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A B O G A D O S

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SUPERINDUSTRIA Y COMERCIO

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SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

DIVISIÓN DE NUEVAS CREACIONES

E.

S.

D.

Re: Expediente No. 02.027.422
Solicitud de Patente en nombre de
McNeil-PPC, Inc.

Yo, JIMENA ESCOBAR URIBE, identificada como aparece al pie de mi firma, domiciliada en Bogotá, en la Carrera 11 A No. 94-76 Of. 305, obrando como apoderada de la sociedad McNeil-PPC, Inc., solicitante de la patente de la referencia, anexo al presente memorial los siguientes documentos:

Copia certificada de la solicitud de Patente Número 09/825,121 presentada en los Estados Unidos de América el día 3 de abril de 2001, con la debida traducción de lo pertinente, incluyendo el capítulo reivindicatorio.

A este mismo respecto, debe tenerse en cuenta que en la primera página de la copia en mención la Oficina de Patentes correspondiente certificó la fecha de presentación de esa solicitud, cumpliéndose de esta forma todos y cada uno de los requisitos establecidos en el inciso segundo del artículo 10 de la Decisión 486 de la Comisión de la Comunidad Andina.

Señor Superintendente,


JIMENA ESCOBAR URIBE
C.C.39.779.452 de usaquén
T.P. 68228

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**ESTADOS UNIDOS DE AMERICA
A TODOS AQUELLOS A QUIENES EL PRESENTE
LLEGUE:**

**DEPARTAMENTO DE COMERCIO DE LOS ESTADOS
UNIDOS
Oficina de Patentes y Marcas de los Estados Unidos**

Marzo 25, 2002

La presente es para certificar que el anexo es una copia fiel de los registros de la Oficina de Patentes y Marcas de los Estados Unidos, de los documentos de la solicitud de patente identificada más adelante, que cumplieron con los requerimientos para concederse una fecha de presentación de acuerdo con 35 USC 111.

Número de Solicitud: 09/825,121

Fecha de Presentación: Abril 3, 2001

**Por la autoridad del
Comisionado de Patentes y Marca**

**(fdo) N. WOODSON
Oficial Certificador
Sello oficial de la Oficina de Patentes y Marcas de los
Estados Unidos de América**

REIVINDICACIONES

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1. Un artículo absorbente discreto que comprende:
 - a) un revestimiento de polipropileno pigmentado con negro de carbón que tiene un área de superficie, en donde el revestimiento comprende un patrón de rasgos realzados, los rasgos realzados comprenden una longitud de eje mayor y una longitud de eje menor, en donde la longitud de eje mayor es mayor que o igual que la longitud de eje menor;
 - b) una capa de transferencia con orificios de polietileno pigmentado con negro de carbón;
 - c) un núcleo absorbente; y
 - d) una hoja trasera de polietileno pigmentada con negro de carbón.
2. Un artículo absorbente de conformidad con la reivindicación 1, en donde la longitud de eje menor es igual a o menor que aproximadamente 1 mm.
3. Un artículo absorbente de conformidad con la reivindicación 1, en donde el patrón de rasgo realzado comprende aproximadamente 5 a 25% del área de superficie del revestimiento.
4. Un artículo absorbente de conformidad con la reivindicación 3, en donde el patrón de rasgo realzado comprende adicionalmente 15% del área de superficie del revestimiento.
5. Un artículo absorbente de conformidad con la reivindicación 1, en donde los rasgos realzados se selecciona a partir del grupo que consiste de cuadrados, círculos, diamantes, triángulos y líneas.
6. Un artículo absorbente de conformidad con la reivindicación 5, en donde los rasgos realzados comprenden cuadrados.



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

March 25, 2002

THIS IS TO CERTIFY THAT ANNEXED HERETO IS A TRUE COPY FROM THE RECORDS OF THE UNITED STATES PATENT AND TRADEMARK OFFICE OF THOSE PAPERS OF THE BELOW IDENTIFIED PATENT APPLICATION THAT MET THE REQUIREMENTS TO BE GRANTED A FILING DATE UNDER 35 USC 111.

APPLICATION NUMBER: 09/825,121

FILING DATE: April 03, 2001

**By Authority of the
COMMISSIONER OF PATENTS AND TRADEMARKS**




N. WOODSON

Certifying Officer

Please type a plus sign (+) in this box ☒

UTILITY

PATENT APPLICATION
TRANSMITTAL

(only for new nonprovisional applications under 37 CFR 1.52(b))

Attorney Docket No.

PPC-781

First Inventor

GRAEME III et al.

Title

DISCRETE ABSORBENT ARTICLE

Express Mail Label No.

EL32728401BUS

APPLICATION ELEMENTS

ADDRESS TO:

Commissioner for Patents
Box Patent Application
Washington, DC 20231

See MPEP Chapter 800 concerning utility patent application contents.

1. ☒ Fee Transmittal Form (e.g., PTO/SB/17)
(submit an original and a duplicate for fee processing)

2. ☐ Applicant claims small entity status.

3. ☒ Specification [Total Pages 17]

(Preferred arrangement set forth below)

- Descriptive Title of the Invention
- Cross Reference to Related Applications
- Statement Regarding Fed sponsored R&D
- Reference to sequence listing, a table, or a computer program listing appendix
- Background of the Invention
- Brief Summary of the Invention
- Brief Description of the Drawings (if filed)
- Detailed Description
- Claim(s)
- Abstract of the Disclosure

4. ☒ Drawing(s) (35 USC 113) [Total Sheets 7]

5. Oath or Declaration [Total Pages 3]

a. ☒ Newly unexecuted (original or copy)

b. ☐ Copy from a prior application (37 CFR 1.53(d))
(for continuation/divisional with Box 18 completed)

i. ☐ DELETION OF INVENTOR(S)

Signed statement attached deleting inventor(s) named in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).

6. ☐ Application Data Sheet. See 37 CFR 1.76

7. ☐ CD-ROM or CD-R in duplicate, large table or Computer Program (Appendix)

8. Nucleotide and/or Amino Acid Sequence Submission (if applicable, all necessary)

a. ☐ Computer Readable Form (CRF)

b. ☐ Specification Sequence Listing on:

i. ☐ CD-ROM or CD-R (2 copies); or

ii. ☐ paper

c. ☐ Statement verifying identity of above copies

ACCOMPANYING APPLICATION PARTS

9. ☐ Assignment Papers (cover sheet & document(s))

10. ☐ 37 CFR 3.73(b) Statement ☐ Power of Attorney
(when there is an assignee)

11. ☐ English Translation Document (if applicable)

12. ☐ Information Disclosure Statement

(IDS)/PTO-1449 ☐ Copies of IDS Citations

13. ☐ Preliminary Amendment

14. ☒ Return Receipt Postcard (MPEP 503)
(Should be specifically itemized)

15. ☐ Certified Copy of Priority Document(s)
(if foreign priority is claimed)

16. ☐ Request and Certifications under 35 U.S.C. 122
(b)(2)(B)(i). Applicant must attach form PTO/SB/35 or its equivalent.

