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Señor Superintendente

Superintendencia de Industria y Comercio

E. S. D.

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO



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Evento : 379

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Referencia : Expediente No. 07.102.201

Asunto : Solicitud de Patente para:

ARTÍCULO DE ROPA INTERIOR QUE COMPRENDE UN MATERIAL LAMINAR ELÁSTICO

Solicitante : **SCA HYGIENE PRODUCTS AB**

Fecha de solicitud : 01 de Octubre de 2007



I. RECURSO VÍA GUBERNATIVA

Yo, Luz Clemencia DE PÁEZ, abogada con Tarjeta Profesional No. 23.555, obrando como apoderada de **SCA HYGIENE PRODUCTS AB**, solicitante de la patente de la referencia, por el presente escrito atentamente manifiesto a usted que debidamente notificada de la Resolución No. **31922** de fecha 25 de Mayo de 2012, interpongo en su contra el recurso de **REPOSICIÓN**, para que sea revocada y se conceda el privilegio de patente de invención para "**ARTÍCULO DE ROPA INTERIOR QUE COMPRENDE UN MATERIAL LAMINAR ELÁSTICO**" a favor de **SCA HYGIENE PRODUCTS AB**.

II. OPORTUNIDAD DE LA IMPUGNACIÓN

La Resolución No. **31922** de fecha 25 de Mayo de 2012, fue notificada mediante edicto No. **16472** desfijado el veintinueve (29) de Junio de dos mil doce (2012), por lo que el término para interponer

el recurso de reposición vence el nueve (09) de Julio de dos mil doce (2012). En consecuencia, me encuentro dentro de la oportunidad legal.

III. FUNDAMENTO DE LA RESOLUCIÓN No. 31922

Mediante la Resolución objeto de la presente impugnación, el Superintendente de Industria y Comercio decidió:

3.1. Negar el privilegio de patente para la invención **“ARTÍCULO DE ROPA INTERIOR QUE COMPRENDE UN MATERIAL LAMINAR ELÁSTICO”**.

3.2. En la parte motiva de la providencia, se mencionaron los siguientes fundamentos:

“Como se puede observar, las características del artículo de ropa interior tipo pantaloncillo de la reivindicación 1 ya habían sido divulgadas previamente en el documento D1, de acuerdo a la comparación que aparece en la anterior tabla. Por lo tanto, se concluye que el artículo de ropa interior tipo pantaloncillo caracterizado en dicha reivindicación, ya era conocido en el estado de la técnica y no puede considerarse nuevo.”

“Asimismo, es necesario aclarar que durante el trámite se requirió a la solicitante por deficiencias en la caracterización de la materia a proteger en lo respectivo a la claridad y concisión de las reivindicaciones, y aunque la solicitante modificó en dos oportunidades el capítulo reivindicatorio buscando superar las objeciones, esto no se alcanzó porque se continuó caracterizando el objeto a proteger incorrectamente.”

IV. OBJETO DEL RECURSO

De acuerdo con los argumentos que expongo a continuación, solicito atentamente a su Despacho lo siguiente:

4.1. Revocar la Resolución No. 31922 de fecha 25 de Mayo de 2012, en el sentido de:

Conceder el privilegio de patente de invención para **“ARTÍCULO DE ROPA INTERIOR QUE COMPRENDE UN MATERIAL LAMINAR ELÁSTICO”** a favor de **SCA HYGIENE PRODUCTS AB**.

V. FUNDAMENTOS DEL RECURSO

Respetuosamente me permito disentir de lo expuesto por ese Despacho en la Resolución objeto del presente recurso, ya que la presente solicitud es novedosa a la luz del documento EP 0 861 647 (D1).

La anterior afirmación tiene justificación jurídica y técnica por las siguientes razones:

5.1. Violación de los artículos 14 y 16 de la Decisión 486 de la Comisión de la Comunidad Andina:

De acuerdo con los artículos 14 y 16 de la Decisión 486:

"Artículo 14.- Los Países Miembros otorgarán patentes para las invenciones, sean de producto o de procedimiento, en todos los campos de la tecnología, siempre que sean nuevas, tengan nivel inventivo y sean susceptibles de aplicación industrial."(Subrayas fuera del texto)."

"Artículo 16. - Una invención es nueva cuyo no está comprendida en el estado de la técnica."

El estado de la técnica comprenderá todo lo que haya sido accesible al público, por una descripción escrita u oral, por una utilización o cualquier otro medio antes de la fecha de presentación de la solicitud de patente o, en su caso, de la prioridad reconocida".

Así entonces, para determinar si una invención es novedosa o no, el Examinador de patentes debe primero cerciorarse que ésta no se encuentre dentro del estado de la técnica. El estado de la técnica es el conjunto de conocimientos técnicos dentro del campo de la invención que hayan sido publicados por cualquier medio, antes de la fecha de solicitud de la invención o de la prioridad reivindicada. Una vez se determina el estado de la técnica, el Examinador debe compararlo frente a la invención, elemento por elemento, con el fin de establecer si existe alguna diferencia entre ellos.

Teniendo en cuenta lo anterior, se expone a continuación el por qué la presente invención posee novedad frente al documento D1, toda vez que se interpretó erróneamente el artículo 16 de la Decisión 486, como se muestra a continuación:

En primer lugar, deseamos reiterar que la anterioridad (EP 0 861 647) hace referencia a un sistema de ropa interior que comprende una parte de pantaloncillo reutilizable (1) y un revestimiento absorbente intercambiable (7). Dichos pantaloncillo constan de un laminado de tres capas (3), que contiene una película de membrana (5) como una capa intermedia entre dos estructuras textiles.

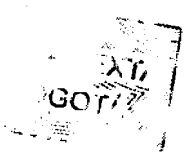
Adicionalmente, dicho pantaloncillo se caracteriza porque el laminado comprende una membrana respirable de poliuretano posicionada entre dos capas preferiblemente elásticas, de formas tal que el laminado obtenido es bi-elástico, como es indicado en la reivindicación 3. De esta manera, la elasticidad del laminado se obtiene por redes tejidas, como se puede observar la última línea de la columna 3 a la línea 6 de la columna 4.

Partiendo de lo anterior, resulta claro que la configuración enseñada en el documento D1 difiere de la configuración del material laminado elástico de acuerdo a la reivindicación 1, toda vez que el laminado de tres capas de red tejida no está constituido de un material estirado creciente a un punto por debajo de la elongación en la carga máxima en una de las capas no tejidas no elásticas, lo que permite alcanzar la elasticidad necesaria para la fabricación del artículo reivindicado.

Por otro lado, el Examinador menciona que:

“En este sentido, la frase “el material elástico (20) es estirado crecientemente a un punto debajo de la elongación en la carga máxima de al menos una de las capas no tejidas no elásticas” hace referencia a la forma de obtener mediante un proceso el material plástico, lo cual corresponde a definir el producto en términos de su proceso de fabricación y no por sus características estructurales, por tanto dicha frase no puede aceptarse como característica técnica del producto a reivindicar. La siguiente frase, que busca definir una capa de material fibroso porque “tiene una elongación a una carga máxima mayor a la elasticidad del material laminar elástico”, tal y como se había objetado en el oficio No. 00054 (Fl. 145) corresponde a un resultado a obtener, y no una característica técnica esencial estructural o funcional, por lo tanto, dicha frase tampoco puede aceptarse como característica técnica del producto a reivindicar.”

A este respecto, resulta necesario poner de presente que, contrario a lo afirmado por el Señor Examinador en la resolución impugnada, el artículo de ropa interior de tipo pantaloncillo (10) se encuentra definido en términos de sus elementos estructurales y funcionales, como lo son las regiones frontal (12), posterior (14), de entrepierna (16) y de cintura (18), así como el hecho que el artículo presenta un material laminar elástico (20) compuesto de una primera (22) y una segunda (24) capa de material fibroso, y una capa de película elástica (26) localizada entre las primera y segunda capa fibrosa (22, 24). En vista de lo anterior, el artículo reivindicado se caracteriza porque el material laminar elástico (20) es estirado crecientemente a un punto debajo de la elongación en la carga máxima de al menos una de las capas no tejidas no elásticas, y porque una capa de material fibroso tiene una elongación a una carga máxima mayor a la elasticidad del material laminar elástico, en donde dicho material laminar elástico es resistente a la perforación y el artículo de ropa interior del tipo de pantaloncillo se puede volver a usar y tolera el lavado a máquina sin romperse.



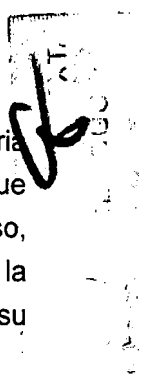
Frente a lo anterior, se desea aclarar que el material elástico no se encuentra definido por un proceso de fabricación, como es afirmado por su Despacho, sino por las propiedades mecánicas típicas de materiales poliméricos. De esta manera, cualquier persona conocedora de ingeniería química y ciencia de los materiales está en la capacidad de utilizar sus conocimientos para la interpretación de la composición del material elástico, más aun teniendo en cuenta que la memoria descriptiva, específicamente en las páginas 6 y 7, claramente indica los tipos de materiales laminares usados en las modalidades preferentes de la invención.

Así las cosas, se considera que el artículo de ropa interior de tipo pantaloncillo (10) no solo resulta novedoso en vista de las enseñanzas del arte previo, sino que también se encuentra claramente definido en el capítulo reivindicatorio presentado ante su Despacho.

Por último, se desea poner de presente que aunque nos encontramos de acuerdo con la soberanía y autonomía de su Oficina para realizar el examen de patentabilidad de las solicitudes de patentes, consideramos relevantes tener de presente que la solicitud bajo estudio ha sido concedida por las Oficinas de Patente de Australia, China y Rusia.

5.2. Conclusión

En línea con los argumentos presentados y con las disposiciones de la legislación actual en materia de patentes, consideramos que el estudio de patentabilidad no fue correctamente realizado y que contrario a lo que afirma el Examinador, el artículo absorbente reivindicado sí resulta novedoso, teniendo en cuenta que este no había sido previamente divulgado en su totalidad previo a la presente solicitud. De la misma manera, el pliego reivindicatorio resulta claro y conciso para su comprensión por parte de una persona versada en la materia.



Por lo tanto, la decisión tomada en este sentido debe ser revocada, dado que la solicitud en estudio cumple con los requerimientos de patentabilidad tal como exige la Decisión 486 de la Comunidad Andina.

VI. PETICIONES

Ruego a Usted entonces, lo siguiente:

- 6.1.** Que se revoque el artículo PRIMERO de la Resolución No. 31922 en cuanto niega el privilegio de patente para el capítulo reivindicatorio de la presente invención.

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6.2.

Que en consecuencia se otorgue el privilegio de patente de invención para “**ARTÍCULO DE ROPA INTERIOR QUE COMPRENDE UN MATERIAL LAMINAR ELÁSTICO**” a favor de **SCA HYGIENE PRODUCTS AB**.

VII. ANEXOS

Presento junto al presente recurso, copia de los títulos de patentes y pliegos reivindicatorios en Ingles, concedidos por las Oficinas de Patentes de Australia, China y Rusia.

