

1. ESCOBAR - URIBE ASOCIADOS

A B O G A D O S

Carrera 11A No. 94-76 - Of. 305 - P.O. Box 94948, Bogotá, D.C. - Colombia

Tel: (571) 6162051 - Fax (571) 6161889

www.escobaruribe.com - info@escobaruribe.com

2791/P.

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

E.

S.

D.

SUPERINDUSTRIA Y COMERCIO

Radicacion: 05010950 00000003

Folios: 41

Fecha (ARD): 2005-05-06 16:21:43

Trazita: 002 PATENTES 0 1 REGISTRAR 329 COMPLET

Dependencia: 2020 DIVISION DE NUEVAS CREACIONES

Ref.: Expediente No. 05010950

Solicitud de Patente a nombre de
McNeil-PPC, Inc.

Yo, JIMENA ESCOBAR URIBE, identificada como aparece al pie de mi firma, domiciliada en la Carrera 11 A No. 94-76, of. 305, obrando como apoderada de la sociedad McNeil-PPC, Inc., domiciliada en Skillman, New Jersey, Estados Unidos de América, solicitante de la patente de la referencia, atentamente me permito presentar copia certificada de la solicitud de patente número 11/039,240 presentada en Estados Unidos de América el día 19 de enero de 2004, con la debida traducción de lo pertinente.

Señor Superintendente,


JIMENA ESCOBAR URIBE
C.C.39.779.452 de Usaquén
T.P. 68228
Cód. 5376

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 24 de 2005

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: 11/039,240

Fecha de Presentación: Enero 19 de 2004

Por la autoridad del
Comisionado de Patentes y Marca

(fdo) P. SWAIN
Oficial Certificador
Sello oficial de la Oficina de Patentes y Marcas de los
Estados Unidos de América

80
86**NÚMERO DE LA INVENCIÓN****REIVINDICACIONES**

- 5 1.- Un artículo para manejo de fluido que comprende: a) una silueta que comprende dos porciones de extremo opuestas y dos bordes longitudinales opuestos que conectan las dos porciones de extremo opuestas; y b) una estructura de núcleo unitaria que consiste esencialmente de un material mixto formado integralmente, el material mixto comprende un primer
- 10 material que comprende fibras fusionables no absorbentes y un segundo material que comprende por lo menos aproximadamente 50% de fibras fusionables no absorbentes dispersas con fibra basada en celulósica absorbente en donde el primer y segundo materiales se integran con la aplicación de calor en los mismos.
- 15 2.- El artículo para manejo de fluido de conformidad con la reivindicación 1, caracterizado además porque la estructura de núcleo unitaria contiene menos de aproximadamente 0.1 grams de fibras basada en celulósica absorbente.
- 20 3.- El artículo para manejo de fluido de conformidad con la reivindicación 1, caracterizado además porque la estructura de núcleo unitaria tiene un peso base de aproximadamente 50 gsm.

4.- El artículo absorbente para manejo de fluido de conformidad con la reivindicación 1, caracterizado además porque comprende una cubierta.

5.- El artículo para manejo de fluido de conformidad con la reivindicación 4, caracterizado además porque la cubierta y la estructura de núcleo unitaria se laminan juntas para formar una estructura laminada.

6.- El artículo para manejo de fluido de conformidad con la reivindicación 5, caracterizado además porque la cubierta y la estructura de núcleo unitaria se laminan juntas mediante adhesivo, grabado en relieve, o combinaciones de los mismos.

7.- El artículo para manejo de fluido de conformidad con la reivindicación 6, caracterizado además porque dichas fibras fusionables no absorbentes en dicho primer material y dichas fibras no absorbentes en dicho segundo material comprenden por lo menos 84% en peso de dicho artículo para manejo de fluido.

8.- El artículo para manejo de fluido de conformidad con la reivindicación 4, caracterizado además porque comprende una barrera.

9.- El artículo para manejo de fluido de conformidad con la reivindicación 8, caracterizado además porque tiene un calibre de menos de aproximadamente 1.5 mm.

10.- El artículo para manejo de fluido de conformidad con la reivindicación 9, caracterizado además porque tiene una capacidad de fluido de aproximadamente 6 g por gramo de fluido o menos.

H
88

11.- El artículo para manejo de fluido de conformidad con la reivindicación 9, caracterizado además porque tiene una resistencia flexural de aproximadamente 40 g o menor.

12.- El artículo para manejo de fluido de conformidad con la
5 reivindicación 9, caracterizado además porque tiene una capacidad de compresión de aproximadamente 45%.

