i.e. the same length, alternatively, the lower absorbent portion 130 may be shorter than the upper absorbent portion 120 in the longitudinal direction (y). The upper absorbent portion 120 suitably has a length in the longitudinal direction (y) between 10 and 40cm, depending on the type of article. Suitably, the upper 120 and lower 130 absorbent portions are each symmetrical about a longitudinal axis of symmetry, and the
30 longitudinal axis of symmetry of the upper portion 120 is arranged so as to lie over the longitudinal axis of symmetry of the lower portion 130 in the absorbent core 100.

In at least a region A of the absorbent core 100 in the longitudinal direction – the lower absorbent portion 130 has an extension 131 in the transverse direction which is less than
35 the extension 121 of the upper absorbent portion 120 in the transverse direction. As

such, the absorbent core 100 is generally T-shaped in its cross-section, with a narrower stem (lower absorbent portion 130) and a broader top (upper absorbent portion 120) as shown in Figures 2 and 3.

5 In the particular embodiment of Figure 4, the upper absorbent portion 120 of the absorbent core 100 has an upper surface 125 which is raised along the longitudinal axis of symmetry (Y) in at least said region A. In this case, the absorbent core 100 is generally mushroom-shaped in its cross-section. This particular design of the upper absorbent portion 120 promotes the flow of loose faeces towards the transverse edges of the
10 absorbent core 100.

The lower absorbent portion 130 may have an extension 131 in the transverse direction (x) which is less than the extension 121 of the upper absorbent portion 120 in the transverse direction (x) along the entire length of said lower absorbent portion 130. In
15 other words, region A may extend along the entire length of the lower absorbent portion 130. Alternatively, the lower absorbent portion 130 may have an extension in the transverse direction (x) which is the same as, or greater than that of the upper absorbent portion 120 in a certain region, so that region A comprises only a portion of the absorbent core 100 in the longitudinal direction (y). Region A is suitably located at least in that
20 portion of the absorbent core 100 which receives faeces; e.g. the portion which is to the rear of a transverse center line of the absorbent article 10.

In the region A, the extension 131 of the lower absorbent portion 130 in the transverse direction is suitably less than 80%, preferably less than 70%, more preferably less than
25 60% of the extension 121 of the upper absorbent portion 120 in the transverse direction. This allows space for faeces to collect under the upper absorbent portion 120. However, a lower absorbent portion 130 which is too thin will not be stable. Therefore, in region A, the extension 131 of the lower absorbent portion 130 in the transverse direction is suitably more than 30%, preferably more than 40%, more preferably more than 50% of the
30 extension 121 of the upper absorbent portion 120 in the transverse direction. For a typical diaper, the upper absorbent portion 120 has an extension of between 3 and 10cm in the transverse direction, depending on the wearer upon which the diaper is to be applied.

The absorbent core 100 is attached to the liquid-impermeable backsheet 200 substantially via said lower absorbent portion 130. The absorbent core 100 is preferably attached to the liquid-impermeable backsheet 200 only via the lower absorbent portion 130, so that the liquid-impermeable backsheet 200 is not directly attached to the upper absorbent
5 portion 120. The liquid-impermeable backsheet 200 is preferably only attached to the lower face 136 of the lower absorbent portion 130.

At least in said region A, the backsheet 200 comprises at least two pleats 210, 220, 230, 240. The pleats 210, 220, 230, 240 take the form of double folds, i.e. a Z-fold as shown in
10 Figures 2, 3 and 4. The pleats 210, 220, 230, 240 are aligned substantially in the longitudinal direction (y) of the absorbent article 10. The backsheet 200 comprises an even number of pleats, i.e. 2, 4 or even 6, while 2 or 4 pleats are preferred. Figure 2 shows an embodiment having 2 pleats, while Figure 3 shows an embodiment having 4 pleats. The pleats may extend substantially the entire length of the absorbent core 100 in
15 the longitudinal direction, and even substantially the entire length of the backsheet 200 in the longitudinal direction.