VIII. NOMBRE Y DIRECCIÓN DEL RECURRENTE

El nombre y la dirección del recurrente son:

SCA HYGIENE PRODUCTS AB
405 03 Goteborg
Suecia



VIII. NOTIFICACIONES

Atentamente manifiesto a usted que recibiré notificaciones en la Secretaria de su Despacho o en mi oficina de abogada situada en la Carrera 4ª. No. 72-35, piso 4º, de esta ciudad de Bogotá, D.C.

Señor Superintendente,

LUZ CLEMENCIA DE PAEZ
LUZ CLEMENCIA DE PAEZ
C.C. 35.456.344 de Usaquén
T.P.A. No. 23.555

COLO-11256-841-131-1
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No. M-2012-221144\LLG

NOTARIA SEXTA DE ROGOTA

RECONOCIMIENTO Y PRESENTACION PERSONAL

BOGOTA, D.C.

ADMINISTRACION DE LA NOTARIA

NOTARIA SEXTA DE ROGOTA

BOGOTA, D.C.

Continuación

09 JUL 2012

Luz Clemencia
Suarez de paer

Quiero por este documento

CC # 35.456.344 usag
TP # 23.555

Yo, el infrascripto, en presencia de los señores

señores, en el momento de otorgar este documento

que a la vez de ser el mismo, es el original.

En conformidad de lo establecido en la ley.

Luz Clemencia Suarez de paer

TP # 23555 055





Australian Government

IP Australia

LETTERS PATENT

STANDARD PATENT

2005328393

I, Fatima Beattie, the Commissioner of Patents, grant a Standard Patent with the following particulars:

Name and Address of Patentee(s):

SCA Hygiene Products AB
S-405 03, Goteborg, Sweden

Name of Actual Inventor(s):

Melander, Magnus.

Title of Invention:

Underwear article comprising an elastic laminate

Term of Letters Patent:

Twenty years from 2 March 2005



Dated this 21st day of June 2012

Fatima Beattie
Commissioner of Patents

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SCA Hygiene Products AB

(72) Inventor(s)
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Watermark Patent and Trade Marks Attorneys, Level 2 302 Burwood Road, Hawthorn, VIC, 3122

(56) Related Art
WO 2001/045927 (THE PROCTER & GAMBLE COMPANY) 28 June 2001
US 5543206 (AUSTIN et al.) 06 August 1996
US 2002/0019187 (CARROLL et al.) 14 February 2002
US 2003/0022582 (CREE et al.) 30 January 2003

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

(72) Inventor; and

(75) Inventor/Applicant (for US only): MELANDER, Mag-
nus [SE/SE]; Kullegatan 3C, S-412 62 Göteborg (SE).

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

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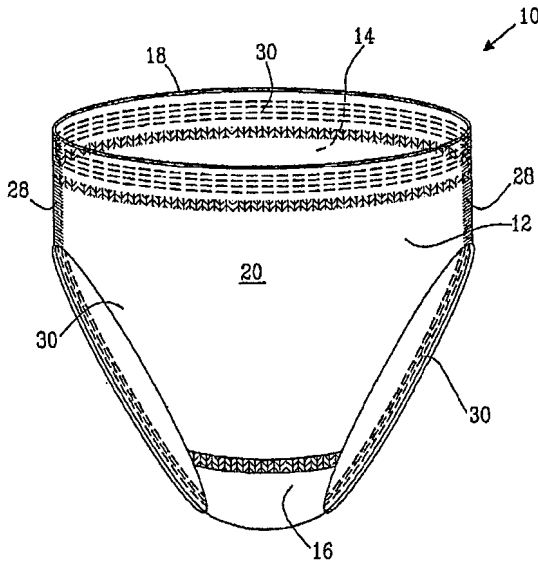
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Published:

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For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: UNDERWEAR ARTICLE COMPRISING AN ELASTIC LAMINATE



(57) Abstract: A pant-type underwear article (10), comprising a front (12), back (14), crotch (16) and waist (18) regions, said article (10) having a longitudinal (y) and a transverse direction (x). According to the invention, at least part of the article (10) comprises an elastic laminate (20) composed of first (22) and second (24) layers of fibrous material and an elastic film layer (26) located between said first and second fibrous layers (22, 24), said elastic laminate (20) having a puncture resistance of at least (15N).

WO 2006/093443 A1

Underwear article comprising an elastic laminate***Technical field***

The present invention refers to a pant type underwear article, said article comprising
5 front, back, crotch and waist regions. At least part of the article comprises an elastic
laminate composed of two layers of fibrous material and an elastic film layer located
between the fibrous layers.

Background of the invention

10 It is known to hold disposable absorbent bodies in place against the body of an
incontinent wearer with reusable pant-type underwear articles. The disposable
absorbent bodies may be sanitary napkins or incontinence articles. This approach has
advantages over conventional absorbent articles with an integral absorbent core such
as diapers or incontinence pants, in that only the absorbent component of the article is
15 disposed after soiling, while the underwear component can be reused, thus providing
savings in both manufacturing costs and materials.

Laminate-type materials are known as components of absorbent articles such as
diapers. For example, WO 03/047488 discloses an elastic laminate comprising an
20 elastic film which on opposite sides is bonded to first and second non-elastic fibrous
layers. The laminate is made by bonding the non-elastic fibrous layers to the elastic
film layer and subsequently stretching the composite material, causing the non-elastic
materials to break. The elastic film material may be of a breathable material. The
laminate may be incorporated in an absorbent article, such as a diaper. No mention is
25 made of the puncture resistance of such a material. The process described in WO
03/047488 will give a material which is soft and elastic, but which on the other hand
has low resistance to puncturing, as the broken outer nonwoven layers will make no
contribution to the puncture resistance of the laminate.

30 EP0861647 discloses an underwear system comprising a reusable underpant part and
an exchangeable absorber lining. The pants consist of a 3-layer laminate, which
contains a membrane film as an intermediate layer between two textile structures.

Elastic materials, such as stretch-bonded laminates, are also known. Such laminates
35 may include a layer of meltblown elastomeric fibers which have been stretched and
sandwiched between outer layers of spunbonded webs.

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US2003/0022582 describes a laminate in which an elastomeric film is bound between two or more layers of nonwoven webs. The laminate is said to be particularly useful in elastic "ears" of diapers, which allow the diaper to be stretched to accommodate variously sized wearers. It is stated that nonwoven materials provide little or no puncture resistance, hence any puncture resistance which the laminate has will be almost exclusively due to the puncture resistance of the elastomeric film.

However, there is room for improvement of the underwear articles used in two-component systems. The consumer places high demands on the comfort, fit and cloth-like feel of the pant-type underwear articles. Discreteness of the article is also a high priority, so the underwear article should be thin, preferably equally as thin as a pair of ordinary cotton pants. Furthermore, it is highly desirable that the absorbent body is held correctly in position against the wearer's body by the underwear article, so that it is optimally positioned to receive body exudates and undesired slippage or movement of the absorbent body is avoided. The underwear article itself is intended to be re-used, and therefore requires washing. It must therefore be able to tolerate the elevated temperatures, water, detergents and mechanical agitation which are present in the washing and/or drying machines of today without breaking. There is therefore a need for improvement of the strength of underwear articles, particularly their resistance to puncture.

Object and most important features of the invention

One object of the present invention is to provide a pant-type underwear article which combines the properties of comfort and fit to the wearer's body and a soft and cloth-like feeling close to textile materials. It is further desirable that the article can be put on and taken off without puncturing, e.g. by fingernails. This is an important feature, as the force which can be applied during putting on and taking off such an article has been estimated as being up to 5N. It is also desirable that the article should tolerate machine washing and drying and remain intact.

In one aspect, the invention provides pant-type underwear article, comprising front, back, crotch and waist regions, said article having a longitudinal and a transverse direction, at least part of the article comprising an elastic laminate composed of first and second layers of fibrous material and an elastic film layer located between said first and second fibrous layers, wherein said elastic laminate has a puncture resistance of at least 15N, and wherein the pant type underwear article does not contain an absorbent core.

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In another aspect the invention provides a pant type underwear article, comprising front, back, crotch and waist regions, said article having a longitudinal direction and a transverse direction, at least part of the article comprising an elastic laminate composed of first and second layers of fibrous material and an elastic film layer located between said first and second fibrous layers, wherein said elastic laminate has a puncture resistance of at least 15N, wherein at least one of the layers of fibrous material has an elongation at maximum load greater than an elasticity of the elastic laminate, and wherein the pant underwear article is reusable after washing.

10

Due to the materials and methods involved in its construction, the puncture resistance of this laminate is higher than the elastic film layer alone (i.e. the layers of fibrous material contribute to the puncture resistance of the laminate). The underwear article provides good fit due to the elasticity of the laminate, and a cloth-like feel.

5 Furthermore, the underwear article is reusable, and tolerates machine washing/drying, even machine washing up to 60°C. Use of the laminate allows the article to survive machine washing at least three times at up to 60°C through a washing cycle of a washing machine and yet remain intact. The underwear article may be used to hold individual absorbent bodies (e.g. sanitary napkins or incontinence articles) securely in

10 place against the user's body, yet will not be permanently fastened to such absorbent bodies. The elastic properties of the laminate help to ensure that the absorbent bodies are held securely against the wearer's body.

Preferably the elastic laminate has a puncture resistance of at least 20N, more

15 preferably at least 30N.

In one embodiment, at least the front region of the article comprises the elastic laminate. Furthermore, both the front and back regions of the article may comprise the elastic laminate. In another embodiment, a substantial part of the crotch region of

20 the article is free from elastic laminate. Additionally, the waist region of the article may be free from elastic laminate. In a separate embodiment, the entire article comprises the elastic laminate.

Preferably, the elastic film layer is breathable. The elastic laminate suitably has a

25 Water Vapour Transmission Rate according to ASTM E96-00 Procedure D of at least 1500 g/m² 24h, preferably at least 3000 g/m² 24h.

In one embodiment, the elastic laminate has an elasticity in the transverse direction of the article of at least 30%, preferably at least 50%, more preferably 70%, when

30 measured according to the elasticity test specified herein. Elasticity in the transverse direction of the article allows an article of a single size to be used on wearers having a variety of waist sizes. At least one of the layers of fibrous material may have an elongation at maximum load greater than the elasticity of the elastic laminate. Furthermore, both layers of fibrous material may have an elongation at maximum load

35 greater than the elasticity of the elastic laminate.

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According to one embodiment of the present invention, the layers of fibrous material have an elongation at maximum load of at least 10%, preferably at least 20%, greater than the elasticity of the elastic laminate. The first and/or the second layers of fibrous material preferably comprise a mixture of polypropylene and polyethylene polymers.

In a most preferred embodiment, the elastic laminate comprises first and second fibrous layers of spunbond material, each having a basis weight of between 10 and 35 g/m², preferably between 12 and 30 g/m², more preferably between 15 and 25 g/m², and a breathable elastic film layer having a basis weight between 20 and 100 g/m², preferably between 20 and 60 g/m², said elastic laminate having a Water Vapour Transmission Rate according to ASTM E96-00 Procedure D of at least 1500 g/m² 24h, preferably at least 3000 g/m² 24h.

15 Description of the Figures

Fig. 1 shows a perspective view of a pant-type underwear article.