13.- Un método para manejo diario de exudados corporales que comprende: a) proveer un artículo para manejo de fluido que comprende: i) una silueta que comprende dos porciones de extremo opuestas y dos bordes
10 longitudinales opuestos que conectan las dos porciones de extremo opuestas; ii) una estructura de núcleo unitaria que consiste esencialmente en un material mixto integralmente formado, el material mixto comprende un primer material que comprende fibras fusionables no absorbentes y un segundo material que comprende por lo menos aproximadamente 50% de fibras fusionables no
15 absorbentes dispersas con fibra basada en celulósica absorbente en donde el primer y segundo materiales se integran con la aplicación de calor en los mismos, b) unir una superficie inferior del artículo para manejo de fluido a una porción de entrepierna de una prenda íntima de un usuario; c) colocar la superficie opuesta a la superficie inferior del artículo para manejo de fluido en
20 contacto con el perineo del usuario mientras el usuario porta la prenda íntima, y d) reemplazar el artículo para manejo de fluido según sea necesario.

14.- El método para manejo diario de exudados corporales de conformidad con la reivindicación 13, caracterizado además porque la

estructura de núcleo unitaria contiene menos de aproximadamente 0.1 grams de fibras basadas en celulósica absorbente.

15.- El método para manejo diario de exudados corporales de conformidad con la reivindicación 13, caracterizado además porque la
5 estructura de núcleo unitaria tiene un peso base de aproximadamente 50 gsm.

16.- El método para manejo diario de exudados corporales de conformidad con la reivindicación 13, caracterizado además porque el artículo para manejo de fluido además comprende una cubierta.

17.- El método para manejo diario de exudados corporales de
10 conformidad con la reivindicación 16, caracterizado además porque la cubierta y la estructura de núcleo unitaria se laminan juntas para formar una estructura laminada.

18.- El método para manejo diario de exudados corporales de conformidad con la reivindicación 17, caracterizado además porque la cubierta
15 y la estructura de núcleo unitaria se laminan juntas mediante adhesivo, grabado en relieve, o combinaciones de los mismos.

19.- El método para manejo diario de exudados corporales de conformidad con la reivindicación 13, caracterizado además porque las fibras fusionable no absorbentes están presentes en una cantidad de al menos 84%
20 en peso del artículo para manejo de fluido.

20.- El método para manejo diario de exudados corporales de conformidad con la reivindicación 13, caracterizado además porque el artículo para manejo de fluido además comprende una barrera.

21.- El método para manejo diario de exudados corporales de conformidad con la reivindicación 20, caracterizado además porque el artículo para manejo de fluido tiene un calibre de menos de aproximadamente 1.5 mm.

22.- El método para manejo diario de exudados corporales de
5 conformidad con la reivindicación 20, caracterizado además porque el artículo para manejo de fluido tiene una capacidad de fluido de aproximadamente 6 g por g de fluido o menor.

23.- El método para manejo diario de exudados corporales de
conformidad con la reivindicación 20, caracterizado además porque el artículo
10 para manejo de fluido tiene una resistencia flexural de aproximadamente 40 g o menor.

24.- El método para manejo diario de exudados corporales de
conformidad con la reivindicación 20, caracterizado además porque el artículo
para manejo de fluido tiene una capacidad de compresión de por lo menos
15 aproximadamente 45%.

