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Señora Jefe de la

DIVISION DE NUEVAS CREACIONES

Superintendencia de Industria y Comercio

E. S. D.

MINISTERIO DE INDUSTRIA Y COMERCIO



Trámite : 011

Evento : 379

Actuación : 538

Referencia : Expediente No. 07.077.026
Asunto : Solicitud de patente para: **ARTÍCULO ABSORBENTE QUE TIENE PROPIEDADES MEJORADAS PARA MANEJAR MATERIAS FECALES DE BAJA VISCOSIDAD**
Solicitante : **SCA HYGIENE PRODUCTS AB**
Publicada en : Gaceta No. 581 del 31 de octubre de 2007
Fecha solicitud : 27 de julio de 2007

1. Yo, Emilio FERRERO, identificado como aparece al pie de mi firma, actuando como apoderado en el asunto de la referencia, atentamente, solicito se efectúe el examen de patentabilidad de la solicitud en referencia presentada de acuerdo con el Capítulo II del PCT y según lo establecido en el artículo 44 de la Decisión 486 de la Comisión de la Comunidad Andina. Para tal efecto presento junto con este escrito el recibo por valor de \$210.000.00, que corresponde a la tasa fijada según lo dispuesto en la Resolución No. 44372 del 26 de diciembre de 2007.

2. Ruego atentamente a la Señora Jefe se sirva ordenar que se anexe este recibo para que se efectúe dicho examen y se continúe con el trámite de la solicitud.

Señora Jefe,

EMILIO FERRERO

T.P.A. No. 31.929

COLO-11256-841-127-9
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C/ No. M-2008-124799/JGG

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

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***** CONSIGNACION *****

DEPOSITANTE	TIPO PAGO	BANCO	CUENTA	No. PAGO	FECHA PGO	Vr. PAGO
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***** CONCEPTO *****

CANT.	RENTISTICO	CONCEPTO	TOTAL CONCEPTO
1	50005-01-01 SOLICITUDES	114 PTC CAP-II EXAMEN DE PATENTIBILIDAD	210,000.00
TOTAL :			\$ 210,000.00

SON: DOSCIENTOS DIEZ MIL PESOS

RESPONSABLE : _____

RECIBO DE CAJA APLICADO AL EXPEDIENTE No. _____

Colo 11256-841-127-9

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DIVISIÓN DE NUEVAS CREACIONES

RADICACIÓN EXPEDIENTE No. 07-77026

EL EXTRACTO DE LA PRESENTE SOLICITUD DE **PATENTE DE INVENCION**

FUE PUBLICADO EN LA GACETA DE PROPIEDAD INDUSTRIAL No **581** DE

FECHA **31 DE OCTUBRE DE 2007** EL TÉRMINO HÁBIL SEÑALADO POR LA

LEY EXPIRA EL **31 DE ENERO DE 2008**

NOTA: Dentro del plazo de los seis (6) meses siguientes a partir de la fecha de publicación en la gaceta de Propiedad Industrial, deberá solicitar y cancelar el examen de patentabilidad so pena de que la solicitud caiga en abandono, de acuerdo con lo establecido en el Artículo 44 de la Decisión 486/2000.

SE PRESENTARON OPOSICIONES POR PARTE DE TERCEROS.

SI _____

NO X



US006409715B1

(12) **United States Patent**
Tanji

(10) **Patent No.:** **US 6,409,715 B1**
(45) **Date of Patent:** **Jun. 25, 2002**

U.S. Patent

Jun. 25, 2002

Sheet 1 of 7

US 6,409,715 B1

(54) **DISPOSABLE ABSORBENT ARTICLE**

(75) **Inventor:** **Hiroyuki Tanji, Kagawa-ken (JP)**

(73) **Assignee:** **Uni-Charm Corporation, Ehime-ken (JP)**

(*) **Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 17 days.

(21) **Appl. No.:** **09/589,079**

(22) **Filed:** **Jun. 8, 2000**

(30) **Foreign Application Priority Data**

Jun. 9, 1999 (JP) 11-163025

(51) **Int. Cl. 7** **A61F 13/15**

(52) **U.S. Cl.** **604/385.19; 604/385.01; 604/385.16; 604/385.201**

(58) **Field of Search** **604/385.01, 385.101, 604/385.03, 385.04, 385.06, 385.07, 385.12, 385.22, 385.23, 385.19, 385.16, 385.201**

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(57) **ABSTRACT**

A disposable absorbent article including a liquid-permeable topsheet, which is provided at a desired location of upper and lower surfaces with a stretchable region adapted to be stretchable up- and downward with respect to the upper and lower surface, the region being formed by a plurality of pleats.

10 Claims, 7 Drawing Sheets

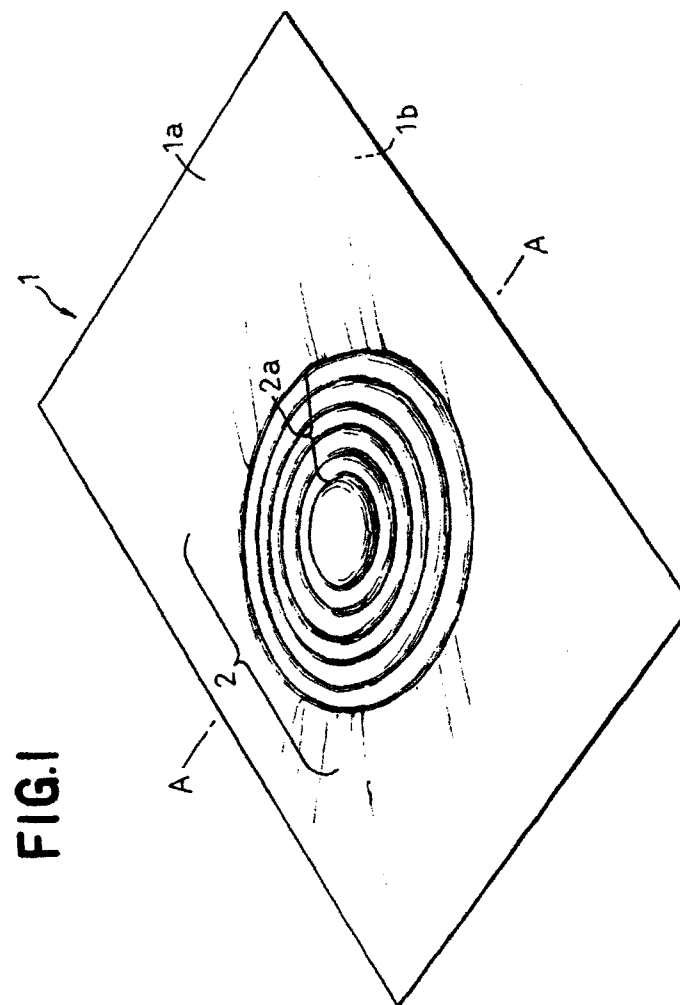
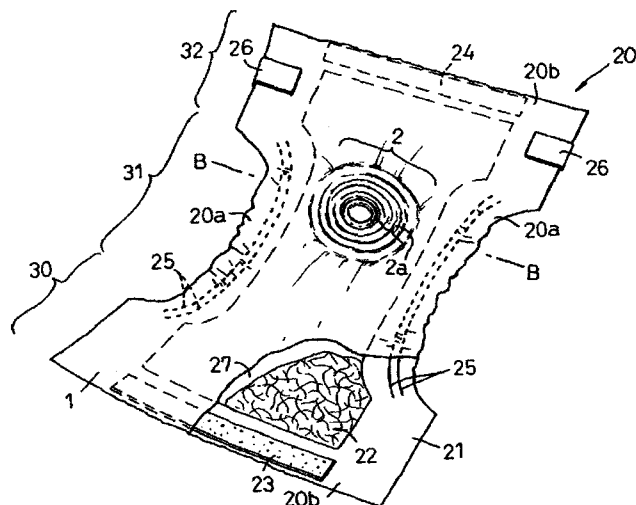