Fig. 2 shows a simplified plan view of the pant-type underwear article in its flat, uncontracted state prior to formation.

Fig. 3 is a cross section through an elastic laminate according to the invention.

20 Fig. 4 is a graph showing load vs. strain for two nonwoven fibrous layers.

Fig. 5 is a graph showing load vs. strain for an elastic laminate.

Description of preferred embodiments

The invention will in the following be closer described with reference to some
25 embodiments shown in the accompanying figures.

The figures show an embodiment of a pant-type underwear article 10. The article typically comprises front 12, back 14, crotch 16 and waist 18 regions. The front region 12 is that which in use covers the belly of the user. The waist region 18 is
30 that which encircles the waist of the user when the article is being worn. The back region 14 is that which covers the lower torso/buttocks of the user when the article is being worn. The crotch region 16 is defined as the narrow part of the

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article intended to be worn in the wearer's crotch between the legs. The article 10 has a longitudinal (y) and a transverse direction (x).

5 The article is thus divided into four regions (front region 12, back region 14, crotch region 16 and waist region 18) in its longitudinal direction, as shown in Figure 2. The

front region is defined by the edge of the article at which the waist region ends, the longitudinal side edges of the article, part of the leg openings of the article and a transverse line (a) which is located at the point at which the angle of the edge of the leg opening changes most abruptly (i.e. the point at which the rate of change of the angle of the edge of the leg opening with respect to the transverse direction is highest). The back region is defined in a similar manner: by the edge of the article at which the waist region ends, the longitudinal side edges of the article, part of the leg openings of the article and a transverse line (b) which is located at the point on the edge of the leg opening at which the angle of the edge changes most abruptly (i.e. the point at which the rate of change of the angle of the edge of the leg opening with respect to the transverse direction is highest). The crotch region is defined at its longitudinal edges by the edges of the leg openings of the article and at its transverse edges by the two transverse lines (a) and (b) described above.

15 *Elastic laminate*

At least part of the article 10 comprises an elastic laminate 20 composed of first 22 and second 24 layers of fibrous material and an elastic film layer 26 located between said first and second fibrous layers 22; 24. Characteristically, the elastic laminate 20 has a puncture resistance of at least 15N. Preferably, the elastic laminate 20 has a puncture resistance of at least 20N, more preferably at least 30N.

The laminate is elastic at least in the transverse x-direction of the article. The elasticity in the x-direction should be at least 30%, preferably at least 50%, more preferably at least 70%, as measured by the elasticity test specified herein.

The elastic laminate 20 is composed of first and second outer layers of fibrous material 22 and 24 and a middle elastic film layer 26 located between said fibrous layers. The outer fibrous layers 22 and 24 are chosen so that they, in combination with the inner elastic film layer, give the laminate high resistance to puncture. They also provide a soft and cloth-like feel to the laminate. Examples of suitable materials are carded webs and spunbond materials. The basis weight of the fibrous material layers should be between 10 and 35 g/m², preferably between 12 and 30 g/m², more preferably between 15 and 25 g/m². Examples of suitable polymers used in the fibrous materials are polyethylene, polyesters, polypropylene and other polyolefin homopolymers and copolymers. Natural fibres, for example cotton, may also be used as long as they provide the required properties. A mixture of polymers can contribute to a higher flexibility of the nonwoven layer, and through this, give the nonwoven material a

higher elongation at maximum load. A mixture of polyethylene and polypropylene polymers has proved to provide good results in this respect. A mixture of fibers of different polymers is also possible.

- 5 The middle elastic film layer 26 is according to one embodiment of the invention an apertured elastic film having a basis weight between 20 and 100 g/m², preferably between 20 and 60 g/m². The film may be of any suitable elastic polymer, natural or synthetic. Some examples of suitable materials for the elastic film are low crystallinity polyethylenes, metallocene-catalyzed low crystallinity polyethylene, ethylene vinyl acetate copolymers (EVA), polyurethane, polyisoprene, butadiene-styrene copolymers, styrene block copolymers, such as styrene/isoprene/styrene (SIS), styrene/butadiene/styrene (SBS), or styrene/ethylene-butadiene/styrene block copolymer. Blends of these polymers may also be used as well as other modifying elastomeric or non-elastomeric materials. One example of a suitable film is an apertured three-layer elastomeric film of PE-SEBS-PE.

- As mentioned previously, the elastic film layer 26 may be breathable. This allows a higher degree of comfort for the wearer, as moisture/humidity build-up is reduced or completely avoided. The breathability of the elastic film layer 26 may be quantified by the Water Vapour Transmission Rate (WVTR) according to ASTM E96-00 Procedure D. According to one embodiment, the elastic laminate 20 has a Water Vapour Transmission Rate of at least 1500 g/m² 24h, preferably at least 3000 g/m² 24h as measured by the above ASTM procedure.

- 25 The elastic laminate 20 may be manufactured according to a modified version of the method disclosed in WO 03/047488, wherein one spunbond layer 22 is applied to the film 26 in a tacky state and will thus bond to the film layer, while the other spunbond layer 24 is adhesively laminated to the film layer 26, using for example a pressure sensitive hot melt adhesive. The modification involves the laminate being incrementally stretched (through Intermeshing gears, IMG), to a point below the elongation at peak load of at least one of the non-elastic nonwoven layers to retain some strength for at least one of the nonwoven layers. The other layer may also be stretched to a point below its elongation at peak load, or to a point at which it will tear during stretching.

- 35 The method disclosed in WO 03/047488 involves stretching of the laminate above the point of failure of the fibrous material, so that the non-elastic layers break completely.

Therefore, as described in WO 03/047488, the elongation of the laminate is not limited by the stretch modulus of the non-elastic material.

5 In contrast to the method described in WO 03/047488, upon manufacture of a laminate according to the present invention, at least one, preferably both fibrous layers which are bound to the elastic film are not completely torn. Selection of fibrous materials which have an elongation at maximum load greater than the elasticity of the elastic laminate allows the elastic film to stretch without being hindered by the fibrous layers. Such a selection also ensures that the fibrous
10 layers contribute to the puncture resistance of the laminate, as they are not completely torn or broken during manufacture. Therefore, at least one of - alternatively both - the layers of fibrous material 22, 24 may have an elongation at maximum load greater than the elasticity of the elastic laminate 20. Preferably the layers of fibrous material 22, 24, or at least one of the fibrous layers, have an
15 elongation at maximum load that is at least 10%, preferably at least 20%, greater than the elasticity of the laminate 20.

According to a most preferred embodiment of the invention, the elastic laminate 20 comprises first and second fibrous layers 22, 24 of spunbond material, each
20 having a basis weight of between 10 and 35 g/m², preferably between 12 and 30 g/m², more preferably between 15 and 25 g/m² and a breathable elastic film layer 26 having a basis weight between 20 and 100 g/m², preferably between 20 and 60 g/m². The elastic laminate 20 according to this embodiment has a Water Vapour Transmission Rate according to ASTM E96-00 Procedure D of at
25 least 1500 g/m² 24h, preferably at least 3000 g/m² 24h.

Fig. 4 shows the behaviour of two 20 gsm and 25 gsm nonwoven layers (BBA Sofspan 200) under stretching. It can be seen that, with increasing load (in Newtons), the strain in the layer increases, first slowly and then more rapidly.
30 The applied load eventually reaches a maximum (the "maximum load"), at which point the load drops rapidly as the material fails. It can be seen that for the

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20 gsm layer, maximum load is reached at around 90% strain, while for the 25 gsm layer, maximum load is reached at around 150% strain.

5 Fig. 5 shows the behaviour of a laminate according to the present invention under stretching at a constant strain. The laminate comprises 25 gsm Sofspan NW from BBA on both sides of a 40 gsm apertured elastic film, where one face is glue-laminated

with approximately 5 gsm glue.

From zero strain, the laminate exhibits elastic behaviour in region (A) up to around a "knee point" (B), after which, the load increases rapidly through region (C). The knee point (B) is defined as the first point on the load-strain curve at which the gradient becomes greater than 0.3N/%. The laminate shown is elastic up to about 80% strain – as this is less than the elongation (strain) at maximum load of the nonwoven layer (ca. 150% from Fig. 5), the laminate falls within the present invention.

10 The applied load eventually reaches a maximum (the "maximum load", D), at which point the gradient of the load-strain curve is zero. The load then drops through region (E) as the material fails. Complete failure of the laminate occurs at point (F).

It is preferred that the elastic laminate 20 has a breathability (Water Vapour Transmission Rate) according to ASTM E96-00 Procedure D of at least 1500 g/m² 24h, preferably at least 3000 g/m² 24h.

The opacity of a material layer is the characteristic ability of the material layer to visually hide from view an underlying object or pattern. The opacity is measured in %, wherein 100% opacity means that nothing can be seen through the material layer and 0% means that the material layer is completely transparent. The opacity is measured by the Opacity Test described below, which is based on luminous-reflectance-factor data. The elastic web material has an opacity of at least 40%, preferably at least 50% and more preferably at least 60%. The opacity of the elastic web material provides a cloth-like appearance to the article, which is of particular importance when the article is pant-type underwear. Especially in this case, where the elastic web material forms the sole component in large areas of the front and back regions, the appearance of the elastic web material is of great importance for the overall appearance of the article. Thus by making the elastic web material opaque with an opacity of at least 40%, the pant-type underwear article will appear more cloth-like and more like "normal" underwear, than if the elastic web material has a higher degree of transparency.

Opacity can be increased by the incorporation of opacifying fillers into the laminate, particularly into the elastic film. Such pigments can be organic or inorganic dyes, colouring agents, or whitening agents. Inorganic materials such as titanium dioxide, inorganic carbonates, synthetic carbonates, talc, nepheline syenite, magnesium hydroxide, aluminium trihydrate, atomaceous earth, mica, natural or synthetic silicas,

calcinated clays and mixtures thereof are preferred examples of opacifying fillers.

The filler is preferably added as a master batch at the extrusion of the film. One example of an appropriate concentration is about 5% filler by weight of the film.

5

The open area of the elastic film layer is preferably at least 5%, more preferably at least 8%. The open area is measured by image analysis methods and is defined as the sum of the hole area divided by the total area of the film sample.

10 *Pant-type underwear article*

The pant-type underwear article 10 disclosed in Fig. 1 is intended to enclose the lower part of the wearer's trunk and crotch region. It comprises front 12, back 14, crotch 16 and waist regions 18. The front 12 and back 14 regions are joined to each other along their longitudinal edges at side seams 28, which may comprise ultrasonic welds, glue strings or the like.

15

The entire article 10 may comprise elastic laminate 20. Preferably, at least the front region 12 of the article 10 comprises the elastic laminate 20. Furthermore, both the front and back regions 12; 14 of the article may comprise the elastic laminate 20.

20

According to a preferred embodiment a substantial part of the crotch region 16 of the article is free from the elastic laminate 20. A "substantial part" used herein refers to at least 50%, preferably at least 75%. If the crotch region 16 does not comprise elastic laminate 20, it may comprise nonwoven material, or a breathable film material.

25

This embodiment allows improved comfort and breathability of the article in the crotch region. Alternatively, the crotch region 16 may comprise a different nonwoven film laminate than the elastic laminate 20 used in the remainder of the article. As a further alternative, the crotch region 16 may comprise a plastic film material, which may be non-breathable.