The backsheet 200 comprises at least two pleats 210, 220 located on either side of the lower absorbent portion 130 in the transverse direction (x), as shown in Figures 2, 3 and
20 4. These at least two pleats 210, 220 are also located under the upper absorbent portion 120 in the transverse direction (x). The location and arrangement of these pleats 210, 220 allows the formation of "pockets" under the upper absorbent core 120. As such, the underside of the upper absorbent portion 120, the transverse side of the lower absorbent portion 130 and the backsheet 200 with at least one pleat 210, 220 define a volume in
25 which faeces can be received. Due to the relative dimensions of the upper and lower absorbent portions 120, 130, the "pockets" can have a larger capacity than other articles with faeces pockets.

Faeces received into the pockets can also be absorbed into the absorbent core 100 via
30 the lower absorbent portion 130 and the underside of the upper absorbent portion 120, thus increasing the area of the absorbent core 100 which is used. As the pleats 210, 220 extend in the longitudinal direction (y) of the article, bodily exudates can also flow along the pockets formed by said pleats 210, 220, which again improves uptake into portions of the absorbent core 100 which otherwise might not be used.

In the embodiment of Figure 3, the backsheet 200 comprises four pleats 210, 220, 230, 240. As for the other embodiments, the pleats 210, 220, 230, 240 extend substantially in the longitudinal direction (y) of the absorbent article 10. Two pleats 210, 220, 230, 240 are located on each side of the lower absorbent portion 130 in the transverse direction (x).

5

At least two of the pleats 210, 220 are located under the upper absorbent portion 120 of the absorbent core 100 in the transverse direction (x). The other two of said pleats 230, 240 may be located outward of the upper absorbent portion 120 of the absorbent core 100 in the transverse direction. Otherwise, all pleats 210, 220, 230, 240 in the backsheet 200
10 may be located under the upper absorbent portion 120 of the absorbent core 100 in the transverse direction (x).

The present invention goes somewhat against traditional thinking in the field of diaper technology – that all bodily exudate should be contained within the boundaries of an
15 absorbent core, and that as much exudate as possible should be absorbed upon the upper surface of the absorbent core. Instead, the present invention does not require that faeces are absorbed by the upper surface of the absorbent core, but are instead allowed to run off the edges thereof, and be collected in the pockets in the backsheet. In this way, extra space is provided for faeces collection, and faeces and urine can be collected and
20 stored separately within the absorbent article 10.

The present invention also increases the amount of the absorbent core 100 which can be used. In particular, faeces which are present in the pockets under the upper portion 120 can be absorbed by the underside of the upper portion 120 and the transverse side of the
25 lower portion 130.

The upper portion 120 of the absorbent core 100 has upper 125 and lower 126 surfaces, as can be seen in Figures 2-4. The lower portion 130 of the absorbent core 100 has a lower surface 136. Suitably, the upper 125 and lower 126 surfaces of the upper 120
30 portions are substantially flat, and parallel to the x-y plane. Likewise, the lower surface 136 of the lower portion 130 is suitably substantially flat and parallel to the x-y plane. However, the upper surface 125 of the upper portion 120 may be raised along the longitudinal axis of symmetry (Y) in at least said region A, as shown in Figure 3. In other words, the upper portion 120 of the absorbent core 100 is higher in its middle section than

at the edges. This configuration promotes the flow of faeces off the upper surface 125 of the upper portion 120.

The absorbent article 10 may also comprise a liquid-pervious topsheet 300. The topsheet
5 300 of the article 10 is the layer which lies in contact with the wearer's body when the article is in use. As such, it should be soft, non-irritating and comfortable against the skin, and bodily fluid should be able to pass through it without hindrance. The topsheet 300 can consist of a nonwoven material, e.g. spunbond, meltblown, carded, hydroentangled, wetlaid etc. Suitable nonwoven materials can be composed of natural fibers, such as
10 woodpulp or cotton fibres, manmade fibres, such as polyester, polyethylene, polypropylene, viscose etc. or from a mixture of natural and manmade fibres. The topsheet may further be composed of tow fibres, which may be bonded to each other in a bonding pattern, as e.g. disclosed in EP-A-1 035 818. Further examples of materials suitable for topsheets are porous foams, apertured plastic films etc. The topsheet 300
15 may be different in different parts of the absorbent article 10.