17. ☒ Other: Express Mail Certificate #EL32728401BUS

18. ☐ If a CONTINUING APPLICATION, check appropriate box and supply the requisite information below and in a preliminary amendment, or in an Application Data Sheet under 37 CFR 1.76:

☐ Continuation ☐ Divisional ☐ Continuation-in-Part (CIP) of prior application No.: , filed

Prior application information: Examiner Group Art Unit:

For CONTINUATION or DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 5b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

19. CORRESPONDENCE ADDRESS

☒ Customer Number or Bar Code Label 000027777 or ☐ Correspondence Address below

Name: Philip S. Johnson, Esq.

Address: Johnson & Johnson
One Johnson & Johnson Plaza
New Brunswick, NJ 08933-7003 USA

20. TELEPHONE CONTACT

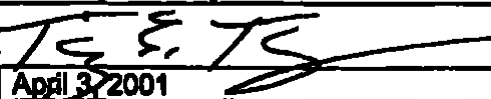
Please direct all telephone calls or telefaxes to Timothy E. Tracy at:

Telephone: (732) 524-6586 Fax: (732) 524-2808

21. SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

NAME Timothy E. Tracy Reg. No. 39,401

SIGNATURE

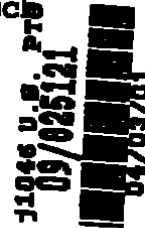


DATE

April 3, 2001

IN THE UNITED STATES
PATENT AND TRADEMARK OFFICE

Applicant: Robert J. Graeme III and H. Michael Moscherosch
For : DISCRETE ABSORBENT ARTICLE



Express Mail Certificate

"Express Mail" mailing number: EL327264018US

Date of Deposit: April 3, 2001

1020111-152860

I hereby certify that this complete application, including specification pages, claims, abstract, informal color photographs, and unexecuted declaration and power of attorney, is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to the Commissioner for Patents, Box Patent Application, Washington, D.C. 20231.

Martin A. Rizzi, Jr.

(Typed or printed name of person mailing paper or fee)

(Signature of person mailing paper or fee)

FEE TRANSMITTAL

Complete if Known	
Application Number	
Filing Date	April 3, 2001
First Named Inventor	GRAEME III et al.
Group Art Unit	
Examiner Name	
Attorney Docket Number	PPC-781

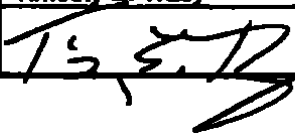
FEE CALCULATION

CLAIMS AS FILED

(1)	(2)	(3)	(4)	(5)
FOR:	NUMBER FILED	NUMBER EXTRA	RATE	BASIC FEE \$710.00
TOTAL CLAIMS	8 - 20 =	0	x 18.00	\$ 0.00
INDEPENDENT CLAIMS	1 - 3 =	0	x 80.00	\$ 0.00
MULTIPLE DEPENDENT CLAIMS	☐	N/A	\$270.00	
			TOTAL FEES	\$ 710.00

METHOD OF PAYMENT

- ☒ Please charge Deposit Account No. 10-0750/PPC-781/TT in the amount of \$710.00. Three copies of this sheet are enclosed.
- ☒ The Commissioner is hereby authorized to charge any additional fees which may be required in connection with the filing of this communication, or credit any overpayment, to Account No. 10-0750/PC-781/TT. Three copies of this sheet are enclosed.

SUBMITTED BY:		Complete (if applicable)
Typed or Printed Name	Timothy E. Tracy	Reg. No. 39,401
Signature		Deposit Account No. 10-0750
		Date: April 3, 2001

Discrete Absorbent Article

Field of the Invention

The present invention relates to absorbent articles such as pantliners, sanitary napkins, incontinence pads, interlabial and the like. More particularly, the present invention relates to discrete pantliners having masking properties.

Background of the Invention

Currently, absorbent articles for sanitary protection include pantliners, sanitary napkins, interlabial devices, and incontinence pads. These absorbent articles must fit a variety of individual body shapes and sizes and must also fit the different types of underwear available. Additionally, the options of underwear type are increasing. Not only are the shapes of the crotch changing (e.g., full-sized or conventional vs. abbreviated) but the materials and color used to make the underwear are giving woman many more choices than in previous history.

Fashion also dictates the type of underwear chosen. Pant styles, especially among the younger generation of menstruating women, can be extremely fitted. Skirts may also be short and fitted. For this reason, sanitary protection articles need to be necessarily discrete. Absorbent articles that have previously been bulky are being made thinner with the use of additives, such as super absorbent polymers, which absorb large quantities of fluid with less bulk than a conventional pulp absorbent.

Likewise, pant and undergarments are becoming more sheer making the color of absorbent articles to become increasingly more important. For example, a woman wearing a short skirt with dark, sheer pantyhose and/or a pair of dark, sheer underwear may prefer to have a corresponding colored absorbent article for sanitary protection as opposed to the traditional white.

Additionally, while increasing the overall absorptive capacity has proved to be beneficial in preventing soiling undergarments, the impression to the user,

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nonwoven fabric strips, that are oriented in longitudinally opposed parallel relationship about a longitudinal central zone of the black apertured film layer are provided. The general structure of this ALLDAYS product is disclosed in WO 93/097744, published May 27, 1993, to Procter & Gamble Company. While this ALLDAYS product appears black, the white absorbent core is discernible to the naked eye in the central zone of the black apertured film layer. In addition, this product suffers from poor fluid masking.

Accordingly, there is a need for an absorbent product that offers not only superior fluid masking, but does not also reveal the white absorbent core to the user. By providing such an absorbent product the user has the perception of a clean and dry product.

Summary of the Invention

An absorbent article having a pigmented cover; a pigmented apertured transfer layer; an absorbent core; and a pigmented backsheet that provides masking of synthetic menstrual fluid and discretion.

Brief Description of the Drawings

FIG. 1 is a color photograph of an unstained prototype made according to the present invention;

FIG. 2 is a color photograph of the prototype of FIG. 1 taken 15 minutes after synthetic menstrual fluid has been disposed on the cover;

FIG. 3 is a color photograph of a prototype of the present invention taken 24 hours after synthetic menstrual fluid has been disposed on the cover;

FIG. 4 is a color photograph of an unstained ALLDAYS black pantiliner;

FIG. 5 is a color photograph of the ALLDAYS black pantiliner of FIG. 3 taken 15 minutes after synthetic menstrual fluid has been disposed on the cover;

FIG. 6 is a color photograph of an ALLDAYS black pantiliner taken 24 hours after synthetic menstrual fluid has been disposed on the cover; and

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FIG. 7 is a color photograph of the scale used in the color photographs set forth in Figs. 1-6.