30

Preferably also the waist region 18 of the article is free from the elastic laminate. The waist region 18 may comprise a nonwoven material that is elasticized by elastic members 30, such as elastic threads, contractably affixed between material layers, such as nonwoven materials. Such elastic members 30 may also be arranged around the leg openings of the article. Ultrasonic welds, glue strings or the like, join the elastic laminate 20 to the elasticized nonwoven in the waist region 18.

35

No additional elasticized side panels joining the front and back regions 12 and 14 are needed when using the elastic laminate 20 according to the invention. If desired, additional elasticized side panels may of course be provided, especially in cases where the elastic laminate 20 is arranged only in parts of the front and/or back regions.

5

The elastic laminate should have a puncture resistance of at least 15N as measured according to ASTM Designation D3763-02. Preferably, the elastic laminate of the present invention has a puncture resistance of at least 20N, and more preferably at least 30N.

10

The elastic laminate should preferably have a softness according to Kawabata of at least 20, preferably at least 30 and most preferably at least 40.

15

It is further desired that it has a formability according to Kawabata of no more than 50, preferably no more than 30, more preferably no more than 20 and most preferably no more than 10.

20

It is also desired that the elastic laminate has a drapability according to Kawabata of no more than 40.

Description of test methods

Opacity

The opacity of the elastic web material is measured according to a slightly modified version of SS-ISO 2471:1998 by the Swedish Standard Institute (Diffuse Reflectance Method). The method is originally intended for measuring the opacity for paper sheets, but it also functions well for measuring the opacity of other types of sheet materials, such as elastic laminates according to this invention. The opacity is measured in an unstretched condition of the elastic web material. The principle of the test method is to measure the Single-Sheet Luminous Reflectance Factor, R_0 , through a single sheet against a standardized black backing and the Intrinsic Luminous Reflectance Factor, R_∞ , against a completely opaque white backing. The opacity (%) is calculated from the formula $100 \cdot R_0 / R_\infty$.

35

The following modifications of the test method were made:

- i) When measuring the Single-Sheet Luminous Reflectance Factor, R_0 , a black velvet fabric was used as backing.

- ii) When measuring the Intrinsic Luminous Reflectance Factor, R_{∞} , the measurement was made on one single sheet of the elastic laminate against a white tile as backing.
- 5 iii) The CIE illuminant D65 (10°) was used instead of the CIE illuminant C (2°).

The measured opacity values are mean values from five measurements.

Puncture strength

- 10 Puncture strength is measured according to ASTM Designation D3763-02. From penetration Impact-type tests, this method produces data of load versus displacement. The maximum load is calculated for each laminate.

Tensile strength (Reference: ASTM D 882)

- 15 The method measures tensile strength and elongation of different elastic materials. The tensile strength and elongation of a well-defined test piece is tested by means of a tensile tester.

Apparatus: Instron 4301

- 20
- Tensile tester connected to a computer
 - Crosshead speed: 500mm/min
 - Clamp distance: 50mm

- 25 Sample preparation: Test samples are cut from the entire width of the material. The width of the sample shall be 25.4mm and the length at least 50mm longer than the clamp distance if possible. It is of importance that the edges of the sample are even and without break notches. The samples are conditioned for at least 4h in 50%RH $\pm$ 5% RH and 23°C $\pm$ 2°C before testing.

- 30 Procedure: The tensile tester is calibrated according to the apparatus instructions and set to zero. The sample is mounted and it is ensured that it is not obliquely or unevenly fastened. The material is prevented from slipping by using clamps covered with galloon or similar material. The tensile tester is started, and stopped after the material has broken (if not automatically controlled). Measurements resulting from
- 35 premature failures (i.e. the sample breaks at the clamp, or is damaged during preparation) are ignored if possible.

The following results are expressed by the tensile tester/computer:

- Maximum force, N/25.4mm
- Elongation at maximum force, %
- Break force, N/25.4mm
- 5 - Elongation at break force, %
- Knee point, N/%

Elasticity test

10 The method measures how an elastic material behaves at repeated load and unload cycles. The sample is stretched to a predetermined elongation and a cyclic movement between 0 and said predetermined elongation is performed. Desired load and unload forces are recorded. The permanent, i.e. remaining, elongation of the relaxed material is measured.

15 A tensile tester, Lloyd LRX, able to perform cyclic movements and equipped with a printer/plotter or software presentation is used. The sample is prepared by cutting it to a width of 25 mm and a length that is preferably 20 mm longer than the distance between the clamps in the tensile tester.

20 The tensile tester is calibrated according to the apparatus instructions. The parameters needed for the test (load and unload forces) are adjusted to:

- Crosshead speed: 500 mm/min
- Clamp distance: 50 mm
- Preload: 0.05 N

25 The sample is placed in the clamps according to the marks and it is made sure that the sample is centred and fastened perpendicularly in the clamps. The tensile tester is started and three cycles between 0 and the predetermined elongation, equal to the highest defined 1st load, are performed. Before the last cycle, the sample is relaxed for

30 1 minute, then the permanent elongation is measured by stretching the sample until a force of 0.1 N is detected and the elongation is read.

The permanent elongation after relaxation should be less than 10% and is measured by the method above. Thus an elasticity of 30% is defined as that the laminate should

35 have a permanent relaxation after elongation of less than 10% after being exerted to an elongation of 30% in the tensile tester above. An elongation of 30% means an elongation to a length that is 30% longer than the initial length of the sample.

Kawabata tests

The Kawabata KES-FB test is a Japanese quality judgment system for used for textile materials and is disclosed in "The Standardization and Analysis of Hand Evaluation (2nd Edition), Sueo Kawabata, July 1980, The Hand Evaluation and Standardization Committee, The Textile Machinery Society of Japan". The test used in this invention uses two of the Kawabata testing machines, KES-FB2 for measuring Bending rigidity, B (gf·cm²/cm), and KES-FB1 for measuring Shear stiffness, G (gf/cm·degree) and Tensile strain, EMT (%).

10

Bending rigidity (B) KES-FB2

The slope was measured between 0.5 cm⁻¹ and 1.5 cm⁻¹ and -0,5 cm⁻¹ and -1,5 cm⁻¹. The measurements were performed in both directions (MD and CD) with the following settings:

15

Total sample area: 20 x 20 cm;
Maximum curvature: Kmax=±2,5 cm⁻¹;
Bending rate: 0.5 cm⁻¹/sec;
Sample effective dimension: 20 cm length and 1 cm width;
Bending deformation is applied to the width direction.

20

Shear stiffness (G) KES-FB1

The slope was measured between 0.5 cm⁻¹ and 2.5 cm⁻¹ and -0,5 cm⁻¹ and -2,5 cm⁻¹. The measurements were performed in both directions (MD and CD) with the following settings:

25

Total sample area: 20 x 20 cm;
Tension of specimen: W= W=10gf/cm;
Maximum shear angle: φ=±8°.
Sample effective dimension: 20 cm width and 5 cm length;
Shear deformation is applied to the width direction.

30

Tensile strain (EMT)

The measurements were performed in both directions (MD and CD) with the following settings:

35

Total sample area: 20 x 20 cm;
Maximum load: Fm= 500 gf/cm;
Tensile speed: 0.2 mm/sec.
Sample effective dimension: 20 cm width and 2.5 cm length;

Tensile deformation is applied to the length direction.
Elongation sens 50 mm/10V.

Softness (S)

5 The Softness (S) according to Kawabata is obtained from the formula:

$$S = \sqrt{EMT/B}$$

Formability (F)

The Formability (F) according to Kawabata is obtained from the formula:

10 $F = B \cdot EMT.$

Drapability (D)

The Drapability (D) according to Kawabata is obtained from the formula:

15 $D = 116 + 25 \cdot \log(B \cdot G/W),$ wherein W is the basis weight of the sample.

Examples

Opacity

The opacity of an elastic laminate sample was measured. The sample was an elastic laminate according to the invention comprising an inner apertured three-layer elastic film of PE-SEBS-PE, basis weight 36 g/m² and two outer layers of spunbond material, PP (polypropylene), each having a basis weight of 22 g/m². The laminate is produced by a modified version of the method disclosed in WO 03/04788 and which is described above, wherein one spunbond layer is applied to the film in a tacky state and will thus bond to the film layer, while the other spunbond layer is adhesively laminated to the film layer using for example a pressure sensitive hot melt adhesive (glue amount 3 g/m²). The laminate is incrementally stretched, at which the non-elastic spunbond layers are stretched to a point below the elongation at maximum load to retain some strength in the spunbond layers. The elasticity of the laminate after stretching is close to the elasticity of the elastic film layer.

30 The above-mentioned basis weights of the layers refer to the finished laminate after stretching. Before stretching the basis weight of the individual layers were: inner film layer 40 g/m², outer spunbond layers 25 g/m² each and glue layer 3 g/m². Since it is difficult to measure the basis weights of the individual layers after lamination and stretching an approximation has been made from the basis weights of the layers before lamination and stretching. The laminate before stretching had a total basis

weight before stretching of 93 g/m² and after stretching it had a basis weight of 85 g/m², which means a deformation of about 10%. It is then assumed that the deformation of the individual fibrous layers and the film layer is the same, i.e. about 10%.

5

The inner film layer contained 4.9% by weight filler in the form of TiO₂. The open area of the film layer was 13%.

The opacity of the laminate was about 68%.

10

An opacity value of at least 40% is acceptable in order to provide the desired cloth-like appearance of the pant diaper disclosed above, which in considerable areas of the chassis contains the elastic laminate as the sole component. Preferably the opacity should be at least 50%, more preferably at least 60%.

15

It is further desired, for example for cost reasons, to have a low basis weight of the elastic laminate. The basis weight should be 100 g/m² or lower. The ratio Opacity/Basis Weight is therefore also an aspect of this invention. Preferably this ratio should be at least 0.4, more preferably at least 0.5 and most preferably at least 0.6, wherein opacity is measured in % and the basis weight is measured in g/m².

20

Puncture resistance

The puncture resistance of three different samples (A, B and C) were measured according to ASTM Designation D3763-02 and are shown in Table 1.

25

Tensile strength

The puncture resistance of three different samples (A, B and C) were measured according to the method given above and are shown in Table 1.

30 *Elasticity*

The elasticity of three different samples (A, B and C) were measured according to the method given above and are shown in Table 1.

35 Sample A is an elastic laminate according to WO03/047488 with 15gsm PP spunbond nonwoven on both sides of a 40gsm elastic film. The used spunbond nonwoven has an elongation at maximum load of 60%, which is less than the elasticity of the

laminate. The low puncture resistance of this material means that it falls outside the scope of the present invention.

Sample B is an elastic laminate with 25gsm PP/PE spunbond nonwoven on both sides
5 of a 36gsm elastic film.

Sample C is an elastic laminate with one layer of 25gsm PP/PE nonwoven and one layer of 20gsm PP/PE nonwoven on opposite sides of a 36gsm elastic film.