The topsheet 300 may be arranged in a manner such that it does not interfere with the function of the absorbent core 100 and the pleats 210, 220, 230, 240. As such, it can be wrapped about the absorbent core 100. Alternatively, the topsheet 300 may be laminated
20 to the backsheet 200 in portions thereof, so that the topsheet 300 also includes pleats 210, 220, 230, 240.

The absorbent article 10 may comprise one or more layers which may be selected to improve the handling of bodily waste. Such layers are designed to receive a large amount
25 of liquid in a short space of time and distribute it evenly across the absorbent core 100: They may include so-called transfer, distribution, surge or acquisition layers, and are usually located above the absorbent core 100.

The invention has been described in relation to a number of embodiments in the above
30 text and the enclosed figures. However, the invention should not be considered as being limited by these embodiments. Instead, features from different embodiments can be combined by the skilled person, while remaining within the scope of the invention. The scope of the invention should be determined by the scope of the enclosed claims.

CLAIMS

1. An absorbent article (10), said absorbent article extending in the longitudinal (y) and transverse (x) directions and comprising an absorbent core (100) and a liquid-impermeable backsheet (200),
5 said absorbent core (100) having an upper absorbent portion (120) and a lower absorbent portion (130);
said upper (120) and said lower (130) absorbent portions extending in said transverse (x) and longitudinal (y) directions;
wherein – in at least a region A of said absorbent core (100) in the longitudinal
10 direction – the lower absorbent portion (130) has an extension (131) in the transverse direction which is less than the extension (121) of the upper absorbent portion (120) in the transverse direction;
and wherein the absorbent core (100) is attached to the liquid-impermeable backsheet (200) substantially via said lower absorbent portion (130)
15 *characterised in that*,
at least in said region A, the backsheet (200) comprises at least two pleats (210, 220, 230, 240) aligned substantially in the longitudinal direction (y) of the absorbent article (10)
wherein at least two of said at least two pleats (210, 220) are located on either
20 side of the lower absorbent portion (130) in the transverse direction (x)
and wherein said at least two pleats (210, 220) are located under the upper absorbent portion (120) in the transverse direction (x).
2. An absorbent article (10) according to claim 1, wherein said upper absorbent
25 portion (120) comprises substantially the same material as said lower absorbent portion (130).
3. An absorbent article (10) according to any of the previous claims, wherein – in said
30 region A – the extension (131) of the lower absorbent portion (130) in the transverse direction is less than 80%, preferably less than 70%, more preferably less than 60% of the extension (121) of the upper absorbent portion (120) in the transverse direction.
4. An absorbent article (10) according to any of the previous claims, wherein the
35 upper absorbent portion (120) of the absorbent core (100) has an upper surface

(125), said upper surface (125) being raised along the longitudinal axis of symmetry (Y) in at least said region A.

- 5 5. An absorbent article (10) according to any of the previous claims, wherein the
backsheet (200) comprises four pleats (210, 220, 230, 240) extending
substantially in the longitudinal direction (y) of the absorbent article (10)
wherein two pleats (210, 220, 230, 240) are located on each side of the lower
absorbent portion (130) in the transverse direction (x)
and wherein at least two of said pleats (210, 220) are located under the upper
10 absorbent portion (120) of the absorbent core (100) in the transverse direction (x).
- 15 6. An absorbent article (10) according to any of the previous claims, wherein all
pleats (210, 220, 230, 240) in the backsheet (200) are located under the upper
absorbent portion (120) of the absorbent core (100) in the transverse direction (x).
- 20 7. An absorbent article (10) according to any of the previous claims, wherein the
underside of the upper absorbent portion (120), the transverse side of the lower
absorbent portion (130) and the backsheet (200) with at least one pleat (210, 220),
define a volume in which faeces can be received.