FIG. 1

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DISPOSABLE ABSORBENT ARTICLE

BACKGROUND OF THE INVENTION

This invention relates to disposable absorbent articles such as disposable diapers or menstruation pads.

As a liquid-pervious sheet conventionally used in body fluids absorbent articles, it is well known to use a nonwoven fabric or porous plastic film partially formed with a plurality of crests and troughs alternately arranged in one direction to shape stretchable bellows or a composite sheet comprising a nonwoven fabric and elastic members secured under tension to the nonwoven fabric to make the composite sheet elastic.

The region of the sheet shaped in bellows has an elasticity in one direction or in the opposite direction depending on the direction in which the region shaped in bellows is depressed. However, it is impossible for such sheet to be stretched in all directions, i.e., a stretchable concave or convex different from the groove can not be formed in a desired region of the sheet.

The composite sheet comprising the nonwoven fabric and the elastic members secured under tension to the nonwoven fabric inevitably generates a plurality of fine gathers which may give the wearer a feeling of discomfort as the gathers come in contact with the wearer's skin.

SUMMARY OF THE INVENTION

It is an object of this invention to provide disposable absorbent articles including a liquid-pervious topsheet having an elastically stretchable region adapted to form a concave or convex in a predetermined zone without giving the wearer a feeling of discomfort.

According to this invention, there is provided a disposable absorbent article comprising: a liquid-permeable topsheet; a liquid-impermeable backsheet; a liquid-absorbent core disposed therebetween; and the topsheet being provided at a predetermined location on upper and lower surface thereof with a stretchable region adapted to be stretchable up- and downward with respect to the upper and lower surfaces, the stretchable region being formed by a plurality of pleats undulating from a peripheral edge toward a central zone of the stretchable region.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view showing a liquid-pervious topsheet provided in accordance with one embodiment of this invention;

FIG. 2 is a sectional view taken along line A—A in FIG. 1;

FIG. 3 is a view similar to FIG. 1 but showing another embodiment of the liquid-pervious topsheet;

FIG. 4 is a perspective view showing a disposable diaper using the sheet of FIG. 1 as partially broken away;

FIG. 5 is a sectional view taken along line B—B in FIG. 4;

FIG. 6 is a view similar to FIG. 4 but showing another embodiment of the disposable diaper as partially broken away; and

FIG. 7 is a sectional view taken along a line C—C in FIG. 6.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

FIG. 1 is a perspective view showing a liquid-pervious topsheet 1 provided in accordance with one embodiment of

this invention and FIG. 2 is a sectional view taken along line A—A in FIG. 1. Referring to FIG. 2, imaginary lines indicate a stretchable region 2 of the topsheet 1 as being stretched up- and downward. The topsheet 1 is flexible and made of a liquid-pervious nonwoven fabric formed by thermoplastic synthetic resin fiber. The topsheet 1 has upper and lower surfaces 1a, 1b and is formed in the vicinity of its central location with the stretchable region 2 adapted to be stretchable or deformable up- and downward with respect to the upper and lower surfaces 1a, 1b. The stretchable region 2 comprises a plurality of circular pleats 2a undulating from a peripheral edge of the stretchable region 2 toward a center of the stretchable region 2. In the stretchable region 2, the plurality of circular pleats 2a are coaxially arranged with their circumferences progressively reduced toward the center of the stretchable region 2.

The topsheet 1 is stretchable or deformable up- and downward with respect to the upper and lower surfaces 1a, 1b as indicated by a double-headed arrow X—X so as to form the topsheet 1 with a concave or a convex as the pleats 2a are stretched or deformed.

FIG. 3 is a view similar to FIG. 1 but showing another embodiment of the liquid-pervious topsheet 1. The topsheet 1 according to this embodiment is similar to the topsheet 1 of FIG. 1 in that this topsheet 1 also is made of a liquid-pervious nonwoven fabric formed by thermoplastic synthetic resin fiber and has the stretchable region 2 adapted to be stretchable or deformable up- and downward with respect to the upper and lower surfaces 1a, 1b. As will be apparent from FIG. 3, the topsheet 1 according to this embodiment differs from the topsheet 1 of FIG. 1 in that the stretchable region 2 is formed by a spiral pleat 2a so as to undulate from the peripheral edge of the stretchable region 2 toward the center of the stretchable region 2.

In the case of the topsheet 1 shown by FIGS. 1 and 3, it is possible to form the upper and lower surfaces 1a, 1b with the stretchable region 2 in a location other than the central location or even to form the upper and lower surfaces 1a, 1b with a plurality of such stretchable regions 2.