Detailed Description of the Invention

As used herein, masking means the property of the body facing side of an absorbent article to not visually change color upon the addition of body exudates thereon; e.g., the color of the product after having synthetic menstrual test fluid applied to the body-facing surface of the absorbent product is not visibly altered. As also used herein, pigment means inert particles that are incorporated in a material, e.g., carbon black and titanium dioxide. Naked eye as used herein means about 20/20 vision, whether corrected or uncorrected.

As used herein, all ranges provided are intended to expressly include at least all numbers that fall between the endpoints of ranges.

As is well known to those skilled in the art, absorbent articles that are worn externally generally have a layered construction with a body-facing surface that is oriented to face the wearer during use and a garment-facing surface oriented in the opposite direction from the body-facing surface. Typically such articles have a liquid pervious cover on the body-facing surface of the article, an absorbent core and a backsheet on the garment-facing surface of the article. The absorbent core is interposed between the cover and the backsheet. The cover and the backsheet encase all components of the article. The cover and the backsheet are typically joined or sealed to each other along their peripheral edge using any method known in the art.

Additionally, absorbent articles often include a transfer layer, which is positioned between the cover and absorbent core. The transfer layer may be any material that draws or transports fluid away from the cover and body towards the absorbent core or layer.

Commonly, materials used to make absorbent articles are white or near white.

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In a preferred embodiment of the present invention, the absorbent article has a cover, a transfer layer, an absorbent core and a backsheet. A pigment, such as carbon black, is incorporated into the cover, transfer layer and backsheet, thereby providing masking of the absorbent core and discreteness of the absorbent article.

Cover

The cover of an absorbent article typically overlays the absorbent core. The exterior of the cover forms the body-facing surface of the absorbent article. As known by those skilled in the art, the cover may be formed from any fluid pervious material that is comfortable against the skin and permits fluid to penetrate to the absorbent core, which retains the fluid. The cover should retain little or no fluid to provide a relatively dry surface next to the skin when in use. A variety of cover materials are known in the art, and any of these may be used. For instance, the cover has been made from fibrous non-woven fabrics made of fibers or filaments of polymers, such as polyethylene, polypropylene, polyester, or cellulose, and combinations or mixtures thereof. The fiber or filament can be single denier or multidenier.

Other materials used in making covers include gauze or for example, a nonwoven material such as the ones described in U.S. Patent No. 3,554,788 (Fechillas), any known porous material with a suitable body contacting surface, including, but not limited to nonwoven webs, apertured films, plastic nets, and the like. Previously, the cover could also be made from a fibrous nonwoven composite of bicomponent fibers and pulp fluff.

Alternatively, the cover may be formed from an apertured polymeric film. In addition, such a film may be treated with a surfactant to increase hydrophilicity.

Generally, the cover is a single sheet or layer of material having a width sufficient to form the body-facing surface of the absorbent article. Preferably, the cover is longer and wider than the absorbent core.

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In a preferred embodiment, the cover is a web made from a spunbonded mixture of single denier polypropylene filaments containing carbon black. A preferred range of polypropylene filaments is about 95 to about 99% by weight of the web, more preferably 97 to 98% by weight of the web. Additionally, it is preferred that the material used to form the cover be hydrophilic, which can be by any methods known to those skilled in the art such as surface treatment, surface spraying or incorporation of a surfactant into the mixture. An example of such a web or nonwoven is number 7070-001H available from the Polymer Group Inc, (Benson, NC).

Preferred colorants include inert or inactive pigments, such as carbon black iron oxides (red, yellow, and brown), chromium oxide (green), ferric ammonium ferrocyanide (blue) and the like. Major organic pigments include diarylide yellow AAOA (Pigment Yellow 12), diarylide yellow AAOT (Pigment Yellow 14), phthalocyanine blue (Pigment Blue 15), lithol red (Pigment Red 49:1), and (Red Lake C Pigment Red. The amount of pigment used is dependent upon the individual pigment loading level. In the present invention, carbon black from Degussa (Dusseldorf, Germany) under the trade name Printex F Alpha is used, preferably at about 0.5 to about 2.8% by weight of the web, more preferably about 0.7 to about 2.0% by weight of the web. Other carbon black pigments include any FDA-approved pigment, including Printex F80, Printex F85, and Printex FP, all from Degussa (Dusseldorf, Germany) and PPM 9294 from Techmer PM (Rancho Dominguez, CA). Preferably, the resulting black color provides a measurement of S325-1 to S325-2 as measured on the Pantone Scale.

Since the carbon black is incorporated into the polypropylene, it is captured in the final web. Therefore, the resulting web will not fade, is colorfast, and the carbon black pigment will not rub off.

Any method known to those in the art can be used to process the fibers or filaments into the web material. Two preferred methods are carding and

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spunbonding. The use of pigments in the fibers or filaments, however, can lead to difficulty in cleanup if used in the carding process, becoming costly and time consuming. A preferred method is spunbonding. In a preferred embodiment, polypropylene containing carbon black is spunbond to form the web. The weight of the web is from about 25 to about 40 gam, more preferably from about 25 and about 35 gam. Web material that has a higher weight may be stiff while web material with a lower weight may be thinner and more transparent.

In a process for making a spunbonded web, known amounts of polypropylene and pigment are mixed and then added to an extruder. The extruder's spinnerets lay separate fiber filament mixtures (web) onto a forming belt. The web is held onto the belt by vacuum. The web is then moved into a calendering apparatus, which embosses and bonds the web material. The surface of the embossed areas of the web is shiny and reflect light more than the dull, un-embossed areas of the web. Therefore, the amount of embossing determines the amount of light reflected.

In a preferred embodiment, the material is embossed with a repetitive pattern of shapes within a given area. For example, a series or a number of features, e.g., circles, triangles, squares, lines, honeycomb, diamond, etc. are embossed over the entire length and width of the outer surface of web. Each embossed feature has a major and minor axis extending therethrough, the major axis length being greater or equal to the minor axis length. In a preferred embodiment, the embossing is square shaped having a minor axis length being less than or equal to about 1 mm, such that about 5 to about 25% of the surface area is embossed. More preferably, about 15% of the cover surface area is embossed, which appears glossy and visually pleasing. In another preferred embodiment, the minor axis length is 0.75 mm and the major axis length is 0.80 mm, having about 12% of the cover surface area being embossed. Preferably, there are about 25 to 65 embossed features per square centimeter of web surface area, more preferable about 30 to about 50 embossed features per square

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centimeter of web surface area. In another embodiment of the present invention, embossing is a continuous line that forms features or shapes.