20

25

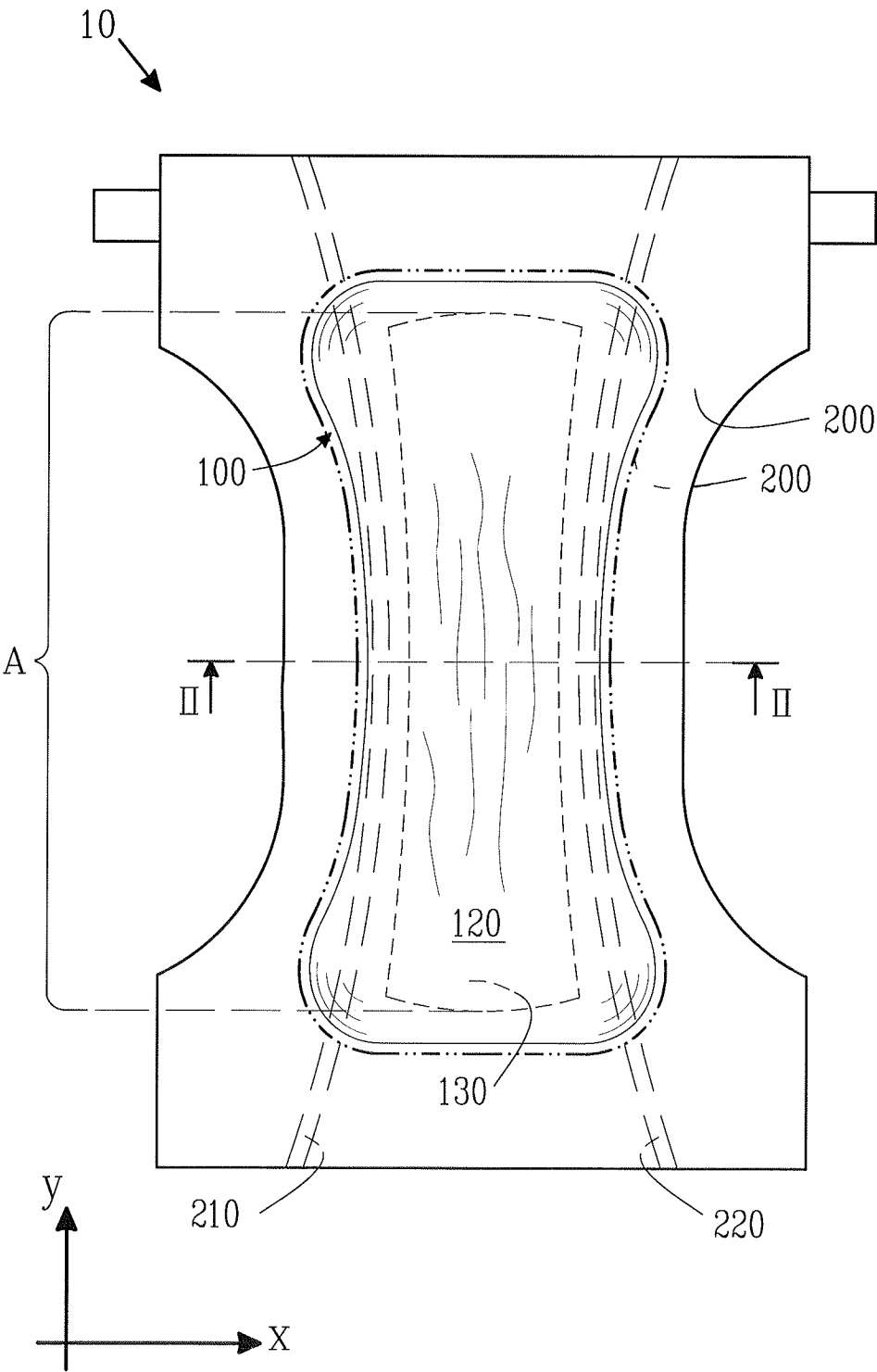


Fig. 1

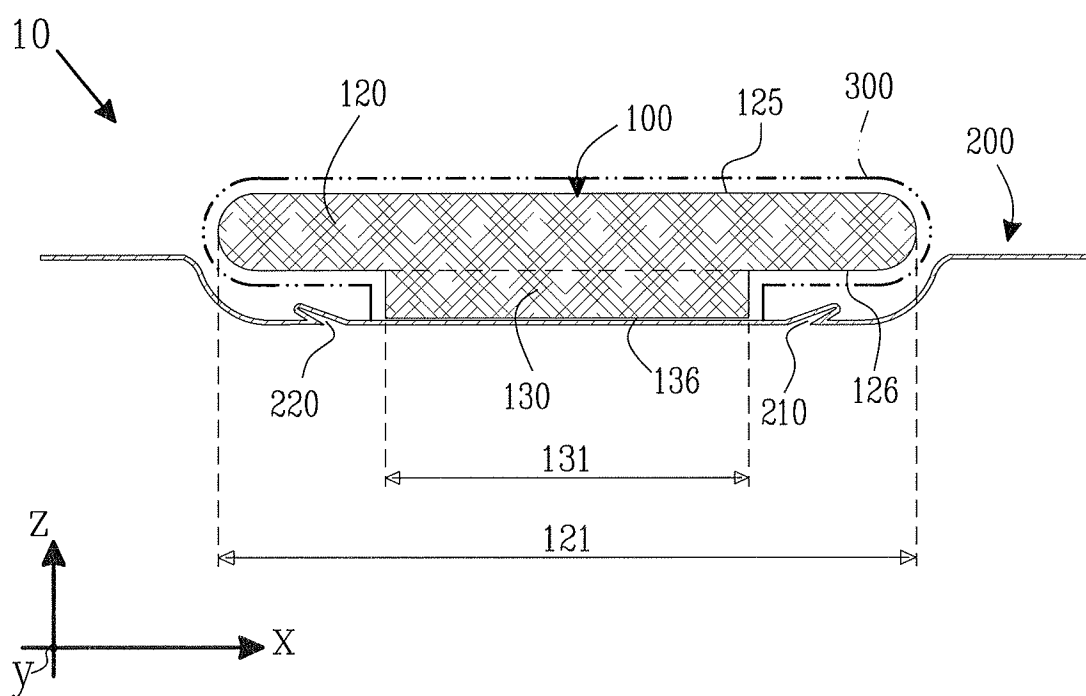


Fig. 2

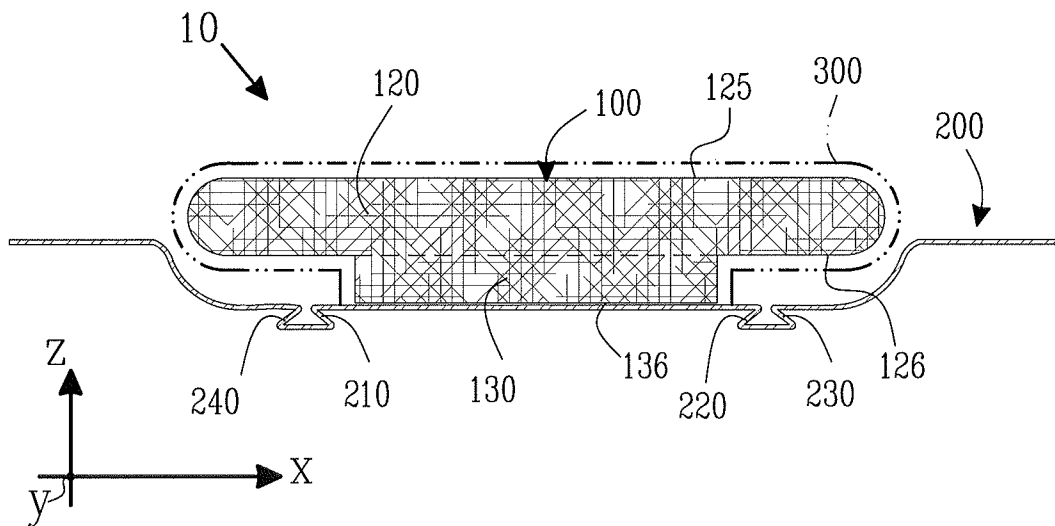


Fig. 3

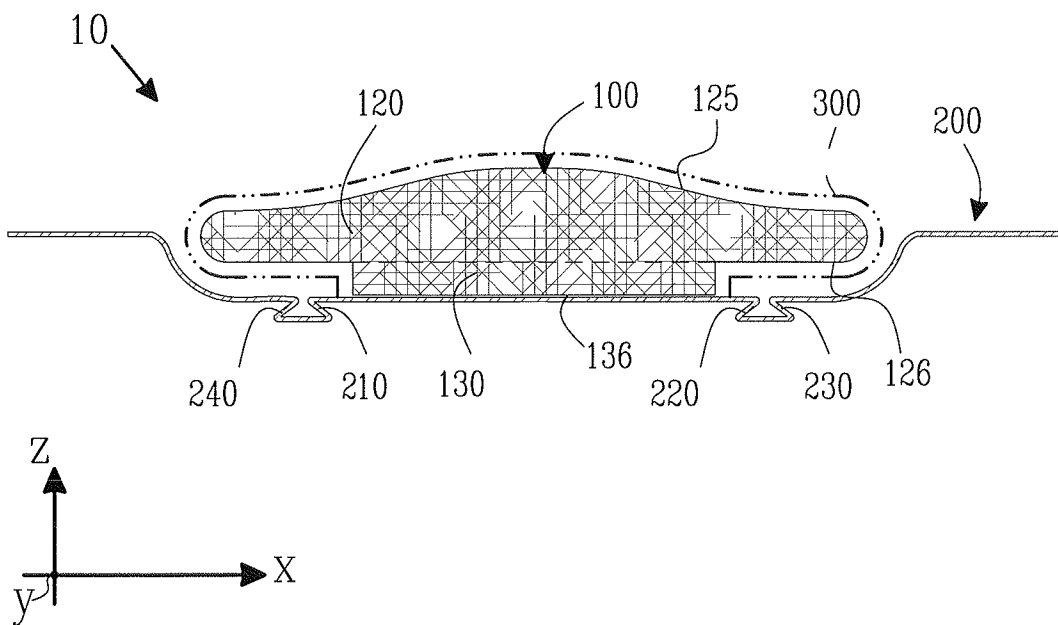


Fig. 4

INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE2008/051472

A. CLASSIFICATION OF SUBJECT MATTER

IPC: see extra sheet

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC: A61F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-INTERNAL, WPI DATA, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 0013640 A1 (SCA HYGIENE PRODUCTS AB), 16 March 2000 (16.03.2000), page 4, line 28 - page 5, line 16; page 12, line 8 - line 21; page 16, line 22 - page 17, line 11, figures 2,5,14, claims 1-27, abstract --	1-7
A	US 4775375 A (E.C.A. ALEDO), 4 October 1988 (04.10.1988), figure 3, abstract --	1-7
A	JP 2007222251 A, KAO CORP, 2007-09-06:(abstract) Retrieved from: PAJ database --	1-7

☒ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier application or patent but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

11 August 2009

Date of mailing of the international search report

13-08-2009

Name and mailing address of the ISA/
Swedish Patent Office
Box 5055, S-102 42 STOCKHOLM
Facsimile No. +46 8 666 02 86