Table 1

10

	Sample A	Sample B	Sample C
Puncture force (N)	12.8	49.5	40.6
Basis weight (gsm)	78.66	87.96	82.71
Tensile strength and Elongation			
MD (machine direction)			
Tensile strength at Peak (MD), N/25mm	8.29	25.3	28.03
Elongation at break, %	269.82	311.94	691.47
Elongation at Peak / Deformation, %	136	111.44	109.28
CD (cross direction)			
Tensile strength at Peak (CD), N/25mm	11.72	11.15	9.16
Elongation at break, %	792.87	768.19	160.15
Elongation at Peak / Deformation, %	74.88	124.82	134.42
Determination of load & unload forces and permanent elongation			
Tensile strength at 80% elongation (1 st cycle)	2.78	7.11	10.66
Permanent Elongation (3 rd cycle)	7.86	7.52	8.09
3rd Retraction Forces			
At 80%, N/25mm	1.14	1.44	1.42
At 60%, N/25mm	0.82	0.85	0.8
At 40%, N/25mm	0.54	0.53	0.48

Kawabata tests

5 Four different samples were measured in a Kawabata test with respect to Bending rigidity (B), Shear stiffness (G) and Tensile strain (EMT). From these measured values the Softness (S), Formability (F) and Drapability (D) were calculated.

The four samples were:

10 *Sample laminate (SL)*: an elastomeric laminate according to the invention comprising an inner apertured three-layer elastomeric film of PE-SEBS-PE, basis weight 36 g/m² and two outer layers of spunbond material, PP (polypropylene), each having a basis weight of 22 g/m². The laminate is produced by a modified version of the method
15 disclosed in WO 03/04788 and which is described above, wherein one spunbond layer is applied to the film in a tacky state and will thus bond to the film layer, while the other spunbond layer is adhesively laminated to the film layer using for example a pressure sensitive hot melt adhesive (glue amount 3 g/m²). The laminate is incrementally stretched, at which the non-elastic spunbond layers are stretched to a
20 point below the elongation at maximum load to retain some strength in the spunbond layers. The elasticity of the laminate after stretching is close to the elasticity of the elastomeric film layer.

The above-mentioned basis weights of the layers refer to the finished laminate after
25 stretching. Before stretching the basis weight of the individual layers were: inner film layer 40 g/m², outer spunbond layers 25 g/m² each and glue layer 3 g/m². Since it is difficult to measure the basis weights of the individual layers after lamination and stretching an approximation has been made from the basis weights of the layers before lamination and stretching. The laminate before stretching had a total basis
30 weight before stretching of 93 g/m² and after stretching it had a basis weight of 85 g/m², which means a deformation of about 10%. It is then assumed that the deformation of the individual fibrous layers and the film layer is the same, i.e. about 10%.

35 *Ref. 1*: Cotton-knitted goods, so called jersey with elastomeric threads.

Ref. 2: Outer coversheet of Tena Discreet incontinence pant (odour control, size medium) produced by SCA Hygiene Products AB. The outer coversheet comprises two layers of nonwoven with parallel elastic threads there between, which wrinkle the material.

5

Ref. 3: Outer coversheet material of Poise normal super incontinence pant produced by Kimberly-Clark. The outer coversheet comprises two layers of nonwoven with parallel elastic threads there between which wrinkle the material.

10 A climate conditioning of the materials were performed at 20°C and 65% RH for 48 hours. For the pant products, the absorbent core was removed and the outer coversheet was stretched over a knitwear measuring device for 24 hours and was then allowed to relax in the same climate during 24 hours.

15 The sizes of the samples were 10 x 10 cm.
All tests were made on three samples and in two material directions (machine direction, MD, and cross direction, CD).

The following results were obtained.

20

Table 2

Sample	B, Bending rigidity (gf·cm ² /cm)			G, Shear stiffness (gf/cm·degree)			EMT, Tensile strain (%)		
	MD	CD	Mean	MD	CD	Mean	MD	CD	Mean
SL	0.095	0.022	0.059	1.46	1.38	1.42	208.4	92.0	150.2
Ref. 1	0.03	0.03	0.03	0.58	0.64	0.61	160.6	173.2	166.9
Ref. 2	1.05	0.09	0.57	0.87	0.68	0.77	23.9	211.7	117.8
Ref. 3	1.53	0.04	0.78	1.74	1.21	1.47	26.28	195.3	110.8

25 From these results the Softness (S), the Drapability (D) and the Formability (F) according to Kawabata were calculated according to the formulas stated above. These results are stated in Table 3 below.

Table 3

Sample	Softness (S) $\sqrt{EMT/B}$	Drapability (D) $116+25 \log(B \cdot G/W)$	Formability (F) B·EMT	Basis Weight (W) g/m ²
SL	50	40	9	88
Ref. 1	75	13	5	231
Ref. 2	14	45	67	160
Ref. 3	12	51	87	133

The results should be interpreted in the following way:

- Softness (S): a higher value indicates a softer material.
- Drapability (D): a higher value indicates a stiffer material.
- 5 Formability (F): a higher value indicates that the material is less formable.

10 The test laminate according to the invention has a Softness (S) and a Formability (F) according to Kawabata which is close to cotton-knitted goods (Ref. 1). Also the Drapability (D) according to Kawabata is closer to the cotton-knitted reference material than the other two tested materials. Thus the use of the elastomeric laminate provides a pant article having a cloth-like feeling close to a cotton material. The pant will also have an excellent comfort and fit to the wearer's body. By using the elastomeric laminate only in those parts of the pant in which the properties of the material is best utilized, a very economic utilization of the material is accomplished.

15 It is preferred that the laminate has a Softness (S) according to Kawabata of at least 20, more preferably at least 30 and most preferably at least 40. It is also preferred that the laminate has a Formability (F) according to Kawabata of no more than 50, preferably no more than 30, more preferably no more than 20 and most preferably no more than 10. It is also preferred that the laminate has a Drapability (D) according to Kawabata of no more than 40.

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. Pant-type underwear article, comprising front, back, crotch and waist regions, said article having a longitudinal and a transverse direction, at least part of the article comprising an elastic laminate composed of first and second layers of fibrous material and an elastic film layer located between said first and second fibrous layers, wherein
5 said elastic laminate has a puncture resistance of at least 15N, and wherein the pant type underwear article does not contain an absorbent core.
2. The article as claimed in claim 1, characterized in that the elastic laminate has a puncture resistance of at least 20N, more preferably at least 30N.
- 10 3. The article as claimed in any one of the preceding claims, characterized in that at least the front region of the article comprises the elastic laminate.
4. The article as claimed in any one of the preceding claims, characterized in that both the front and back regions of the article comprise the elastic laminate.
5. The article as claimed in any one of the preceding claims, characterized in that a
15 substantial part of the crotch region of the article is free from said elastic laminate.
6. The article as claimed in any one of the preceding claims, characterized in that the waist region of the article is free from said elastic laminate.
7. The article as claimed in any one of claims 1-4, characterized in that the entire article comprises the elastic laminate.
- 20 8. The article as claimed in any one of the preceding claims, characterized in that said elastic film layer is breathable.
9. The article as claimed in claim 8, characterized in that said elastic laminate has a Water Vapour Transmission Rate according to ASTM E96-00 Procedure D of at least 1500 g/m² 24h, preferably at least 3000 g/m² 24h.
- 25 10. The article as claimed in any one of the preceding claims, characterized in that said elastic laminate has an elasticity in the transverse direction of the article of at least

30%, preferably at least 50%, more preferably 70%, when measured according to the elasticity test specified in the description.

11. The article as claimed in any one of the preceding claims, characterized in that at least one of the layers of fibrous material has an elongation at maximum load greater than the elasticity of the elastic laminate.

12. The article as claimed in any one of the preceding claims, characterized in that both layers of fibrous material have an elongation at maximum load greater than the elasticity of the elastic laminate.

13. The article as claimed in any one of the preceding claims, characterized in that the layers of fibrous material have an elongation at maximum load of at least 10%, preferably at least 20%, greater than the elasticity of the elastic laminate.

14. The article as claimed in any one of the preceding claims, characterized in that the first and/or the second layers of fibrous material comprise a mixture of polypropylene and polyethylene polymers.

15. The article as claimed in any one of the preceding claims, characterized in that said elastic laminate comprises first and second fibrous layers of spunbond material, each having a basis weight of between 10 and 35 g/m², preferably between 12 and 30 g/m², more preferably between 15 and 25 g/m², and a breathable elastic film layer having a basis weight between 20 and 100 g/m², preferably between 20 and 60 g/m², said elastic laminate having a Water Vapour Transmission Rate according to ASTM E96-00 Procedure D of at least 1500 g/m² 24h, preferably at least 3000 g/m² 24h.

16. A pant type underwear article, comprising front, back, crotch and waist regions, said article having a longitudinal direction and a transverse direction, at least part of the article comprising an elastic laminate composed of first and second layers of fibrous material and an elastic film layer located between said first and second fibrous layers, wherein said elastic laminate has a puncture resistance of at least 15N, wherein at least one of the layers of fibrous material has an elongation at maximum load greater than an elasticity of the elastic laminate, and wherein the pant underwear article is reusable after washing.

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17. A pant-type underwear article substantially as hereinbefore described with reference to the examples.

SCA HYGIENE PRODUCTS AB

WATERMARK PATENT & TRADE MARK ATTORNEYS

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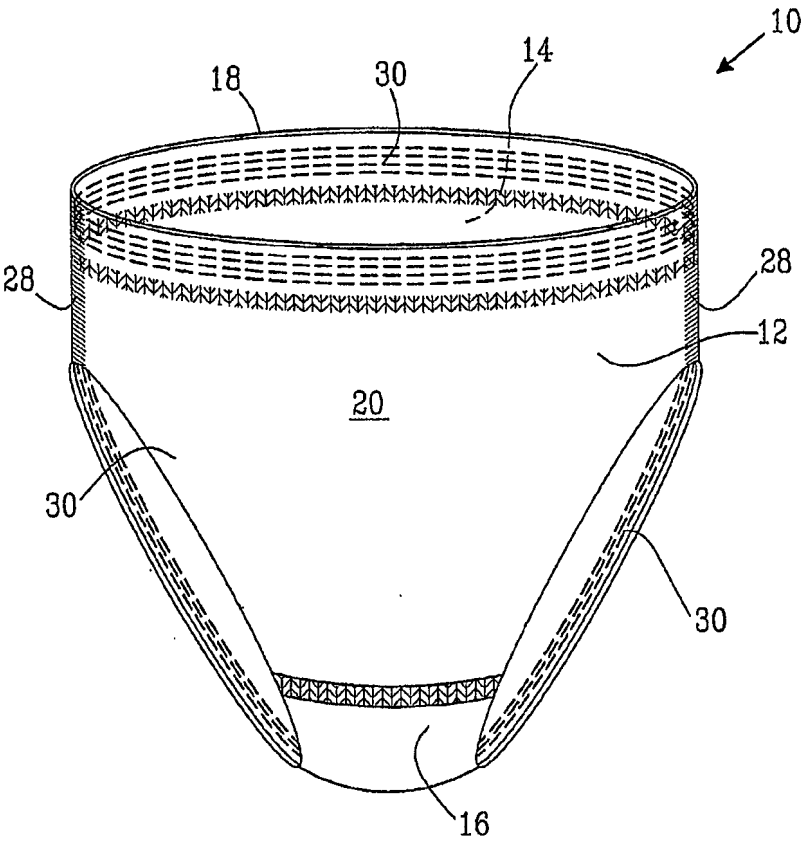