Transfer Layer

5 The absorbent article of the present invention includes a transfer layer. The transfer layer may be made of any known material that will take up fluid and then distribute and release it to an adjacent absorbent core or layer for storage. Preferred transfer layers have a relatively open structure that allows for movement of fluid within the layer. Suitable materials for such transfer layers include fibrous webs, resilient foams, and the like.

10 The transfer layer is able to accept fluid and allow passage of the fluid through its mass to be absorbed by an adjacent absorbent core. Thus, transfer layers that are made of hydrophobic, nonabsorbent fibers may be able to accept large volumes of fluid into interfiber void spaces while the fibers themselves do not absorb any significant quantities of fluid. Likewise, open-celled foam structures that are made from nonabsorbent materials may also absorb fluid into the cells of the foam. The walls of the cells, however, do not absorb any fluid. The cumulative spaces within the transfer layer, i.e., the interfiber void spaces in the fibrous transfer layer or the open cells in the foam transfer layer, function much like a container to hold fluid.

20 Transfer layers that are made from webs of mostly absorbent fibers absorb the fluid as it enters the structure and do not distribute it throughout the rest of the structure as efficiently as webs containing non-absorbent materials. Preferred transfer layer fibrous webs include nonabsorbent materials to provide void volume and to allow for free movement of fluid through the structure. Examples of
25 preferred materials include polypropylene, polyethylene, polyester, bicomponent materials, nylon and mixtures or combinations thereof. In a preferred embodiment, the transfer layer is an apertured film made from a carbon black pigmented

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polyethylene. An example useful in the present invention is a black topsheet film available from the ADMA division of Tredegar (Chieti, Italy) as 33-12-2001.

5 The transfer layer does not have to be apertured film; it can be any other pigmented nonwoven material, such as foam or netting, which transports fluid and in combination with the cover, provides masking of the absorbent core. However, in a preferred embodiment, the transfer layer is a 25 gsm apertured film made from pigmented polyethylene.

10 In a preferred embodiment, the absorbent core is masked by the combination of pigmented cover and pigmented transfer layer. In one embodiment, if the amount of pigment in the cover is slight or the weight of the cover material is low, the amount of pigment in the transfer layer may be such that the absorbent core is hidden from the naked eye.

15 The cover layer can be joined or laminated to the transfer layer by any methods known in the art such as fusion bonding, adhesive attachment, or by any other securement means. Fusion bonding includes heat bonding, ultrasonic bonding, and the like.

20 In a preferred embodiment, the cover and transfer layers are joined together by first applying adhesive to the underside of the cover material and placing the cover web onto the transfer layer material. While any adhesive may be used, such as any non-pressure sensitive adhesive, a preferred adhesive is D 1280 BE (available from Fuller Co., Germany)

25 The composite layer formed from the cover and transfer layers may be further processed. In a preferred embodiment, the composite layer includes an embossed pattern on the outer cover surface. For example, flowers and rails under the CAREFREE® pattern (e.g., U.S. Design Patent No. 439,057) are embossed after the composite is formed, which results in an embossed pattern having flowers, rails, and squares.

Absorbent Core

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The absorbent core or layer of the present invention may contain any known absorbent materials including, but not limited to, absorbent fibers, such as cellulose fibers, including, but not limited to wood pulp, regenerated cellulose fibers, and cotton fibers, rayon fibers and the like; superabsorbent fibers or particles; other naturally occurring absorbent materials, such as peat moss; and other synthetic absorbent materials, such as foams and the like. The absorbent layer may also include one or more of the following: thermoplastic binder fibers, latex binder, perfumes, oils or odor-controlling compounds. Additionally, the absorbent layer may be a mixture of two or more types of thermoplastic fibers having different melting points. Bicomponent fibers, fibers with an inner core of a thermoplastic fiber, e.g., polyester, surrounded by an outer sheath of thermoplastic, e.g., polyethylene, having a melting point much lower than the core, have been found to be the best fibers to work with from processing and performance standpoints. Upon application of heat and pressure sufficient to melt at least one of the fiber types, the remaining unmelted fibers will be thermobonded or fused together into a porous web.

Cellulosic pulp fibers can also be included with thermoplastic fibers. Since thermoplastic fibers, without further treatment, are essentially hydrophobic, the absorbent layer will not effectively draw fluid away from the composite cover and transfer layer absent some hydrophilic material. It is important to have sufficient pulp to absorb fluid.

In a preferred embodiment, the absorbent layer is made from airlaid pulp and includes about 15% by weight of superabsorbent polymer available as Salsorb CL 15 from Chemdal (United Kingdom). Optimally, the amount of superabsorbent in the absorbent core may be in the range of from about 5 to about 50 % by weight of the absorbent core. The absorbent core may be compressed or uncompressed, embossed, or calendered. Additionally, the absorbent core may have the following dimensions: about 135mm x about 38mm x about 1.7mm.

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Backsheet

The backsheet of the present invention is a body fluid impervious black material, typically referred to as a "barrier," which is at least substantially impermeable to liquids. Its exterior forms the garment-facing surface of the absorbent article. The backsheet may be any thin, flexible, body fluid impermeable material, such as, but not limited to, a polymeric film, e.g., polyethylene, polypropylene, or cellophane, or a normally fluid pervious material that has been treated to be impervious, such as impregnated fluid repellent paper or non-woven material, including non-woven fabric material, or a flexible foam, such as polyurethane or cross-linked polyethylene. In the present invention, the backsheet is a mixture of material and pigment. In a preferred embodiment, polyethylene is mixed with a known amount of carbon black to produce a black film. The thickness of the pigmented backsheet is from about 0.0005 to about 0.002 inch (about 0.013 mm to about 0.051 mm). In a preferred embodiment, the absorbent core is not visible to the naked eye when looking at the garment-facing surface of the absorbent article.

Optionally, the backsheet may be breathable, i.e., permits vapor to transpire. Known materials for this purpose include nonwoven materials, monolithic and microporous films in which microporosity is created by, inter alia, stretching an oriented film. Single or multiple layers of permeable films, fabrics, melt-blown materials, and combinations thereof that provide a tortuous path, and/or whose surface characteristics provide a liquid surface repellent to the penetration of liquids may also be used to provide a breathable backsheet.

Bonding Methods

The layers of the absorbent article may be, but not necessarily, bonded, e.g., glued or adhered, to the adjacent layer. For example, the underside of the cover/transfer layer composite is adhered to the top side of the absorbent layer. The underside of the absorbent layer is adhered to the top side of the backsheet. As

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previously stated, any methods known in the art, such as fusion bonding, adhesive attachment, or by any other securement means can be used to secure the individual layers together to form the final absorbent article. Fusion bonding includes heat bonding, ultrasonic bonding, and the like.