The topsheet 1 is made of a hydrophobic nonwoven fabric treated to become hydrophilic or a hydrophilic nonwoven fabric formed by hydrophilizing agent rubbed in fiber. It is also possible to use a porous thermoplastic synthetic resin film in the place of such a nonwoven fabric to form the topsheet 1. The nonwoven fabric is preferably selected from a group including an air-through nonwoven fabric, a point bond nonwoven fabric and a span bond nonwoven fabric.

FIG. 4 is a partially cutaway perspective view showing a disposable diaper using the sheet 1 of FIG. 1 and FIG. 5 is a sectional view taken along line B—B in FIG. 4. Referring to FIG. 4, imaginary lines indicate the diaper as the topsheet 1 is stretched or deformed downward with respect to the diaper. The diaper comprises a laminated panel 20 comprising the liquid-pervious topsheet 1, a liquid-impermeable backsheet 21 and a liquid-absorbent core 22 disposed between the topsheet 1 and the backsheet 21 and joined to the inner surface of at least one of these two sheets 1, 21. The topsheet may be joined only at a peripheral region of the panel 20 to the core 22 and/or the backsheet 21 so that a central region including stretchable region 2 may be floated upward from the core 22.

The panel 20 has a front waist region 30, a rear waist region 32, a crotch region 31 extending between the front and rear waist regions 30, 32 as viewed longitudinally of the panel 20, opposite side edges 20a extending longitudinally of the panel 20 and curved inward transversely of the panel

20 in the crotch region 31, and opposite ends 20b extending transversely of the panel 20.

The inner side of the panel 20 is formed at a location destined to be placed against the wearer's hip with a cylindrical depression 40 adapted to receive feces discharged from the wearer. The depression 40 is defined by correspondingly shaping the core 22 and has an upper opening 40a, a side wall 40b and a bottom wall 40c. A space is left between the topsheet 1 covering the upper opening 40a and the bottom wall 40c of the depression 40.

The topsheet 1 has, at the location corresponding to the depression 40, the stretchable region 2 adapted to be stretchable or deformed up- and downward with respect to the topsheet 1. The stretchable region 2 is formed by a plurality of circular pleats 2a undulating from the peripheral edge toward the central zone of the stretchable region 2. In the stretchable region 2, the circular pleats 2a have their circumferences progressively reduced toward the central zone and are coaxially arranged so that the outermost pleat 2a lies in the vicinity of the peripheral edge of the upper opening 40a and the innermost pleat 2a lies substantially in the central zone of the bottom wall 40c of the depression 40.

The front and rear waist regions 30, 32 of the panel 20 are provided along the opposite ends 20b of the panel 20 with transversely extending elastic members 23, 24 disposed between the topsheet 1 and the backsheet 21 and secured under tension to at least one of these two sheets 1, 21 so that the elastic members 23, 24 are associated with a waist-opening of the diaper. The panel 20 is further provided along the opposite side edges 20a with longitudinally extending elastic members 25 disposed between the topsheet 1 and the backsheet 21 and secured under tension to at least one of these two sheets 1, 21. The rear waist region 32 of the panel 20 is provided with a pair of tape fasteners 26 extending from the opposite side edges 20a of the panel 20 inward transversely of the panel 20. The tape fasteners 26 having their proximal ends fixed to the side edges 20a.

The topsheet 1 and the backsheet 21 are joined together along their portions transversely extending beyond transversely opposite side edges of the core 22 as well as along their portions longitudinally extending beyond longitudinally opposite ends of the core 22.

The pleats 2a of the topsheet 1 are stretched or deformed under a weight of feces as feces is discharged onto the stretchable region 2 which is, in turn, stretched or deformed downward with respect to the panel 20 until the stretchable region 2 comes in contact with the side wall 40b and the bottom wall 40c of the core 22. The pleats 2a are coaxially arranged and therefore a substantially central zone of the stretchable region 2 comes in contact with the bottom wall 40c of the depression 40. In other words, the stretchable region 2 can be depressed in conformity with the shape of the depression 40 and thereby feces can be reliably received by the depression 40. Before feces is discharged, the stretchable region 2 of the topsheet 1 is maintained in contact with the wearer's hip and thereby alleviates a feeling of discomfort possibly experienced by the wearer due to the peripheral edge defining the upper opening 40a of the depression 40 coming in contact with the wearer's skin. It is possible to use the topsheet 1 of which the stretchable region 2 is formed by a spiral pleat 2a undulating from the peripheral edge toward the central zone of the stretchable region 2, as shown in FIG. 3.

The depression 40 adapted to receive feces may be tapered from the bottom wall 40c toward the upper opening 40a of the depression 40 or from the upper opening 40a toward the bottom wall 40c of the depression 40.

FIG. 6 is a view similar to FIG. 4 but showing another embodiment of the disposable diaper and FIG. 7 is a sectional view taken along line C—C in FIG. 6, where components similar to those previously described have the same reference numeral. The laminated panel 20 according to this embodiment is similar to that of FIGS. 4 and 5 except for that the stretchable region 2 is formed by a plurality of round cornered rectangular pleats 2a and the depression 40 is defined by covering a through-hole formed in an upper layer core 22a substantially in its central zone with a lower layer core 22b. Accordingly, the description of the remaining portions of the laminated panel 20 according to this embodiment is omitted.

Japanese Utility Model Application Disclosure No. 1994-21624 describes a disposable diaper comprising a liquid-pervious topsheet, a liquid-impermeable backsheet and a liquid-absorbent core disposed between these two sheets wherein the core is formed at its zone corresponding to the wearer's hip with a depression adapted to receive feces and the topsheet partially extending downward from an upper peripheral edge along a side wall of the depression is joined to the side wall and a bottom wall. Japanese Patent Application Disclosure No. 1996-191857 also describes a disposable diaper comprising a liquid-pervious topsheet, a liquid-impermeable backsheet and a liquid-absorbent core disposed between these two sheets wherein the diaper is formed at its zone corresponding to the wearer's hip with a depression defined by an upper layer core having a through-hole and a lower layer core covering the through-hole from below to receive feces and the topsheet partially extending downward from an upper peripheral edge of the depression along its side wall is fixed to said side wall and the bottom wall of said depression.