Authorized officer

David Shanks / MRo
Telephone No. +46 8 782 25 00

INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE2008/051472

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4950262 A (K. TAKAGI), 21 August 1990 (21.08.1990), column 3, line 7 - line 11; column 5, line 29 - line 38, abstract --	1-7
A	US 6264641 B1 (P.T. VAN GOMPEL ET AL), 24 July 2001 (24.07.2001), figure 5b, claims 9-11 --	1-7
A	US 5527303 A (J.T. MILBY, JR. ET AL), 18 June 1996 (18.06.1996), column 2, line 22 - line 27; column 3, line 61 - line 67, figures 2,3, abstract --	1-7
A	WO 9846183 A1 (SCA MÖLNLYCKE AB), 22 October 1998 (22.10.1998), figures 2,4,8 --	1-7
A	EP 0226789 A2 (VEREINIGTE PAPIERWERKE AG), 1 July 1987 (01.07.1987), figure 2 --	1-7
A	GB 2182841 A (THE PROCTER & GAMBLE COMPANY), 28 May 1987 (28.05.1987), abstract --	1-7
A	WO 9827907 A1 (KIMBERLY-CLARK WORLDWIDE, INC.), 2 July 1998 (02.07.1998), abstract -- -----	1-7

International patent classification (IPC)**A61F 13/495** (2006.01)**A61F 13/494** (2006.01)**A61F 13/514** (2006.01)**Download your patent documents at www.prv.se**

The cited patent documents can be downloaded:

- From "Cited documents" found under our online services at www.prv.se (English version)
- From "Anförda dokument" found under "e-tjänster" at www.prv.se (Swedish version)

Use the application number as username. The password is **PYFKICUPWA**.

Paper copies can be ordered at a cost of 50 SEK per copy from PRV InterPat (telephone number 08-782 28 85).

Cited literature, if any, will be enclosed in paper form.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/SE2008/051472

WO	0013640	A1	16/03/2000	AT	280559	T	15/11/2004
				AU	5889599	A	27/03/2000
				DE	69921500	D,T	17/03/2005
				EP	1117361	A,B	27/10/2004
				SE	1117361	T3	
				JP	2002524148	T	06/08/2002
				SE	517838	C	23/07/2002
				SE	9802985	A,L	05/03/2000
				US	6652499	B	25/11/2003
US	4775375	A	04/10/1988	AR	245885	A	30/03/1994
				BR	8506247	A	30/06/1987
				CA	1292595	C	03/12/1991
				PT	83905	A,B	12/05/1989
US	4950262	A	21/08/1990	NONE			
US	6264641	B1	24/07/2001	NONE			
US	5527303	A	18/06/1996	AU	4755096	A	07/08/1996
				CA	2210203	A,C	17/04/2001
				DE	69602823	D,T	14/10/1999
				EP	0804132	A,B	09/06/1999
				SE	0804132	T3	
				HK	1004107	A	16/06/2000
				JP	10512475	T	02/12/1998
				MX	9705441	A	28/06/1998
				WO	9622064	A	25/07/1996
WO	9846183	A1	22/10/1998	AU	7089798	A	11/11/1998
				SE	512820	C	22/05/2000
				SE	9701381	A,L	16/10/1998
				ZA	9803122	A	20/10/1998
EP	0226789	A2	01/07/1987	DE	3544816	A	19/06/1987
GB	2182841	A	28/05/1987	US	4681579	A	21/07/1987
WO	9827907	A1	02/07/1998	AU	732902	B	03/05/2001
				AU	5698298	A	17/07/1998
				BR	9715016	A	18/09/2001
				CA	2274548	A	02/07/1998
				DE	69725890	D,T	03/04/2008
				EP	0957872	A,B	24/10/2007
				ES	2208969	T	16/06/2004
				JP	2002515796	T	28/05/2002