Fig.1

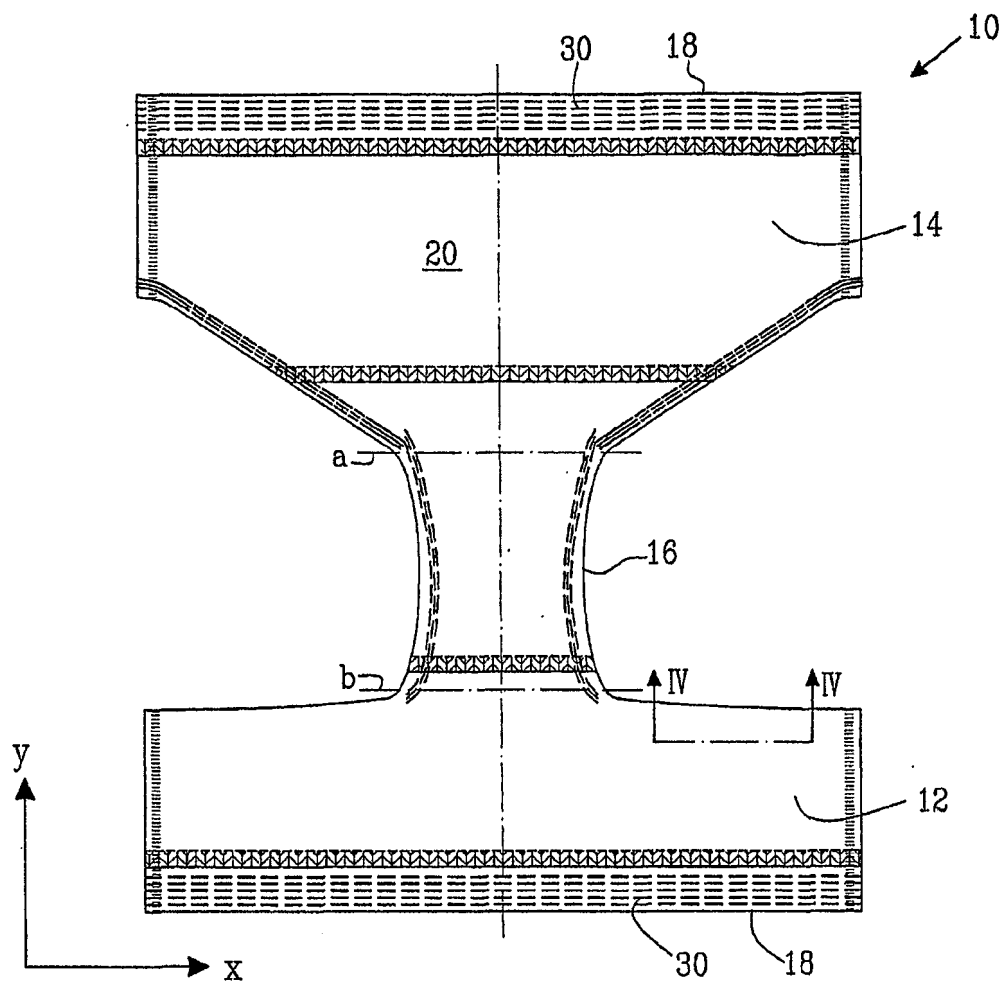


Fig. 2

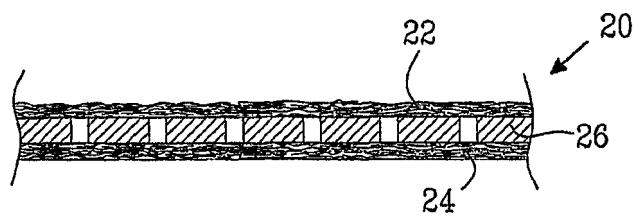


Fig. 3

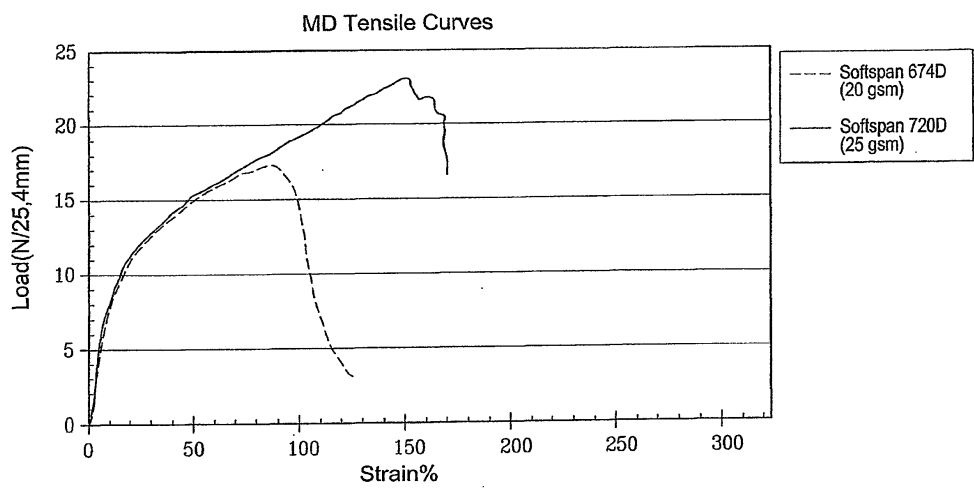


Fig.4

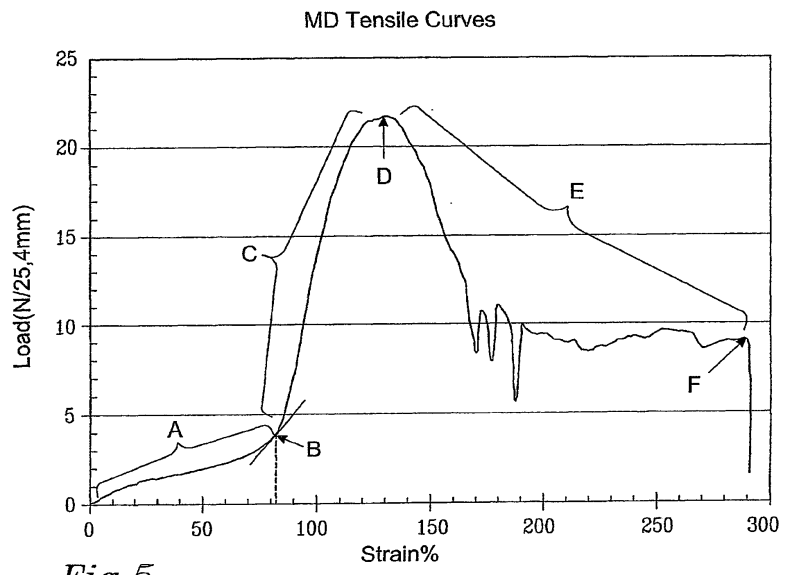


Fig.5



发明专利证书

Certificate of Invention Patent

中华人民共和国国家知识产权局

STATE INTELLECTUAL PROPERTY OFFICE OF THE PEOPLE'S REPUBLIC OF CHINA

证书号第 869085 号



发明专利证书

发明名称：包括弹性层压材料的内裤制品

发明人：M·梅兰德

专利号：ZL 2005 8 0048328.X

专利申请日：2005 年 03 月 02 日

专利权人：SCA 卫生产品股份公司

授权公告日：2011 年 11 月 23 日

本发明经过本局依照中华人民共和国专利法进行审查，决定授予专利权，颁发本证书并在专利登记簿上予以登记。专利权自授权公告之日起生效。

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Claims

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1. Pant-type underwear article (10), comprising front (12), back (14), crotch (16) and waist (18) regions, said article (10) having a longitudinal (y) and a transverse direction (x), at least part of the article (10) comprising an elastic laminate (20) composed of first (22) and second (24) layers of fibrous material and an elastic film layer (26) located between said first and second fibrous layers (22; 24),
characterized in that
said elastic laminate (20) has a puncture resistance of at least 15N and said first (22) and second layers (24) of fibrous material contribute to the puncture resistance of the laminate.
2. The article as claimed in claim 1,
characterized in
that the elastic laminate (20) has a puncture resistance of at least 20N.
3. The article as claimed in claim 1,
characterized in
that the elastic laminate (20) has a puncture resistance of at least 30N.
4. The article as claimed in claim 1,
characterized in
that at least the front region (12) of the article comprises the elastic laminate (20).
5. The article as claimed in claim 1,
characterized in
that both the front and back regions (12;14) of the article comprise the elastic laminate (20).
6. The article as claimed in claim 1,
characterized in
that at least 50% of the crotch region (16) of the article is free from said
elastic laminate.
7. The article as claimed in claim 1,
- Deleted: , more preferably at least 30N
- Deleted: any of the preceding claims
- Deleted: any of the preceding claims
- Deleted: any of the preceding claims
- Deleted: a substantial part
- Deleted: any of the preceding claims

characterized in
that the waist region (18) of the article is free from said elastic laminate.

- 5 | 8. The article as claimed in claim 1,
characterized in
that the entire article (10) comprises the elastic laminate (20).

Deleted: any of claims 1-4
- 10 | 9. The article as claimed in claim 1,
characterized in
that said elastic film layer (26) is breathable.

Deleted: any of the preceding claims
- 15 | 10. The article as claimed in claim 9,
characterized in
that said elastic laminate (20) has a Water Vapour Transmission Rate
according to ASTM E96-00 Procedure D of at least 1500 g/(m² 24h).

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Deleted: , preferably at least 3000 g/m² 24h
- 20 | 11. The article as claimed in claim 1,
characterized in
that said elastic laminate (20) has an elasticity in the transverse direction of
the article of at least 30% when measured with an elasticity test method
utilizing three tensile cycles, stretching a sample between 0 and 30%
elongation, thereafter relaxing the sample for 1 minute and measuring a
permanent elongation after stretching the sample until a force of 0.1N is
recorded, the elasticity test is passed if the permanent elongation is less than
25 | 10% compared to the length of said sample before said three cycles.

Deleted: any of the preceding claims

Deleted: , preferably at least 50%, more preferably 70%, when measured according to the elasticity test specified in the description
- 30 | 12. The article as claimed in claim 1,
characterized in
that said elastic laminate (20) has an elasticity in the transverse direction of
the article of at least 50% when measured with an elasticity test method
utilizing three tensile cycles, stretching a sample between 0 and 50%
elongation, thereafter relaxing the sample for 1 minute and measuring a
permanent elongation after stretching the sample until a force of 0.1N is
35 | recorded, the elasticity test is passed if the permanent elongation is less than
10% compared to the length of said sample before said three cycles.
13. The article as claimed in claim 1,

5 | characterized in
that said elastic laminate (20) has an elasticity in the transverse direction of
the article of at least 70% when measured with an elasticity test method
utilizing three tensile cycles, stretching a sample between 0 and 70%
elongation, thereafter relaxing the sample for 1 minute and measuring a
permanent elongation after stretching the sample until a force of 0.1N is
recorded, the elasticity test is passed if the permanent elongation is less than
10% compared to the length of said sample before said three cycles.