5 Additionally, adhesive applied to the garment facing side of the absorbent article may be any adhesive known in the art. As a non-limiting example, pressure sensitive adhesive strips, swirls, or waves may be applied to help maintain the absorbent article in place. As used herein, the term pressure-sensitive adhesive refers to any releasable adhesive, or releasable tenacious means. Suitable adhesive compositions, include, for example, water-based pressure-sensitive adhesives such as acrylate adhesives. Alternatively, the adhesive composition may include rapid setting thermoplastic "hot melt," rubber adhesives, two-sided adhesive tape, and the like.

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15 As is customary in the art, a paper release strip, which has been coated on one side, is applied to protect adhesive that may be applied to the garment-facing side of the backsheet. The coating on the paper release strip, which may be silicone, reduces the adherency to the adhesive of the coated side of the release strip. The release strip can be formed from any suitable sheet-like material which, when coated, adheres with sufficient tenacity to the adhesive to remain in place prior to ,
20 use but which can be readily removed when the absorbent article is to be used.

Wings

25 Wings, also called, among other things, flaps or tabs, may also be part of the absorbent article of the present invention. Wings and their use in sanitary protection articles is described in U.S. Patent No. 4,687,478 to Van Tilburg; U.S. Patent No. 4,589,876 also to Van Tilburg, U.S. Patent No. 4,900,320 to McCoy, and U.S. Patent No. 4,608,047 to Mattingly. The disclosures of these patents are incorporated herein by reference in their entirety. As disclosed in the above documents, wings are

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generally speaking flexible and configured to be folded over the edges of the underwear so that the wings are disposed between the edges of the underwear.

The overall dimensions of the absorbent article of the present invention are preferably as follows: length is preferably in the range of about 3 inches (7.63 cm) to about 9 inches (22.9 cm). The maximum width of the anterior portion is preferably in the range of about 1.5 inches (3.81 cm) to 3 inches (7.6 cm).

The absorbent article of the present invention may be used with conventional underwear or may be shaped to conform to thong garments. As used herein, the term thong garment includes, but is not limited to, thong underwear, thong swimming suit bottom, G-strings, Rio cut underwear, Rio-cut swimming suit bottom, Brazilian cut underwear, Brazilian cut swimming suit bottom, and any other garment that exposes the buttocks, having a narrow strip of fabric or a cord that passes between the thighs supported by a waistband, a waist cord, belt or the garment itself.

The absorbent article may be applied to the crotch of a garment by placing the garment-facing surface against the inside surface of the crotch of the garment. Pressure sensitive adhesive may be applied to the garment-facing surface of the absorbent article to help secure it in place. As used herein, the term "pressure-sensitive adhesive" refers to any releasable adhesive or releasable tenacious means. Suitable pressure sensitive adhesives include for example water-based adhesives such as acrylate adhesives. Alternatively, the adhesive may comprise "hot melt" rubber adhesives or two-sided adhesive tape. Preferably, the pressure-sensitive adhesive is adhesive number D-39964-B available from Fuller Co. (Germany).

While the preferred embodiment of the invention is a black pantliner, other embodiments are also included within the scope of the present invention. For example, other inert pigments may be used to produce a colored absorbent article. An example may be light or dark pigment, such as blue, green, pink, red, etc.

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Additionally, patterns including multiple colors and stripes, such as tiger, zebra stripes may be included.

Example 1: Visual Masking Detection

5 Prototype devices made according to the present invention and a commercial absorbent product, available as ALLDAYS brand black pantiliner from Procter & Gamble (Cincinnati, OH), were compared for masking ability. In the central zone of the ALLDAYS brand black pantiliner, the white absorbent core is discernible, e.g., visible, to the naked eye when the perpendicular distance between the viewer's eye and the surface of the product is about 12 inches (about 30.5 cm) and the surface is illuminated with normal light, e.g., sunlight, or artificial light, e.g., fluorescent and incandescent, as described in U.S. Patent No. 4,463,045. With the prototype device of the present invention, the white absorbent core was not visible to the naked eye when viewed in the same manner. Masking was further demonstrated by adding 1 ml of a synthetic menstrual fluid to a prototype device of the present invention and to the ALLDAYS product, then examining each product after various time points. The synthetic menstrual fluid used may be any synthetic menstrual fluid having a viscosity of approximately 30 centipoise. The red color of the synthetic menstrual fluid was not visibly detectable by viewing the surface of the prototype device with the naked eye. However, the red color of the synthetic menstrual fluid was clearly
20 visible to the naked eye in the central zone of the ALLDAYS brand black pantiliner.

Viewing the prototype and ALLDAYS products at a moderate magnification also illustrated the superior masking of the absorbent article of the present invention. These results were shown using photographic techniques. Photomicrographs were prepared of magnified images of unstained and stained prototype and ALLDAYS
25 products. Samples were imaged using an Olympus SZH stereo microscope with a 1X objective, a zoom setting of 0.7 and a 2.5x eyepiece. A Javelin Chromachip Vtm Hi Resolution color camera was used with the images printed on a Sony Mavigraph

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UP1900 MD video printer. Resulting images are at an original print magnification of 7.4X.

FIG. 1 is a color photograph of an unstained prototype made according to the present invention. FIG. 2 is a color photograph of the prototype of FIG. 1 taken 15 minutes after synthetic menstrual fluid has been disposed on the cover. FIG. 3 is a color photograph of a prototype of the present invention taken 24 hours after synthetic menstrual fluid has been disposed on the cover.

FIG. 4 is a color photograph of an unstained ALLDAYS black pantyliner. FIG. 5 is a color photograph of the ALLDAYS black pantyliner of FIG. 3 taken 15 minutes after synthetic menstrual fluid has been disposed on the cover. FIG. 6 is a color photograph of an ALLDAYS black pantyliner taken 24 hours after synthetic menstrual fluid has been disposed on the cover.

FIG. 7 is a color photograph of the scale used in the color photographs set forth in Figs. 1-6.

As is depicted in FIGS. 5 and 6, the ALLDAYS black pantyliner failed to mask the red color of the synthetic menstrual fluid at 15 minutes and 24 hours after the synthetic menstrual fluid was deposited thereon. This result was consistent with inspection by the naked eye. In contrast, the prototype absorbent article of the present invention did not permit any red color of the synthetic menstrual fluid to be detected by either the naked eye or microscopic examination, as demonstrated in FIGS. 2 and 3.

The specification and examples above are presented to aid in the complete and non-limiting understanding of the invention disclosed herein. Since many variations and embodiments of the invention can be made without departing from its spirit and scope, the invention resides in the claims hereinafter appended.