91

PA 1290769

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

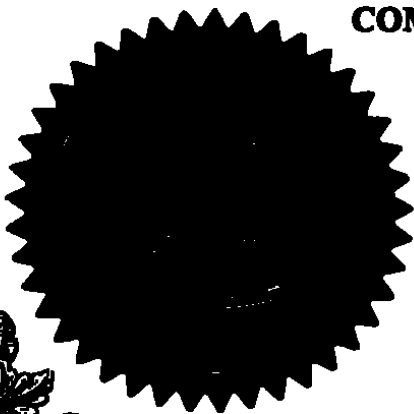
March 24, 2005

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: *11/039,240*

FILING DATE: *January 19, 2005*

By Authority of the
COMMISSIONER OF PATENTS AND TRADEMARKS



P. SWAIN
Certifying Officer

UTILITY PATENT APPLICATION TRANSMITTAL		Attorney Docket No.	PPC-5044-USNP
18351 USPTO only for new nonprovisional applications under 37 CFR 1.52(b)		First Inventor	Maria Luisa M. Barba
		Title	FLUID MANAGEMENT ARTICLE AND METHODS OF USE THEREOF
		Express Mail Label No.	EL 980327407 US
APPLICATION ELEMENTS See MPEP Chapter 800 concerning utility patent application contents.		ADDRESS TO: Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450	
1. ☒ Fee Transmittal Form (e.g., PTO/SB/17) (submit an original and a duplicate for fee processing)		7. ☐ CD-ROM or CD-R in duplicate, large table or Computer Program (Appendix)	
2. ☐ Applicant claims small entity status.		8. Nucleotide and/or Amino Acid Sequence Submission (If applicable, all necessary)	
3. ☒ Specification [Total Pages 22] (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		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	
4. ☒ Drawing(s) (35 USC 113) [Total Sheets 4]		ACCOMPANYING APPLICATION PARTS	
5. Oath or Declaration [Total Pages 3] a. ☒ Newly unexecuted (original or copy) b. ☐ Copy from a prior application (37 CFR 1.63(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).		9. ☐ Assignment Papers (cover sheet & document(s))	
6. ☐ Application Data Sheet. See 37 CFR 1.76		10. ☐ 37 CFR 3.73(b) Statement ☐ Power of Attorney (when there is an assignee)	
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 1.78: ☐ 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 <u>can only</u> be relied upon when a portion has been inadvertently omitted from the submitted application parts.		11. ☐ English Translation Document (If applicable)	
19. CORRESPONDENCE ADDRESS ☒ Customer Number or Bar Code Label 000027777 or ☐ Correspondence Address below		12. ☐ Information Disclosure Statement (IDS)/PTO-1449 ☐ Copies of IDS Citations	
Name: Phillip S. Johnson, Esq. Address: Johnson & Johnson One Johnson & Johnson Plaza New Brunswick, NJ 08933-7003 USA		13. ☐ Preliminary Amendment	
20. TELEPHONE CONTACT Please direct all telephone calls or telefaxes to Paul J. Higgins at: Telephone: (732) 524-1728 Fax: (732) 524-2808		14. ☒ Return Receipt Postcard (MPEP 503) (Should be specifically itemized)	
21. SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED		15. ☐ Certified Copy of Priority Document(s) (If foreign priority is claimed)	
NAME	Paul J. Higgins	16. ☐ Request and Certifications under 35 U.S.C. 122 (b)(2)(B)(i). Applicant must attach form PTO/SB/35 or its equivalent.	
SIGNATURE		17. ☐ Other	
DATE	January 19, 2005		

FEE TRANSMITTAL*Complete if Known*

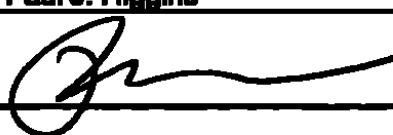
Application Number	Unassigned
Filing Date	January 19, 2005
First Named Inventor	Maria Luisa M. Berba
Group Art Unit	Unassigned
Examiner Name	Unassigned
Attorney Docket Number	PPC-5044-USNP

FEE CALCULATION**CLAIMS AS FILED .**

(1)	(2)	(3)	(4)	(5)
FOR:	NUMBER FILED	NUMBER EXTRA	RATE	BASIC FEE \$300.00
TOTAL CLAIMS	24 - 20 =	4	x 50.00	\$ 200.00
INDEPENDENT CLAIMS	2 - 3 =	0	x 200.00	\$ 0.00
MULTIPLE DEPENDENT CLAIMS	☐	N/A	\$200.00	
			TOTAL FEES	\$ 500.00

METHOD OF PAYMENT

- ☒ Please charge Deposit Account No. 10-0750/PPC-5044-USNP/PJH in the amount of \$500.00. 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/PPC-5044-USNP/PJH. Three copies of this sheet are enclosed.

SUBMITTED BY:		<i>Complete (if applicable)</i>	
Typed or Printed Name	Paul J. Higgins	Reg. No. 44,152	
Signature		Date: January 19, 2005	Deposit Account No. 10-0750

27
99

DOCKET NO. PPC-5044-USNP

IN THE UNITED STATES
PATENT AND TRADEMARK OFFICE

Applicant: Berba et al.

For : FLUID MANAGEMENT ARTICLE AND METHODS OF USE
THEREOF

Express Mail Certificate

"Express Mail" mailing number: EL 960327407 US

Date of Deposit: January 19, 2005

I hereby certify that this complete application, including specification pages, claims, and drawings, 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, P.O. Box 1450, Alexandria, VA 22313-1450.

A Combined Declaration and Power of Attorney will be submitted to the United States Patent and Trademark Office upon receipt of the U.S. Serial Number for this patent application.