Both of the diapers respectively described in the Japanese Utility Model Application Disclosure No. 1994-21624 and Japanese Patent Application Disclosure No. 1996-191857 disadvantageously require a step of joining the topsheet to the side wall and the bottom wall of the core's depression in the process for making these diapers. On the contrary, it is unnecessary for the diaper of the invention illustrated by FIGS. 4, 6 to join the topsheet to the side wall and the bottom wall of the core's depression in the course of covering the upper surface of the core with the topsheet. Accordingly, the steps of process for making the diaper can be partially eliminated.

The backsheet 21 is made of a synthetic resin film or a laminated sheet consisting of a synthetic resin film and a hydrophobic nonwoven fabric. The core 22 comprises a mixture of fluff pulp and highly absorptive polymer particles or such mixture added with suitable fiber serving to hold a core's shape. The mixture is compressed to a desired thickness and entirely covered with a liquid-pervious sheet such as tissue paper. Fixing and joining of various members may be performed using suitable adhesive agent such as hot melt adhesive agent or sealing technique such as heat-sealing or sonic-sealing.

The topsheet of FIGS. 1, 3 and 4 may be used in the diaper other than the diaper illustrated in FIGS. 4 and 6 so far as the diaper has the depression adapted to receive feces. The diapers having such depressions adapted to receive feces other than the diaper of FIGS. 4 and 6 are described in Japanese Utility Model Application Disclosure No. 1993-86320, Japanese Utility Model Application Disclosure No. 1994-5614 and Japanese Patent Application Disclosure (Gazette No. 1996-196565).

The disposable absorbent article according to this invention enables it to form the topsheet at a desired location with



US005342343A

United States Patent [19] Kitaoka et al.

[11] Patent Number: 5,342,343
[45] Date of Patent: Aug. 30, 1994

[54] DISPOSABLE TRAINING PANTS

[75] Inventors: Hideaki Kitaoka, Funabashi; Tohru Sasaki, Kawanoe, both of Japan

[73] Assignee: Uni-Charm Corporation, Ehime, Japan

[21] Appl. No.: 202,007

[22] Filed: Feb. 25, 1994

Related U.S. Application Data

[63] Continuation of Ser. No. 95,336, Jul. 23, 1993, abandoned, which is a continuation of Ser. No. 933,224, Aug. 21, 1992, abandoned.

[30] Foreign Application Priority Data

Aug. 28, 1991 [JP] Japan 3-242776

[51] Int. Cl.⁵ A61F 13/15

[52] U.S. Cl. 604/385.2; 604/385.1; 604/378; 604/358

[58] Field of Search 604/358, 367, 378-385.2

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Primary Examiner—Randall L. Green

Assistant Examiner—Rob Clarke

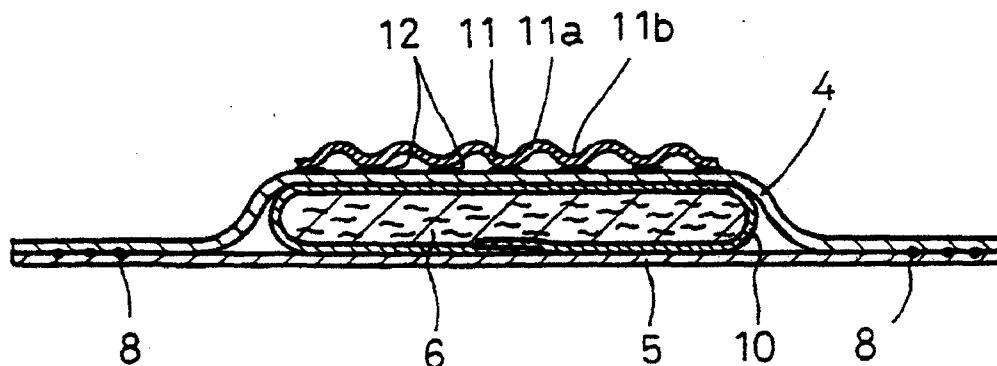
Attorney, Agent, or Firm—Fred Philpitt

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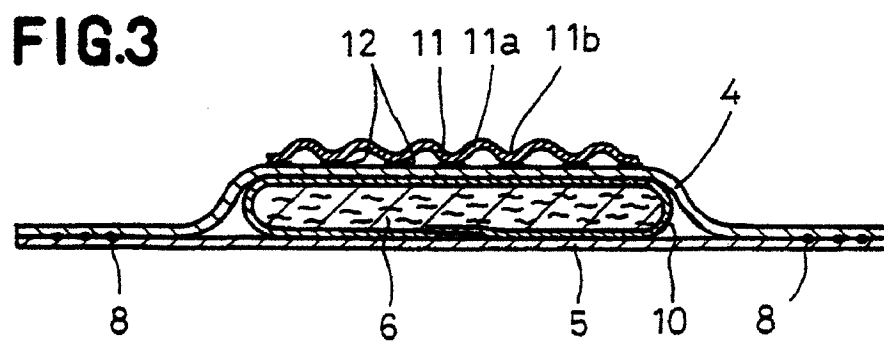
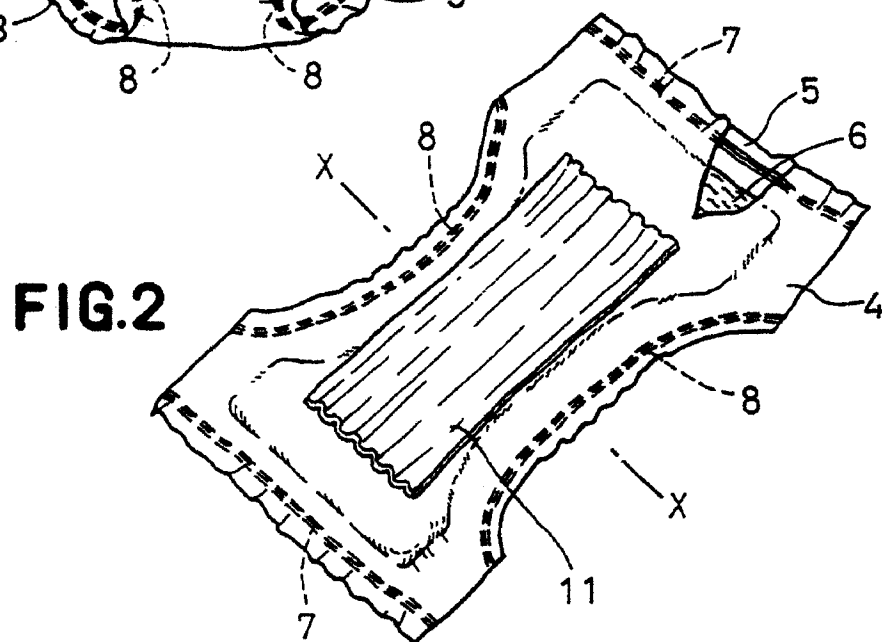
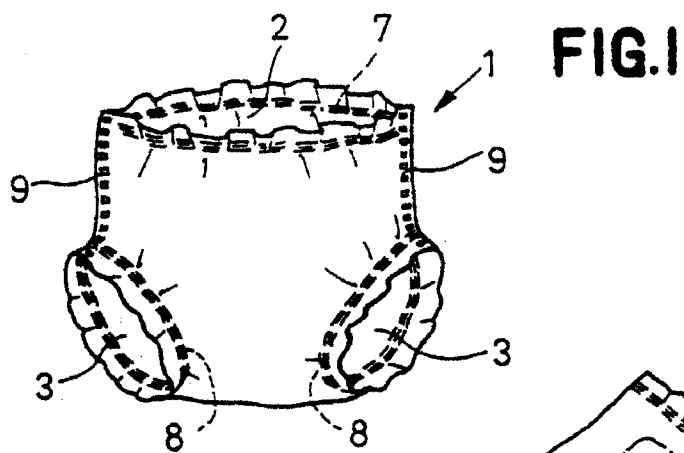
ABSTRACT