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We claim:

1. A discrete absorbent article comprising:
 - a) a single carbon black pigmented polypropylene cover layer having a surface area, wherein the cover comprises a pattern of embossed features, each embossed feature comprises a major axis length and a minor axis length, wherein the major axis length is greater than or equal to the minor axis length;
 - b) a carbon black pigmented polyethylene apertured transfer layer;
 - c) an absorbent core; and
 - d) a carbon black pigmented polyethylene backsheet.
2. An absorbent article of claim 1, wherein the minor axis length is equal to or less than about 1 mm.
3. An absorbent article of claim 1, wherein the embossed feature comprises about 5 to 25% of the surface area of the cover.
4. An absorbent article of claim 3, wherein the embossed feature further comprises 15 % of the surface area of the cover.
5. An absorbent article of claim 1, wherein the embossed feature is selected from the group consisting of squares, circles, diamonds, triangles, and lines.
6. An absorbent article of claim 5, wherein the embossed feature comprises squares.

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ABSTRACT

An absorbent article having a pigmented cover, a pigmented apertured transfer layer, an absorbent core, and a pigmented backsheet that provides masking of synthetic menstrual fluid and discretion.

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PTO/SB/01 (10-00)
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DECLARATION AND POWER OF ATTORNEY FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63) ☒ Declaration Submitted with Initial Filing ☐ Declaration Submitted after Initial Filing (Surcharge (37 CFR 1.16(e)) required)	Attorney Docket Number	PPC-781
	First Named Inventor	GRAEME III et al.
	COMPLETE IF KNOWN	
	Application Number	
	Filing Date	April 3, 2001
	Group Art Unit	
Examiner Name	N/A	

As a below named inventor, I hereby declare that:

My residence, mailing address, and citizenship are as stated below next to my name.
I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

DISCRETE ABSORBENT ARTICLE
(Title of the invention)

the specification of which

☒ is attached hereto

OR

☐ was filed on (MM/DD/YYYY) ☐ as United States Application Number or PCT International Application Number
☐ and was amended on (MM/DD/YYYY)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT International filing date of the continuation-in-part application.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT International application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or any PCT International application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached? YES NO
			☐ ☐ ☐ ☐	☐ ☐ ☐ ☐

☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto:

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DECLARATION - Utility or Design Patent Application		
I hereby claim the benefit under 35 U.S.C. 119(e) of any United States provisional application(s) listed below.		
Application Number(s)	Filing Date (MM/DD/YYYY)	☐ Additional provisional application numbers are listed on a supplemental priority date sheet PTO/SB/029 attached hereto.
I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.58(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:		
Application Serial No.	Filing Date	Status
		Patented Patented Patented
I hereby appoint:		
☒ Practitioners at Customer Number 000027777 --		Place Customer Number Bar Code Label Here
AND		
☐ Practitioner(s) named below: Name _____ Registration Number _____		
as my/our attorney(s) or agent(s) to prosecute the application identified above, and to transact all business in the United States Patent and Trademark Office connected therewith.		
Address all telephone calls to Timothy E. Tracy at telephone number (732) 534-8586.		
Direct all correspondence to: Customer Number ☒ or Bar Code Label 000027777 OR ☐ Correspondence address below		
Name:		
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City:	State:	ZIP
Country	Telephone:	Fax:

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

NAME OF SOLE OR FIRST INVENTOR:		☐ A petition has been filed for this unsigned inventor	
Given Name (first and middle (if any)) Robert J., III		Family Name or Surname Greene	
Inventor's Signature		Date	
Residence: City Monroville	State PA	Country USA	Citizenship USA
Mailing Address 60 Hedgecroft Drive			
City Monroville	State PA	ZIP 15057	Country USA

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

NAME OF SECOND INVENTOR:		☐ A petition has been filed for this unsigned inventor	
Given Name (first and middle (if any)) H. Michael		Family Name or Surname Moscharuch	
Inventor's Signature		Date	
Residence: City Doylestown	State PA	Country USA	Citizenship German
Mailing Address 106 East Oakland Avenue			
City Doylestown	State PA	ZIP 18001	Country USA

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

NAME OF THIRD INVENTOR:		☐ A petition has been filed for this unsigned inventor	
Given Name (first and middle (if any))		Family Name or Surname	
Inventor's Signature		Date	
Residence: City	State	Country	Citizenship
Mailing Address			
City	State	ZIP	Country

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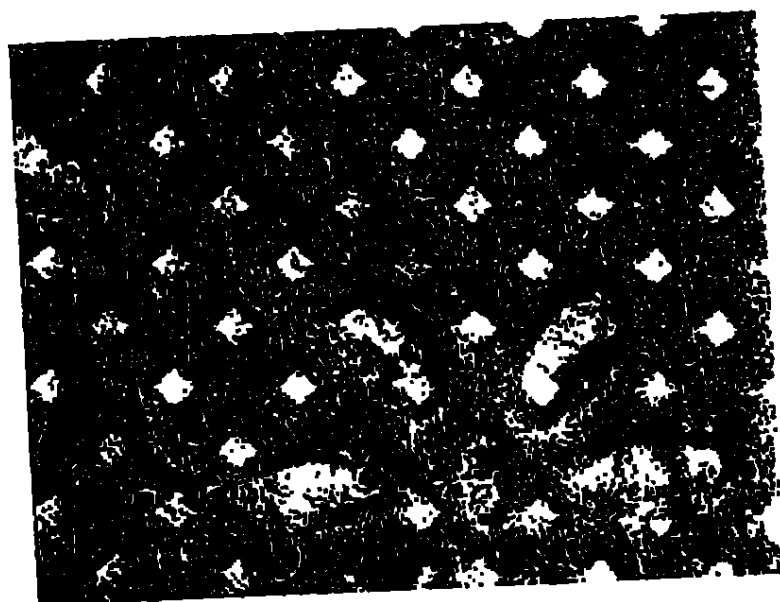


FIG. 1

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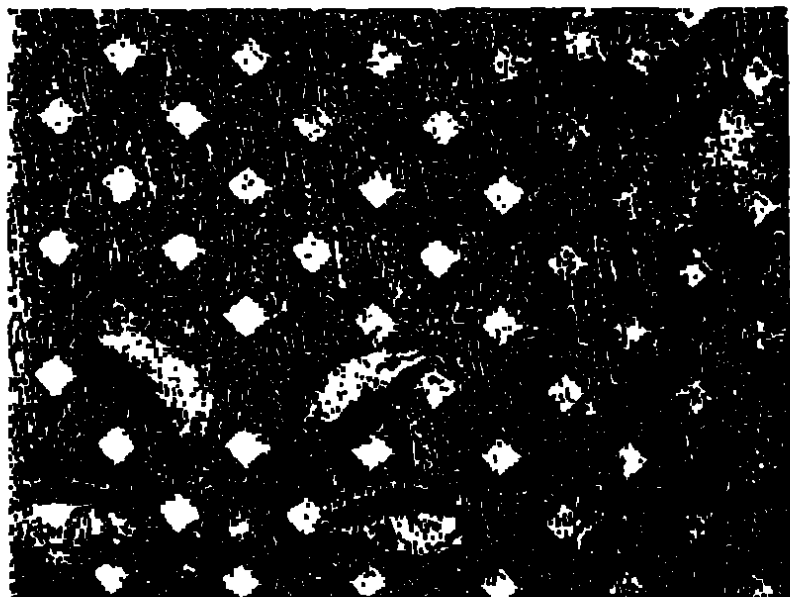