Laurie A. Phillips
(Typed or printed name of person mailing paper or fee)

//Laurie A. Phillips//
(Signature of person mailing paper or fee)

7

5 FLUID MANAGEMENT ARTICLE AND METHODS OF USE THEROF

Cross-Reference to Related Applications

This application claims priority to Application No. 60/543,005 filed on February 9, 2004.

Field of the Invention

The present invention relates to a thin fluid management article that combines bulkiness with limited fluid absorbency to achieve a soft, comfortable article suitable for daily management of body exudates.

Background of the Invention

Fluid management articles may be disposable absorbent articles, such as, pantliners, sanitary napkins, interlabial devices, adult incontinence devices, bandages, breast pads, and diapers. These articles typically have a fluid permeable body-facing side and fluid impermeable garment facing side and may include a layer for holding body exudates, e.g., an absorbent core or non-absorbent core, there between. Such articles have traditionally been made from readily available and relatively inexpensive materials, such as, absorbent materials, e.g., cotton fibers, wood pulp fluff, cellulosic tissue, or wadding, or non-absorbent materials, e.g., foam.

Products that have become popular with consumers include those known as ultrathins. Ultrathin products are typically used during menstruation and not for daily management of body exudates. While ultrathin products absorb the same amount or a greater amount of body exudates as a standard sanitary napkin, the caliper, i.e., thickness, of ultrathin products is typically less than standard sanitary napkins. For example, the caliper of a typical ultrathin is about 1.5 mm. Such thinness is achieved in ultrathin products by the use of superabsorbents, including superabsorbent polymers (SAP).

Recently, it has also been found that more and more consumers are wearing absorbent articles on a daily basis and, therefore, do not require the fluid absorption found in ultrathins or in standard sanitary napkins. There is a need in the market for a

8.
96

5 thin absorbent article that is comfortable and discrete while having nominal fluid management.

U.S. Pat. No. 6,440,111 discloses a fluid management article that, in one embodiment, is absorbent free and capable of collecting fluid within existing interstitial spaces or pores. The spaces or pores are formed between non-absorbent fibers or
10 within apertures or bosses. In another embodiment, the article has a cover, a barrier layer and an absorbent core intermediate the cover and barrier. The core contains limited amounts of absorbent material, e.g. 0.7 g. or less. Such articles were found to have a caliper of 3 millimeters or less and a flexural resistance of 120 grams or less. The low total capacity of this embodiment, i.e., 1.2 grams or less, limits the usefulness
15 of this article.

What is lacking in the marketplace is a fluid management article that provides comfort and discretion for every day use having increased absorption properties coupled with a thin, flexible structure.

20 **Brief Description of the Drawings**

FIG. 1 is a top plan view of an absorbent article according to the invention;

FIG. 2 is a cross-sectional view taken across line A-A of the embodiment shown in FIG. 1;

FIG. 3 is a top plan view of one embodiment of an absorbent article according
25 to the invention; and

FIG. 4 is a cross-sectional view taken across line B-B of the embodiment shown in FIG. 3.

Detailed Description of the Invention

30 The fluid management article of the present invention has a bulk that contributes to softness and comfort but has the caliper of an ultrathin and the absorbent capacity to ensure protection during or between menstrual cycles, e.g. for daily use.

As used herein, the term "fluid management article" shall mean a disposable absorbent article, such as, a pantiliner, sanitary napkin, adult incontinence device,
35 breast pad, and, bandage. These articles typically have a fluid permeable body-facing

100
97

5 side and fluid impermeable garment facing side. Additionally, such articles may include an absorbent or non-absorbent core for fluid retention therebetween.

As used herein, the term "absorbent" shall mean any material or composite that absorbs fluid, especially body exudates.

10 As used herein, the term "fluid retention" shall mean the ability of a material to retain and hold fluid. Absorption of the fluid by the material is not necessary for the material to be considered to have fluid retention. Fluid retention may be accomplished merely by holding fluid within voids or spaces between fibers, within apertures, depression, such as, embossments, and the like.

15 As used herein, term "SAP" means particles or fibers that are capable of absorbing many times, at least 10, more preferably 15, and still more preferably over 15, their weight in fluids or bodily exudates, under a pressure of 0.5 psi.

20 As used herein, the phrase "weight percent" means weight of substance per weight of final material as determined under ambient conditions. By way of nonlimiting example, 10 weight percent absorbent cellulose-based material means 10 g/m² cellulose-based material per 100 g/m² basis weight of total material.