Disposable training pants improved for effectively making babies wearing the training pants aware of their own excretions. There are provided on a topsheet of the pants a moistness holding sheet 11 having floating zones 11a serving as moistness sensor means.

5 Claims, 1 Drawing Sheet



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DISPOSABLE TRAINING PANTS

This is a continuation of patent application Ser. No. 08/095,336 filed Jul. 23, 1993 now abandoned, which is a continuation of patent application Ser. No. 07/933,224 filed Aug. 21, 1992 now abandoned.

BACKGROUND OF THE INVENTION

The present invention relates to disposable training pants and more particularly to so-called training pants used for training babies to acquire a habit of living without diapers as early as possible.

The conventional training pants are generally made of cloth and reused after washed. When a baby excretes with such pants put on, a quantity of liquid excretions readily leaks from the pants. Consequently, babies feel uncomfortable and tell their mothers about the excretions.

However, such training pants are disadvantageous not only in that these training pants require washings but also in that carpets or the like on floor are often contaminated by the quantity of excretions leaked from the pants.

Accordingly, it is a principal object of the invention to provide the pants so improved to be free from leakage of liquid excretions which have been inevitable for the conventional pants made of cloth, on one hand, and to be effective in making babies aware of the pants having been wetted with excretions, on the other hand.

SUMMARY OF THE INVENTION

The object set forth above is achieved, according to the invention, by disposable training pants comprising a liquid-permeable topsheet, a liquid-impermeable backsheet and a liquid absorbent core sandwiched between the top- and backsheets and having a waist-opening and a pair of leg-openings, both of the waist-opening and leg-openings being provided with stretchable elastic members, respectively, the disposable training pants being characterized by that a moistness holding sheet is partially bonded to the topsheet at least over a central zone thereof so that the moistness holding sheet partially floats above the topsheet.

Preferably, the moistness holding sheet comprises nonwoven fabric primarily made of hydrophilic fiber. Alternatively, the moistness holding sheet may be made of soft spongy material. The topsheet has a stretchable elasticity and the floating zones are formed by partially bonding the moistness holding sheet to the topsheet while the topsheet is being stretched.

With the training pants of this invention constructed as mentioned above, fluid excretions are first absorbed by the moistness holding sheet and a quantity of such fluid excretions once absorbed into the floating zones of the moistness holding sheet are substantially free from direct absorbing action of the core sandwiched between the top and backsheets, so the quantity of fluid excretions substantially remain in the floating zones. Thus, these floating zones make babies aware of moistness.

BRIEF DESCRIPTION OF THE DRAWINGS

The training pants of the invention will now be described, by way of example, with reference to the attached drawings, in which:

FIG. 1 is a perspective view an embodiment of the training pants constructed according to the invention;

FIG. 2 is a perspective view showing an inner side of said pants as unfolded and partially broken away; and FIG. 3 is an enlarged sectional view taken along a line X—X in FIG. 2.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to FIGS. 1 through 3, pants 1 have a waist-opening 2 and a pair of leg-openings 3. The pants 1 comprise a liquid-permeable topsheet 4, a liquid-impermeable backsheet 5 and a sheet- or mat-like liquid absorbent core 6 sandwiched between the top- and backsheets. Stretchable elastic members 7, 8 are bonded with adhesive under their stretched condition between zones of the top- and backsheets 4, 5 defining the waist-opening 2 and the leg-openings 3, respectively. Components of the pants 1 are laminated with the topsheet 4 lying on the inner side as viewed in the unfolded condition as seen in FIG. 2. This laminate is longitudinally folded in two and intermittently welded together along opposite sides leaving the respective leg-openings 3 unwelded. A moistness holding sheet 11 is bonded to the topsheet 4 at least over a central zone thereof.

The topsheet is nonwoven fabric made of thermoplastic, hydrophobic crimped fibre such as polypropylene or polyester, or such fibre mixed, if desired, with suitable hydrophilic fibre, for example, rayon or acetate fibre of 0 to 50% by weight and, in any case, subjected to the fluid-jet entangling or intertwining process so as to form a sheet which is stretchable both in length and width and has a unit weight of 25 to 45 g/m², an apparent bulkiness of 0.2 to 0.7 mm and a density of 0.06 to 0.12 g/cm³. The backsheet 5 consists of liquid-permeable nonwoven fabric substantially similar to the topsheet 4 and being also stretchable both in length and width, on one hand, and moistness-permeable film made of plastic or elastomeric material which is also stretchable both in length and width and integrally bonded to said nonwoven fabric, on the other hand. Alternatively, the backsheet may comprise liquid-impermeable or liquid-resistant nonwoven fabric. The core 6 is made of a mixture of fluffy pulp, thermoplastic hydrophobic crimped fibre and super absorbent polymer powder, which are then molded into sheet or mat and then covered with water absorbent tissue paper 10.