FIG. 2

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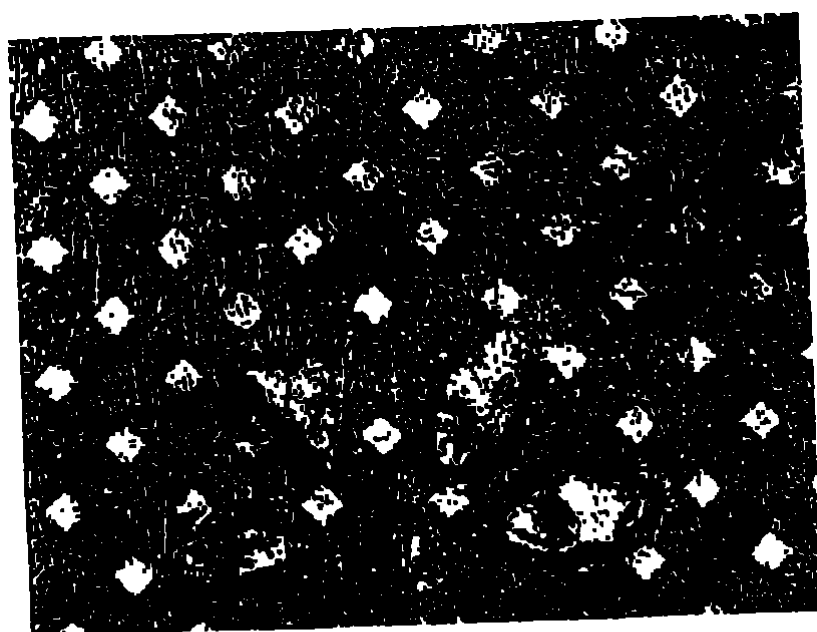


FIG. 3

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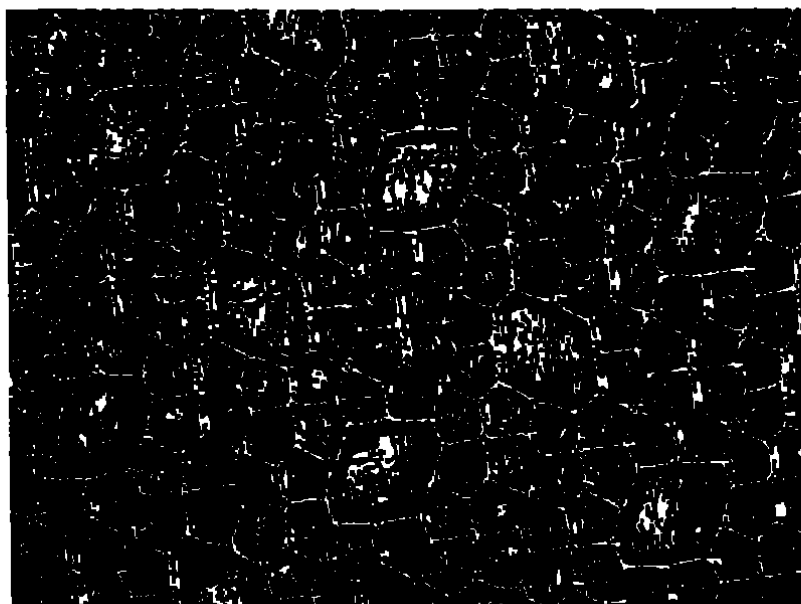


FIG. 4

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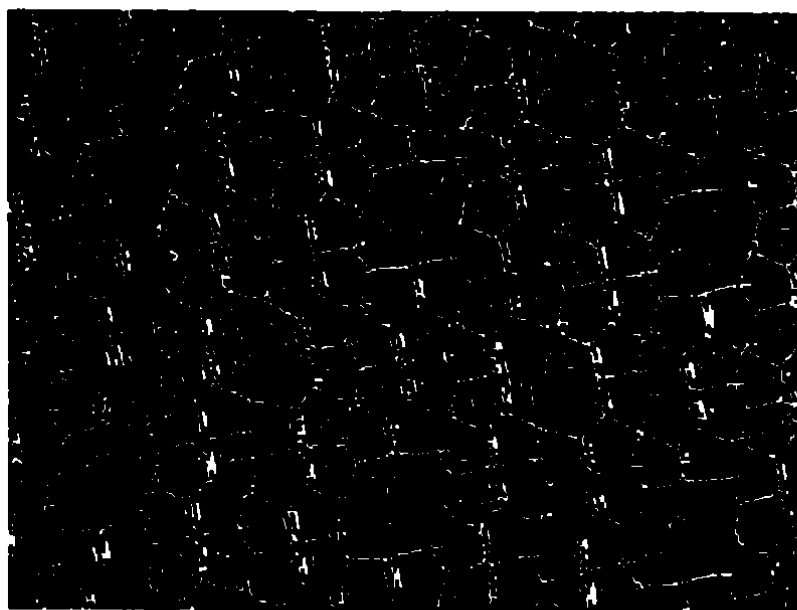


FIG. 5

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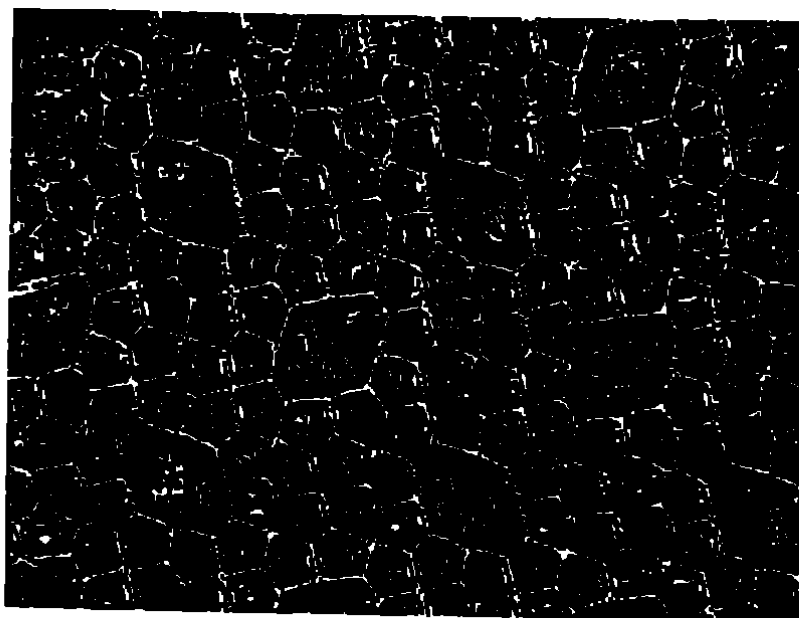