10 | 14. The article as claimed in claim 1,
characterized in
that at least one of the layers of fibrous material (22, 24) has an elongation at
maximum load greater than the elasticity of the elastic laminate (20).

Deleted: any of the preceding claims

15 | 15. The article as claimed in claim 1,
characterized in
that both layers of fibrous material (22, 24) have an elongation at maximum
load greater than the elasticity of the elastic laminate (20).

Deleted: any of the preceding claims

20 | 16. The article as claimed in claim 1,
characterized in
that the layers of fibrous material (22, 24) have an elongation at maximum
load of at least 10% greater than the elasticity of the elastic laminate (20).

Deleted: any of the preceding claims

Deleted: , preferably at least 20%

25 | 17. The article as claimed in claim 1,
characterized in
that the layers of fibrous material (22, 24) have an elongation at maximum
load of at least 20% greater than the elasticity of the elastic laminate (20).

30 | 18. The article as claimed in claim 1,
characterized in
that the first and/or the second layers of fibrous material (22, 24) comprise a
mixture of polypropylene and polyethylene polymers.

Deleted: any of the preceding claims

35 | 19. The article as claimed in claim 1,
characterized in

Deleted: any of the preceding claims

5 that said elastic laminate (20) comprises first and second fibrous layers (22, 24) of spunbond material, each having a basis weight of between 10 and 35 g/m² and a breathable elastic film layer (26) having a basis weight between 20 and 100 g/m², said elastic laminate (20) having a Water Vapour Transmission Rate according to ASTM E96-00 Procedure D of at least 1500 g/(m² 24h).

Deleted: , preferably between 12 and 30 g/m², more preferably between 15 and 25 g/m²
Deleted: preferably between 20 and 60 g/m²,
Deleted: , preferably at least 3000 g/m² 24h

10 20. The article as claimed in claim 1,
characterized in
that said elastic laminate (20) comprises first and second fibrous layers (22, 24) of spunbond material, each having a basis weight of between 12 and 30 g/m² and a breathable elastic film layer (26) having a basis weight between 20 and 100 g/m², said elastic laminate (20) having a Water Vapour Transmission Rate according to ASTM E96-00 Procedure D of at least 1500 g/(m² 24h).

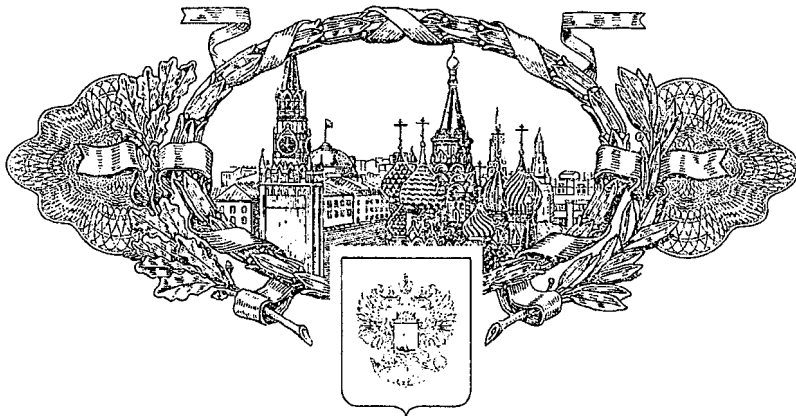
15 21. The article as claimed in claim 1,
characterized in
that said elastic laminate (20) comprises first and second fibrous layers (22, 24) of spunbond material, each having a basis weight of between 15 and 25 g/m² and a breathable elastic film layer (26) having a basis weight between 20 and 100 g/m², said elastic laminate (20) having a Water Vapour Transmission Rate according to ASTM E96-00 Procedure D of at least 1500 g/(m² 24h).

20 22. The article as claimed in claim 1,
characterized in
that said elastic laminate (20) comprises first and second fibrous layers (22, 24) of spunbond material, each having a basis weight of between 10 and 35 g/m² and a breathable elastic film layer (26) having a basis weight between 20 and 60 g/m², said elastic laminate (20) having a Water Vapour Transmission Rate according to ASTM E96-00 Procedure D of at least 1500 g/(m² 24h).

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РОССИЙСКАЯ ФЕДЕРАЦИЯ



ПАТЕНТ

НА ИЗОБРЕТЕНИЕ

№ 2358704

ИЗДЕЛИЕ В ВИДЕ ПРЕДМЕТА НИЖНЕГО БЕЛЬЯ,
СОДЕРЖАЩЕЕ ЭЛАСТИЧНЫЙ ЛАМИНАТ

Патентообладатель(ли): **СКА ХАЙДЖИН ПРОДАКТС АБ (SE)**

Автор(ы): **МЕЛАНДЕР Магнус (SE)**

Заявка № 2007136282

Приоритет изобретения 02 марта 2005 г.

Зарегистрировано в Государственном реестре
изобретений Российской Федерации 20 июня 2009 г.

Срок действия патента истекает 02 марта 2025 г.

Руководитель Федеральной службы по интеллектуальной
собственности, патентам и товарным знакам

Б.П. Симонов

РОССИЙСКАЯ ФЕДЕРАЦИЯ



ФЕДЕРАЛЬНАЯ СЛУЖБА
ПО ИНТЕЛЛЕКТУАЛЬНОЙ СОБСТВЕННОСТИ,
ПАТЕНТАМ И ТОВАРНЫМ ЗНАКАМ

(19) **RU** ⁽¹¹⁾ **2 358 704** ⁽¹³⁾ **C1**

(51) МПК
A61F 13/496 (2006.01)
A61F 13/15 (2006.01)

(12) ОПИСАНИЕ ИЗОБРЕТЕНИЯ К ПАТЕНТУ

(21), (22) Заявка: 2007136282/14, 02.03.2005

(24) Дата начала отсчета срока действия патента:
02.03.2005

(45) Опубликовано: 20.06.2009 Бюл. № 17

(56) Список документов, цитированных в отчете о
поиске: WO 01/459927 A1, 28.06.2001. SU 965339 A3,
07.10.1982. RU 2008774 C1, 15.03.1994. RU
2221531 C2, 20.01.2003. US 2003/022582 A,
30.01.2003. US 5921973 A, 13.07.1999. WO
03/047488 A1, 12.06.2003.

(85) Дата перевода заявки РСТ на национальную
фазу: 02.10.2007

(86) Заявка РСТ:
SE 2005/000318 (02.03.2005)

(87) Публикация РСТ:
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Адрес для переписки:
129090, Москва, ул. Б.Спасская, 25,
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С.А.Абубакирову, рег.№ 931

(72) Автор(ы):

МЕЛАНДЕР Магнус (SE)

(73) Патентообладатель(и):

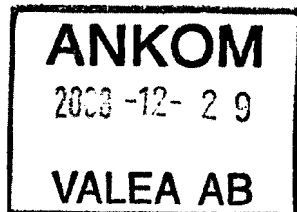
СКА ХАЙДЖИН ПРОДАКТС АБ (SE)

(54) ИЗДЕЛИЕ В ВИДЕ ПРЕДМЕТА НИЖНЕГО БЕЛЬЯ, СОДЕРЖАЩЕЕ ЭЛАСТИЧНЫЙ
ЛАМИНАТ

(57) Реферат:

Изобретение относится к медицине.
Изделие (10) в виде предмета нижнего белья
типа трусов содержит переднюю (12),
заднюю (14), ластовичную (16) области и
область талии (18). Указанное изделие (10)
имеет продольное (y) и поперечное (x)
направленис. По меньшей мере, часть
изделия (10) содержит эластичный ламинат (20),
образованный из первого (22) и второго (24)

слоев волокнистого материала и слоя
эластичной пленки (26), расположенной между
указанным первым и вторым волокнистыми
слоями (22; 24). Указанный ламинат (20) имеет
сопротивление проколу, по меньшей мере, 15 Н.
Изобретение обеспечивает возможность
надевать и снимать изделие без прокола,
например, ногтями на руках. 14 з.п. ф-лы, 5
ил., 3 табл.



**GORODISSKY
& PARTNERS
PATENT AND
TRADEMARK
ATTORNEYS
IP LAWYERS**

[since 1959]

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PHONE: 7 (495) 937 6116 / 6109
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E-MAIL: PAT@GORODISSKY.RU
WWW.GORODISSKY.COM

VALEA AB
LINDHOLMSPIREN 5
SE-417 56 GOTHENBURG
SWEDEN
ATTN: Mr. Edward Farrington

1/2-09

VIA DHL 5/1/09

Date: 19 December 2008

YourRef: P17123RU00
OurRef: 2413-145245RU/541
Country: RUSSIA
App/No: 2007136282
PatNo:

In the name of:
SCA HYGIENE PRODUCTS AB

Dear Sirs,

We are glad to announce that an Official Decision of Grant has been issued in respect of the above application and received from the Patent Office of the Russian Federation on **01 December 2008**.

With reference to the enclosed Official Decision of Grant along with the claims as accepted by the Examiner we wish to inform you of the following.

The patent claims were allowed substantially as originally filed with the Russian Patent Office with the corrected dependency of the dependent claims (see our letter of November 1, 2007).

Hence the specification and the drawings will be published as originally filed with the Russian Patent Office.

May we remind you that any divisional application should be filed before registration of a patent in the State Patent Register. Such registration normally takes place within about two months upon payment of issuance fees. Therefore if you wish to file a divisional application please let us know urgently, since no extension or postponement of the registration date is possible.

The Examiner cited several relevant documents in the Decision of Grant under index (56). In case you wish us to order copies of any of these documents please let us know.

Please be informed that in accordance with article 1393 (2), chapter 4 of the Civil Code the payment of Grant and Renewal fees should be effected within two months from above date, that is not later than **01 February 2009**.

"Gorodissky and Partners" wishes you a
Merry Christmas and happy New Year!

MOSCOW, ST.PETERSBURG,
N.NOVGOROD, KRASNODAR,
SAMARA, EKATERINBURG,
KAZAN, KIEV



SE00059

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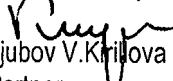
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The Grant fee amounts to **400 US\$**, our fee is **200 US\$**. The Renewal fees payable from the third year of patent duration should be paid for the period from **02 March 2007** till **02 March 2010** in the amount of **350 US\$**, our fee is **190 US\$**.

Please bear in mind that if the fees are not paid before the above date the payment in question is possible within six months from said date but with a fine of 50%.

We look forward to your consent to payment of the fees by **18 January 2009**.