The moistness holding sheet 11 is nonwoven fabric made of hydrophilic fibre such as rayon or acetate fibre (inclusive of surface-hydrophiled polyester fibre or the like) or such fibre mixed, if desired, with suitable thermoplastic hydrophobic fibre, for example, polypropylene or polyester fibre and, in any case, subjected to melt bond or fluid-jet entangling or intertwining process so as to form a sheet having a unit weight of 20 to 40 g/m², an apparent bulkiness of 0.2 to 1.0 mm and a density of 0.025 to 0.12 g/cm³. The moistness holding sheet 11 preferably has a width of 40 to 100 mm and a length of 60 to 240 mm.

Principally, it depends on a desired relative control of wetting characteristic and permeability of the topsheet 4 as well as the moistness holding sheet 11 for excretions whether the nonwoven fabric used as the topsheet 4 should be made from hydrophobic fibre mixed with hydrophilic fibre or not, whether the nonwoven fabric used as the moistness holding sheet 11 should be made from hydrophilic fibre mixed with hydrophobic fibre or not and to what levels the unit weights, apparent bulkinesses and densities of the topsheet 4 and the moistness holding sheet 11 should be adjusted, respectively. Re-

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garding the wetting characteristic, for example, the moistness holding sheet 11 preferably should have a wetting characteristic higher than that of the topsheet 4 in view of the particular function expected from this moistness holding sheet 11 and it has been found that the above-mentioned values are generally satisfactory to achieve the object of the invention without any significant increase of cost. It should be understood, however, that said values have been mentioned merely as exemplary values and the invention is not limited to these values.

Though not shown, the moistness holding sheet 11 may be formed from composite nonwoven fabric consisting of top layer having a relatively high fibre density and bottom layer having a relatively low fibre density or from nonwoven fabric having a fibre-fluffed bottom surface to achieve a further improved moistness holding effect. Alternatively, the moistness holding sheet 11 may be formed from a liquid-absorbent, soft spongy sheet of urethane, cellulose or the like having a thickness of 0.3 to 2 mm.

Before the moistness holding sheet 11 is laminated on the topsheet 4, the moistness holding sheet 11 is undulated to form floating zones (ridges) 11a and non-floating zones (grooves) 11b and the non-floating zones 11b are bonded to the topsheet 11 with bonding means 12 provided onto the corresponding zones of the topsheet 4. Such laminating may be achieved, for example, by bonding the moistness holding sheet 11 to the topsheet 4 which is being stretched in length and/or width. The floating zones 11a may be also arranged in a pattern of lateral stripes, scattered dots or the like, instead of the vertical stripes as shown. In any case, the floating zones 11a preferably lie at a height spaced above the upper surface of the topsheet 4 as far as possible and preferably has an occupation ratio with respect to the entire moistness holding sheet 11 as high as possible. More specifically, after the topsheet 4 has contracted, said height is preferably 1 mm or higher and said ratio is preferably 20% or higher. The topsheet 4 may be partially provided with the bonding means 12 on the zones depending on the particular pattern of the floating zones 11a. Bonding may be achieved by use of adhesive or welding.

With the training pants provided by the invention, a quantity of fluid excretions once absorbed into the floating zones of the moistness holding sheet is substantially free from direct absorbing action of the core sandwiched between the top- and backsheets, so said quantity of fluid excretions substantially remain in the floating zones which are normally in contact with babies' skins and make babies feel uncomfortable. Thus, babies are aware of their own excretions and acquire a habit of telling another person about excretions during use of the pants.

Furthermore, the floating zones of the moistness holding sheet project upward from the topsheet normally against babies' skins. This feature allows babies to be aware of moistness more sensibly than in the case having none of the floating zones even when the pants are not put on babies' bodies at a level sufficiently high to keep the topsheet in contact with babies' skins around the crotch area or even if the pants have been somewhat displaced with respect to said level.

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While the moistness holding sheet is provided at a zone which is most apt to be exposed to excretions, sticking of excrement to babies' skins is effectively reduced as a secondary effect because such soft excrement flows from the floating zones down to the non-floating zones.

What is claimed is:

1. Disposable training pants for babies that have a waist opening, a pair of leg openings and stretchable elastic members surrounding said waist and leg openings, said pants comprising

- (a) a liquid-permeable topsheet (4),
- (b) a liquid-impermeable backsheet (5),
- (c) a liquid absorbent core (6) sandwiched between said topsheet (4) and said backsheet (5), and
- (d) a moistness holding sheet (11)
- (i) that is intermittently bonded to said topsheet (4) over a central portion of the topsheet (4) except for peripheral portions thereof which extend outwardly from the peripheral edges of said absorbent core so that the moistness holding sheet (11) has a plurality of raised portions extending above said topsheet (4) that are adapted to contact a baby's skin, and
- (ii) that has a wetting characteristics higher than that of said topsheet (4)

whereby when there is a liquid excretion into the training pants said raised portions of said moisture holding sheet (11) will retain a part of the liquid excretion and by being in contact with a baby's skin will make the baby aware of its own excretion.

2. Disposable training pants for babies that have a waist opening, a pair of leg openings and stretchable elastic members surrounding said waist and leg openings, said pants comprising

- (a) a liquid-permeable topsheet (4),
- (b) a liquid-impermeable backsheet (5),
- (c) a liquid absorbent core (6) sandwiched between said topsheet (4) and said backsheet (5), and
- (d) a moistness holding sheet (11) having a plurality of ridges (11a) and grooves (11b), said sheet
- (i) having the bottoms of its grooves (11b) bonded to said topsheet (4) over a central portion of the topsheet (4) so that the ridges (11a) of the moistness holding sheet (11) are spaced above said topsheet (4) and are adapted to contact a baby's skin, and
- (ii) having a wetting characteristics higher than that of said topsheet (4)

whereby when there is a liquid excretion into the training pants said ridges (11a) of said moisture holding sheet (11) will retain a part of the liquid excretion and by being in contact with a baby's skin will make the baby aware of its own excretion.

3. Training pants as recited in claim 2, wherein said moistness holding sheet (11) comprises nonwoven fabric composed primarily made of hydrophilic fibers.

4. Training pants as recited in claim 2 wherein said moistness holding sheet (11) is made of soft spongy material.

5. Training pants as recited in claim 2 wherein said topsheet (4) has a stretchable elasticity and wherein said ridges (11a) are formed by partially bonding said moistness holding sheet (11) to said topsheet (4) while said topsheet (4) is being stretched.