FIG. 6

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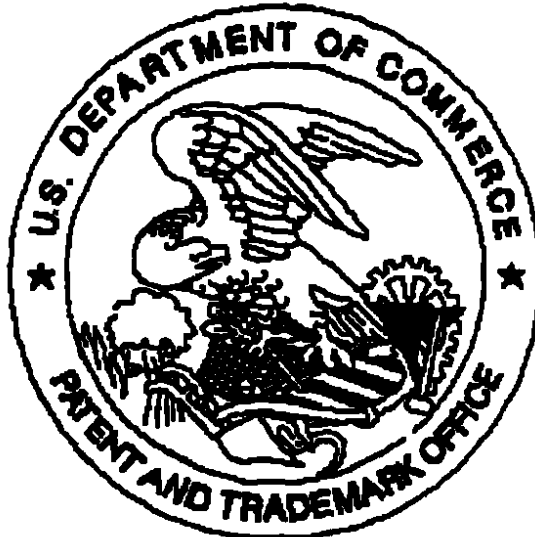
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FIG. 7

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■ Scanned copy is best available. FIGURES 1 THRU 7 ARE VERY DARK.

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2do. EXAMEN DE FORMA PATENTE DE INVENCION

Folio 92

Radicación no 02-27422

Concepto Técnico no 139

Clasificación Internacional de Patentes: A61F15/18

Practicado el examen de acuerdo a lo establecido en el Art. 38 de la Decisión 486 se determinó que esta solicitud de Patente de Invención:

- SI ☒ NO ☐ Contiene un resumen de la invención (Art.26-e).
- SI ☒ NO ☐ Contiene el título o nombre de la invención (Art.27-d).
- SI ☒ NO ☐ Contiene la descripción de la invención (Art.26-b).
- SI ☒ NO ☐ NO ES APLICABLE ☐ Contiene los dibujos necesarios para comprender la invención (Art.26-d)
- SI ☒ NO ☐ Contiene una o más reivindicaciones. (Art.26-c).
- SI ☐ NO ☐ NO ES APLICABLE ☒ Han sido desarrollados los productos y/o procedimientos a partir de recursos genéticos o de sus productos derivados de los que cualquiera de los Países Miembros es país de origen. (Art. 26- h).
- SI ☐ NO ☐ NO ES APLICABLE ☒ Los productos y/o procedimientos han sido obtenidos o desarrollados a partir de los conocimientos tradicionales de las comunidades indígenas, afro americanas, o locales de los países miembros, de acuerdo a lo establecido en la Decisión 391 y sus modificaciones y reglamentaciones vigentes.(Art.26-f).
- SI ☐ NO ☒ La invención se refiere a un producto relativo a un material biológico. (Art.26-J).
- SI ☒ NO ☐ NO ES APLICABLE ☐ La prioridad coincide con la materia reivindicada.
- SI ☒ NO ☐ **CUMPLE LOS REQUISITOS TÉCNICOS**

OBSERVACIONES Y OTROS: SI ☐ NO ☒ ver hoja(s) anexa(s)

EXAMINADOR TÉCNICO
202056

Bogotá D. C., enero 30 de 2004.



2020
Bogotá DC

Folio 93

Doctor
JIMENA ESCOBAR URIBE
Apoderado
MCNEIL-PPG, INC.

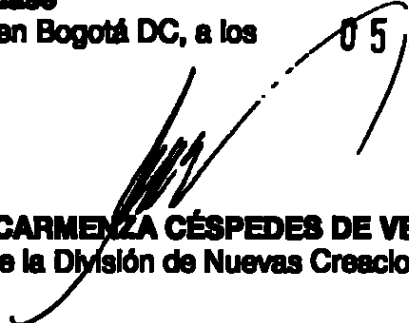
REFERENCIA:	Radicación No.	02-27422
	Trámite	002
	Evento	001
	Actuación	416
	Oficio No.	152
	Folios	001

Teniendo en cuenta que la solicitud de privilegio de patente que se tramita bajo el expediente indicado en la referencia, reúne los requisitos de forma establecidos en los artículos 26 y 27 de la Decisión 486 de la Comisión de la Comunidad Andina, y en las demás disposiciones vigentes sobre la materia, se envía el extracto de la solicitud a la Oficina de Comunicaciones para efecto de su publicación en la Gaceta de Propiedad Industrial, conforme lo establece el artículo 40 de la misma Decisión.

Cúmplase

Dado en Bogotá DC, a los

05 FEB. 2004


ALIX CARMENZA CÉSPEDES DE VERGEL
Jefe de la División de Nuevas Creaciones

202058

DIVISION DE NUEVAS CREACIONES

RADICACIÓN EXPEDIENTE No 02-027422

EL EXTRACTO DE LA PRESENTE SOLICITUD DE PATENTE DE INVENCION

FUE PUBLICADO EN LA GACETA DE PROPIEDAD INDUSTRIAL No 539 DE

FECHA 30 DE ABRIL DE 2004, EL TERMINO HABIL SEÑALADO POR LA LEY

EXPIRA EL 02 DE AGOSTO DE 2004

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**

Bogotá D.C, OCTUBRE DE 2005

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

RADICACIÓN: 2-27422

EDICTO No. 18016

**LA SECRETARÍA GENERAL AD-HOC
HACE SABER:**

Que esta Superintendencia profirió Resolución No. 28342 de 27-OCT-2005. Que el contenido de la parte resolutive es como sigue: El Superintendente de Industria y Comercio.

RESUELVE

ARTICULO PRIMERO: Declarar abandonada la solicitud de privilegio de patente de invención contenida en el expediente de la referencia.

ARTICULO SEGUNDO: Notificar personalmente el contenido de la presente resolución a la doctora Jimena Escobar Uribe, o a quien haga sus veces, en su calidad de apoderada de McNeil-Ppc, Inc., advirtiéndole que contra ella procede el recurso de reposición interpuesto ante el Superintendente de Industria y Comercio, al momento de la notificación o dentro de los 5 días hábiles siguientes a ella.

NOTIFIQUESE Y CUMPLASE
Dada en Bogotá, D.C., a los

27 OCT. 2005

EL SUPERINTENDENTE DE INDUSTRIA Y COMERCIO.


JAIR O ESCOBAR

Para notificar a los interesados, se fija el presente EDICTO en lugar visible al público en la SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO, por el término de (10) diez días hábiles contados a partir de las 8:30 a.m. de hoy.

Secretaría General Ad-Hoc 18-NOV-2005
Secretaría General Ad-Hoc
EDICTO No. 18016

Este edicto se desfija hoy 29-NOV-2005 a las cinco (5:00 p.m.)