Yours sincerely,


Ljubov V. Krilova
Partner
Patent Attorney

by Galina V. Zolina
Patent Attorney

Encl.: ☒ Decision of Grant
 ☒ Translation
 ☒ Invoice

MOSCOW, ST.PETERSBURG,
N.NOVGOROD, KRASNODAR,
SAMARA, EKATERINBURG,
KAZAN, KIEV

56
49

Your reference: P17123RU00
Our reference: 2413-145245RU/541
Application No.: 2007136282
Attorney Name: Galina V. Zolina



TRANSLATION

DECISION ON GRANT
PATENT FOR INVENTION

(21) Application № 2007136282/14(039689).				(22) Date of filing the application 02 March 2005			
(24) Date from which industrial property rights may have effect 02 March 2005							
(85) Date of commencement of the national phase 02 October 2007							
PRIORITY IS FIXED ON DATE							
☐ (22) Date of filing the application 02 March 2005							
☐ (23) Date of filing of additional materials of to the earlier application №							
☐ (62) ☐ priority date of the application № of from which the present application has been divided up							
☐ ☐ filing date of the application № of from which the present application has been divided up							
☐ (66) Filing date of the earlier application №							
☐ (30) Data relating to priority under the Paris Convention							
(31) Number assigned to priority application		(32) Date of filing priority application		(33) Country code		Claim	
(86) PCT Application number and date SE2005/000318 of 02 March 2005.							
(87) PCT Publication number and date WO2006/093443 of 08 September 2006.							
(72) Inventor(s) MELANDER, Magnus, SE							
(73) Assignee(s) SCA HYGIENE PRODUCTS AB SE-405 03 Goeteborg Sweden, SE							
(54) Title UNDERWEAR ARTICLE COMPRISING AN ELASTIC LAMINATE							

The Examination department basing on the results of substantive examination of the patent application conducted in respect to

☒ originally filed claims ☐ claims amended by the applicant

has revealed their concordance to the requirements of patentability set forth by Articles 1349 and 1350 of the Civil Code of the Russian Federation and decided to grant the Patent of the Russian Federation for the following claims given on page 3:



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Your reference: P17123RU00
Our reference: 2413-145245RU/541
Application No.: 2007136282
Attorney Name: Galina V. Zolina

Decision on Grant

Page 2 of 3

(21) 2007136282/14

(51) IPC

A61F 13/496 (2006.01)

A61F 13/15 (2006.01)

(57)

1. Pant-type underwear article (10), comprising front (12), back (14), crotch (16) and waist (18) regions, said article (10) having a longitudinal (y) and a transverse direction (x), at least part of the article (10) comprising an elastic laminate (20) composed of first (22) and second (24) layers of fibrous material and an elastic film layer (26) located between said first and second fibrous layers (22; 24), characterized in that said elastic laminate (20) has a puncture resistance of at least 15N.

2. The article as claimed in claim 1, characterized in that the elastic laminate (20) has a puncture resistance of at least 20N, more preferably at least 30N.

3. The article as claimed in claim 1, characterized in that at least the front region (12) of the article comprises the elastic laminate (20).

4. The article as claimed in claim 1, characterized in that both the front and back regions (12; 14) of the article comprise the elastic laminate (20).

5. The article as claimed in claim 1, characterized in that a substantial part of the crotch region (16) of the article is free from said elastic laminate.

6. The article as claimed in claim 1, characterized in that the waist region (18) of the article is free from said elastic laminate.

7. The article as claimed in any of claims 1-4, characterized in that the entire article (10) comprises the elastic laminate (20).

8. The article as claimed in claim 1, characterized in that said elastic film layer (26) is breathable.

9. The article as claimed in claim 8, characterized in that said elastic laminate (20) has a Water Vapour Transmission Rate according to ASTM E96-00 Procedure D of at least 1500 g/m² 24h, preferably at least 3000 g/m² 24h.

10. The article as claimed in claim 1, characterized in that said elastic laminate (20) has elasticity in the transverse direction of the article of at least 30%, preferably at least 50%, more preferably 70%, when measured according to the elasticity test specified in the description.

11. The article as claimed in claim 1, characterized in that at least one of the layers of fibrous material (22, 24) has an elongation at maximum load greater than the elasticity of the elastic laminate (20).

12. The article as claimed in claim 1, characterized in that both layers of fibrous material (22, 24) have an elongation at maximum load greater than the elasticity of the elastic laminate (20).

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Your reference: P17123RU00
Our reference: 2413-145245RU/541
Application No.: 2007136282
Attorney Name: Galina V. Zolina

Decision on Grant

Page 3 of 3

13. The article as claimed in claim 1, characterized in that the layers of fibrous material (22, 24) have an elongation at maximum load of at least 10%, preferably at least 20% greater than the elasticity of the elastic laminate (20).

14. The article as claimed in claim 1, characterized in that the first and/or the second layers of fibrous material (22, 24) comprise a mixture of polypropylene and polyethylene polymers.

15. The article as claimed in claim 1, characterized in that said elastic laminate (20) comprises first and second fibrous layers (22, 24) of spunbond material, each having a basis weight of between 10 and 35 g/m², preferably between 12 and 30 g/m², more preferably between 15 and 25 g/m² and a breathable elastic film layer (26) having a basis weight between 20 and 100 g/m², preferably between 20 and 60 g/m², said elastic laminate (20) having a Water Vapour Transmission Rate according to ASTM E96-00 Procedure D of at least 1500 g/m² 24h, preferably at least 3000 g/m² 24h.

✓ (56) WO 01/459927 A1, 28.06.2001

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US 5921973 A, 13.07.1999

WO 03/047488 A1, 12.06.2003

5/2

Форма № 01 ИЗ-2008

**ФЕДЕРАЛЬНАЯ СЛУЖБА ПО ИНТЕЛЛЕКТУАЛЬНОЙ СОБСТВЕННОСТИ,
ПАТЕНТАМ И ТОВАРНЫМ ЗНАКАМ
(РОСПАТЕНТ)**

Бережковская наб., 30, корп. 1, Москва, Г-59, ГСП-5, 123995. Телефон (8-499) 240- 60- 15. Факс (8-495) 234- 30- 58

На № 2413-145245RU/541 от-

Наш № 2007136282/14(039689)

*При перетиске просьба ссылаться на номер заявки
и сообщить дату получения данной корреспонденции*

129010, Москва, ул. Б.Спасская, 25, стр.3,
ООО "Юридическая фирма Городисский и
Партнеры",
пат.пов. С.А.Дорофееву, рег. N 146

6 НОЯ 2008

**Р Е Ш Е Н И Е
о выдаче патента на изобретение**

(21) Заявка № 2007136282/14(039689)

(22) Дата подачи заявки 02.03.2005

В результате экспертизы заявки на изобретение по существу установлено, что
☒ заявленное изобретение

☐ заявленная группа изобретений

относится к объектам патентных прав и соответствует условиям патентоспособности,
предусмотренным Гражданским кодексом Российской Федерации, в связи с чем
принято решение о выдаче патента на изобретение.

Заключение по результатам экспертизы прилагается.

Приложение: на 5 л. в 1 экз.

Руководитель



Б.П.Симонов

Date G&P: 01/12/2008



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Адрес для переписки с патентообладателем или его представителем, который будет опубликован в официальном бюллетене

указан на лицевой стороне бланка решения

Адрес для направления патента

указан на лицевой стороне бланка решения

В результате экспертизы заявки по существу, проведенной в отношении первоначальной формулы изобретения установлено соответствие заявленного изобретения требованиям статей 1349 и 1350 Гражданского кодекса Российской Федерации.

Формула изобретения приведена на странице(ах) 3.

(21) 2007136282/14

(51) МПК

A61F 13/496(2006.01)

A61F 13/15(2006.01)

(57)

1. Изделие (10) в виде предмета нижнего белья типа трусов, содержащее переднюю (12), заднюю (14), ластовичную (16) области и область талии (18), причем указанное изделие (10) имеет продольное (у) и поперечное (х) направление, причем, по меньшей мере, часть изделия (10) содержит эластичный ламинат (20), образованный из первого (22) и второго (24) слоев волокнистого материала и слоя эластичной пленки (26), расположенной между указанным первым и вторым волокнистыми слоями (22; 24), отличающееся тем, что указанный ламинат (20) имеет сопротивление проколу, по меньшей мере, 15 Н.

2. Изделие по п.1, отличающееся тем, что эластичный ламинат (20) имеет сопротивление проколу, по меньшей мере, 20 Н, более предпочтительно, по меньшей мере, 30 Н.

3. Изделие по п.1, отличающееся тем, что, по меньшей мере, передняя область (12) изделия содержит эластичный ламинат (20).

4. Изделие по п.1, отличающееся тем, что как передняя, так и задняя области (12; 14) изделия содержат эластичный ламинат (20).

5. Изделие по п.1, отличающееся тем, что существенная часть ластовичной области (16) изделия является свободной от указанного эластичного ламината.

6. Изделие по п.1, отличающееся тем, что область талии (18) изделия свободна от указанного эластичного ламината.
7. Изделие по любому из пунктов 1-4, отличающееся тем, что все изделие (10) содержит эластичный ламинат (20).
8. Изделие по п.1, отличающееся тем, что указанный слой эластичной пленки (26) является воздухопроницаемым.
9. Изделие по п.8, отличающееся тем, что указанный эластичный ламинат (20) имеет Скорость Пропускания Водяного Пара в соответствии с Методикой D ASTM E96-00, по меньшей мере, $1500 \text{ г/м}^2 \text{ 24ч}$, предпочтительно, по меньшей мере, $3000 \text{ г/м}^2 \text{ 24ч}$.
10. Изделие по п.1, отличающееся тем, что указанный эластичный ламинат (20) имеет эластичность в поперечном направлении изделия, по меньшей мере, 30%, предпочтительно, по меньшей мере, 50%, более предпочтительно 70% при измерении в соответствии с испытанием на эластичность, изложенном в описании.
11. Изделие по п.1, отличающееся тем, что, по меньшей мере, один из слоев волокнистого материала (22, 24) имеет удлинение при максимальной нагрузке больше, чем эластичность эластичного ламината (20).
12. Изделие по п.1, отличающееся тем, что оба слоя волокнистого материала (22, 24) имеют удлинение при максимальной нагрузке больше, чем эластичность эластичного ламината (20).
13. Изделие по п.1, отличающееся тем, что слои волокнистого материала (22, 24) имеют удлинение при максимальной нагрузке, по меньшей мере, на 10%, предпочтительно, по меньшей мере, на 20% больше, чем эластичность эластичного ламината (20).
14. Изделие по п.1, отличающееся тем, что первый и/или второй слои волокнистого материала (22, 24) содержат смесь полимеров полипропилена и полиэтилена.
15. Изделие по п.1, отличающееся тем, что указанный эластичный ламинат (20) содержит первый и второй волокнистый слои (22, 24) спряденного

материала, причем каждый имеет основную массу между 10 и 35 г/м², предпочтительно между 12 и 30 г/м², более предпочтительно между 15 и 25 г/м² и воздухопроницаемый слой эластичной пленки (26) имеет основную массу между 20 и 100 г/м², предпочтительно между 20 и 60 г/м², причем указанный эластичный ламинат (20) имеет Скорость Прохождения Водяного Пары в соответствии с методикой D ASTM E96-00 по меньшей мере, 1500 г/м² 24ч, предпочтительно, по меньшей мере, 3000 г/м² 24ч.

(56) WO 01/459927 A1, 28.06.2001

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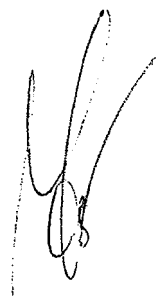
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При публикации сведений о выдаче патента будут использованы описание в редакции заявителя и реферат, скорректированный экспертизой.

Приложения: 1. Реферат на 1 л. в 1 экз.

Заместитель заведующего отделом медицины
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