* * * * *

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**SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO
DIRECCION DE NUEVAS CREACIONES**

2020

Abogado
EMILIO FERRERO
Apoderado

ASUNTO	Radicación	07 - 77026
	Trámite	011
	Evento	379
	Actuación	519
	Oficio	1 4 4 0 9
	Folios	011

Patente de Invención	☒	Patente de Modelo de Utilidad	☐
Vía Nacional	☐		
Vía PCT (fase nacional)	☒	Cap. I	☐ Cap. II ☒

No. Sol. Internacional PCT/SE2004/002025
Fecha de Presentación Internal. 29 de Diciembre de 2004

Como resultado del examen de fondo, realizado con fundamento en el artículo 45 de la Decisión 486 de la Comisión de la Comunidad Andina, se le comunica:

1. Documentos estudiados

1.1.	<u>Descripción:</u>	Folios: 37 a 64
1.2.	<u>Reivindicaciones:</u>	Folios: 65 a 69
1.3.	<u>Dibujos:</u>	Folios: 71 a 75
1.4.	<u>Prioridad:</u>	No reivindicó

2. Objeto de la invención

- El Título de la solicitud es: **"ARTICULO ABSORBENTE QUE TIENE PROPIEDADES MEJORADAS PARA MANEJAR MATERIAS FECALAS DE BAJA VISCOSIDAD"** (Folio 1).
- La presente invención se refiere a un artículo absorbente que pretende absorber y retener exudados corporales los cuales pueden incluir materias fecales de baja viscosidad.

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En la **Reivindicación Independiente 1** se plantea un artículo absorbente que comprende un núcleo absorbente y una cubierta que envuelve el núcleo absorbente, la cubierta comprende una cubierta interna permeable a líquidos en el lado que da de frente al cuerpo del núcleo absorbente y una cubierta externa impermeable a líquidos en el lado que da de frente a la prenda del núcleo absorbente, el artículo tiene una porción frontal, una porción posterior y una porción de entrepierna entre éste, **caracterizado en que** la cubierta interna en al menos un área que recibe heces, comprendiendo partes de las porciones posterior y de entrepierna del artículo, comprende un material de tejido fibroso hidrofílico tridimensionalmente estructurado que tiene en la superficie que da de frente al cuerpo una pluralidad de porciones rebajadas y elevadas alternantes, en donde las porciones rebajadas así como elevadas son hidrofílicas y el material de tejido fibroso hidrofílico tridimensionalmente estructurado define la superficie que da de frente al cuerpo de la cubierta interna al menos en parte de la porción posterior y la porción de entrepierna del artículo que se cubre por el núcleo absorbente.

Las siguientes son algunas de las Figuras representativas de la invención:

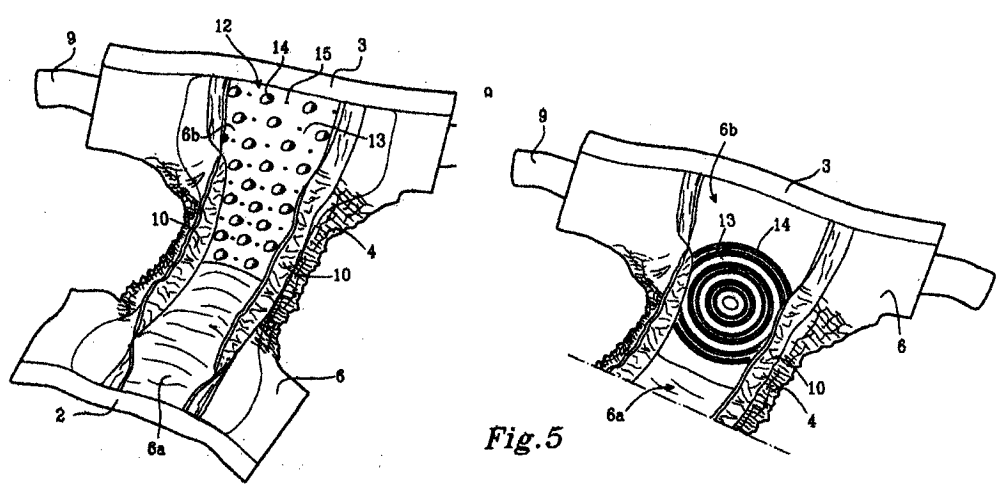


Fig.3

Fig.5

- Se afirma que existe la necesidad de un artículo absorbente para manejo de materiales fecales de baja viscosidad que impida el movimiento de estos a lo largo de la superficie que da de frente al cuerpo del material de cubierta interna.
- El objeto de la invención definido se catalogó como **A61F 5/452**, según la Clasificación Internacional de Patentes (IPC).

3. Determinación del Estado de la Técnica

- La fecha que se ha tenido en cuenta para determinar el Estado de la Técnica es:

Fecha de presentación de la solicitud prioritaria: **29 de Diciembre de 2004**

- Teniendo en cuenta la fecha indicada se realizó la búsqueda en el estado de la técnica de documentos relacionados con la solicitud encontrándose los siguientes:

Nº	Documento	Título	Fecha de publicación
D1	US6409715	"DISPOSABLE ABSORBENT ARTICLE"	25 de Junio de 2002
D2	US5342343	"DISPOSABLE TRAINING PANTS"	30 de Agosto de 1994

4. Análisis de patentabilidad (artículo 14 D 486)

4.1. Novedad (artículo 16 D 486)

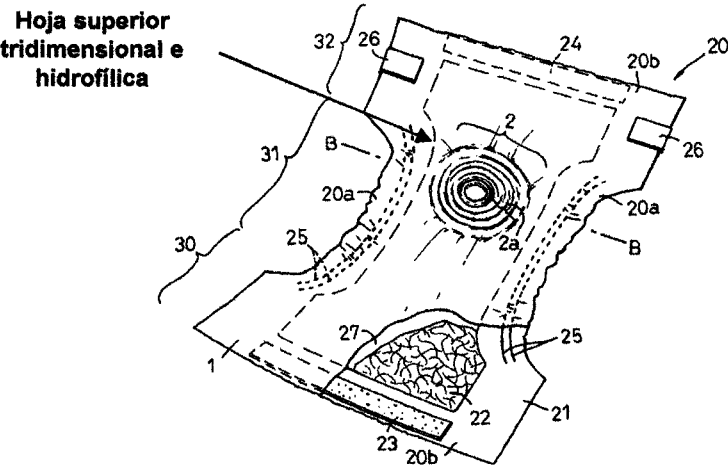
- La Solución Técnica

Un artículo absorbente (Reivindicaciones 1 a 12)

En la **Reivindicación Independiente 1** se plantea un artículo absorbente que comprende un núcleo absorbente (5) y una cubierta que envuelve el núcleo absorbente, dicha cubierta comprende una cubierta interna permeable a líquidos (6) sobre el cuerpo que enfrenta el lado del núcleo absorbente y una cubierta exterior impermeable a líquidos (7) sobre la prenda que enfrenta el lado del núcleo absorbente, dicho artículo tiene una porción frontal (2), una porción trasera (3) y una porción de entrepierna (4) entre estas, **caracterizado porque** dicha cubierta interior (6) en al menos un área de recepción fecal, comprende partes de las porciones trasera y de entrepierna (3,4) del artículo, comprende un material de red fibrosa hidrofílica tridimensionalmente estructurada (12) que tiene sobre el cuerpo que enfrenta la superficie una pluralidad de porciones en nicho (13) y elevadas (14) alternantes, en donde las porciones en nicho así como también las elevadas son hidrofílicas y dicho material de red fibrosa hidrofílica tridimensionalmente estructurada (12) define el cuerpo que enfrenta la superficie de la cubierta interior (6) en al menos partes de la porción trasera (3) y porción de entrepierna (4) del artículo que está cubierto por el núcleo absorbente (5).

- Respecto al Estado de la Técnica:

En el documento **US6409715** (D1) se divulga un artículo absorbente desechable que incluye una hoja superior permeable a los líquidos tal como se muestra en la siguiente Figura:



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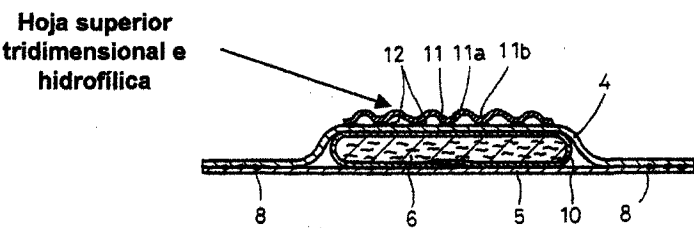
El artículo posee una capa superior elástica formada con una zona tridimensional formada por una pluralidad de pliegues ondulados desde un borde periférico hasta una zona central tal como se observa en la figura arriba señalada. Dicha capa superior permite el acceso de la materia fecal hacia el cuerpo absorbente.

La hoja superior es elaborada de una tela no tejida hidrofóbica tratada para llegar a ser una tela no tejida hidrofílica (Columna 2, líneas 41 – 43).

En el documento **US5342343** (D2) se divulga un artículo absorbente desechable que tiene una hoja superior con una configuración tridimensional para mejorar la captura de exudados corporales.

La hoja superior es elaborada de tela no tejida de fibras hidrofílicas como rayón o fibra de acetato (Columna 2, líneas 24 – 28).

Una de las figuras representativas es la siguiente:

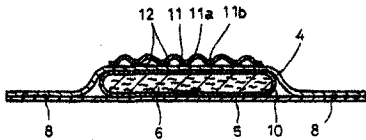


• Comparación elemento por elemento

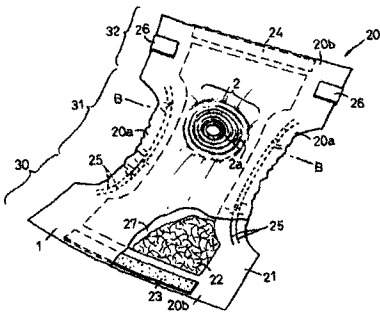
De acuerdo con las reivindicaciones de la solicitud estudiada se encontró que el elemento característico que resuelve el problema técnico es la incorporación de una cubierta interior permeable a los líquidos formada de una red fibrosa hidrofílica tridimensionalmente estructurada que tiene una pluralidad de porciones en nicho y otras porciones elevadas alternantes. No obstante, tanto en D1 como en D2 tomadas de manera independiente y sin ningún tipo de combinación, se encuentran divulgados artículos absorbentes desechables que también poseen una capa superior interna permeable a los líquidos que está formada por material no tejido hidrofílico y tridimensional que presenta porciones en nicho y porciones elevadas alternantes.

Una comparación ilustrada permite visualizar mejor lo antedicho:

D2



D1



Artículo de la solicitud

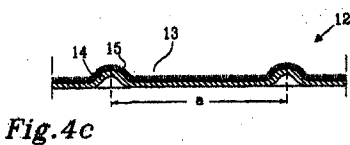


Fig. 4c

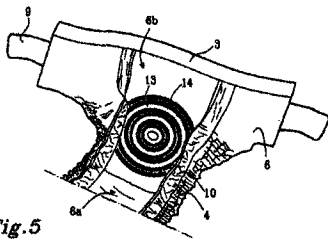


Fig. 5

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- En conclusión, el artículo absorbente propuesto ya formaba parte del estado de la técnica y por ello no cumpliría con el requisito de Novedad del artículo 16 de la Decisión 486.

5. Conclusión

Los requisitos de patentabilidad de la presente solicitud se encuentran afectados así:

N°	Documento N°	Reivindicaciones afectadas	Requisito que afecta
D1	US6409715	1 – 12	Novedad
D2	US5342343	1 – 12	Novedad

En cumplimiento del artículo 45 de la Decisión 486 de la Comisión de la Comunidad Andina, se le indica que debe dar respuesta dentro del término de **60 días** contados a partir de la fecha de notificación de la presente comunicación. **En caso de no dar respuesta al presente requerimiento, o si a pesar de la respuesta subsistieran los impedimentos para la concesión, se denegará la patente.**

Notifíquese el presente oficio conforme a lo dispuesto en el numeral 5.2, literal e), del capítulo quinto del título primero de la Circular Única N° 10 de 2001.

ALIX CARMENZA CÉSPEDES DE VERGEL
Directora de Nuevas Creaciones (C)

05 NOV 2010

El anterior requerimiento fue notificado por fijación en lista, de fecha _____

CONCEPTO TÉCNICO No. 3535	EXAMINADOR TÉCNICO Código No. 202042
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