25 The present invention relates to a fluid management article designed and configured to be worn adjacent a user's perineum, which is useful for collecting and/or absorbing low volumes of bodily fluids. As seen in Figures 1 and 2, fluid management article 10 may be any desired configuration in terms of shape and construction; but, generally speaking, it includes a cover 20 having body facing surface 22, a backsheet or barrier 40 having a garment facing surface 42, and a unitized core structure 50 . The fluid management article 10 has a first end portion 24 in opposed to a second end portion 26 and a first longitudinal edge 32 opposed to a second longitudinal edge 34, wherein the edges connect the two opposed end portions.

30 Referring to FIG. 2, in this embodiment, the fluid management article includes a cover 20 having body facing surface 22 and a barrier 40 having a garment facing surface. The cover 20 may have the following, non-limiting configurations, a nonwoven web, a woven web, an apertured film, an apertured formed film, a substrate having flocked fibers thereon, a lamination of multiple layers of films or fibrous webs
35 and combinations thereof, or the like. Unitary core structure 50, which is between

5 cover 20 and barrier 40, may contain low amounts of absorbent material dispersed within the non-absorbent material.

10 In one particular embodiment of this invention, the fluid management article 10 is shown in Figures 3 and 4. In this embodiment, the fluid management article 10 includes a cover 20 having body facing surface 22 and a barrier 40 having a garment facing surface. The cover 20 may have the following, non-limiting configurations, a nonwoven web, a woven web, an apertured film, an apertured formed film, a substrate having flocked fibers thereon, a lamination of multiple layers of films or fibrous webs and combinations thereof, or the like. Unitary core structure 50, which is between cover 20 and barrier 40, may contain low amounts of absorbent material dispersed within the non-absorbent material. The cover 20 and unitary core structure 50 are embossed together, or co-embossed, using a pattern of dots 60. In addition, this particular embodiment, a series of flowers 90 are embossed on the cover prior to co-embossing the cover and the unitary core structure 50.

20 Cover

The fluid management article 10 of the present invention includes a cover layer 20 overlaying the absorbent material. The exterior of the cover forms the body-facing surface 22 of the disposable absorbent article. As known by those skilled in the art, the cover layer 20 may be formed from any fluid pervious material that is generally compliant, soft feeling, and non-irritating to the user's skin and permits fluid to penetrate to the absorbent core, which retains the fluid. The cover layer 20 generally functions to transport fluid away from the wearer into the absorbent article. In this manner, fluid and moisture are removed from contacting the wearer, thus making the wearer feel dry and comfortable. In addition to transporting fluid, the cover layer 20 may also absorb and/or retain fluid as well.

The cover 20 can be made from any of the materials conventional for this type of use. Non-limiting examples of suitable materials that can be used as the cover layer 20 are woven and nonwoven fabrics formed fibers or filaments of cellulose, polyester, polyethylene, polypropylene, nylon, rayon fibers and mixtures thereof or the cover layer may be an apertured thermo-plastic film and formed films. Other materials used in

5 making covers layer 20 include gauze or any known porous material with a suitable body contacting surface, including, but not limited to nonwoven webs, plastic nets, and the like. The cover layer 20 could also be made from a fibrous nonwoven composite of bicomponent fibers and pulp fluff.

10 Bicomponent fibers are known in the art and are composed of two polymers with different melting points. At least a portion of the outer surface of each bicomponent fiber has the lower melting polymer. The two polymers may be arranged such that a cross-section of the fiber shows the two polymers in a side-by-side array. Alternatively, the polymers may be positioned in a so-called sheath/core arrangement, in which a core of higher melting polymer is surrounded by a sheath of lower melting
15 polymer.

The cover may be made by a process of bonding a nonwoven conjugate fiber web in which heated air, which is sufficiently hot to melt one of the polymers of the multicomponent fibers, is forced through the web. This process is referred to as through air bonding. The melting and resolidification of the polymer provides the
20 bonding between the fibers to integrate the web. The air velocity is typically between 100 and 500 feet per minute (30 and 152 m/min) and the dwell time may be as long as 6 seconds. Through air bonding has relatively restricted variability and since through-air bonding requires the melting of at least one component to accomplish bonding, it is particularly useful in connection with webs of conjugate fibers or those which include
25 an adhesive. In the through-air bonder, air having a temperature above the melting temperature of at least one of the exposed components is directed through the web and into a perforated roller supporting the web. Alternatively, the through-air bonder may be a flat arrangement wherein the air is directed vertically downward onto the web. The operating conditions of the two configurations are similar, the primary difference being
30 the geometry of the web during bonding.

A useful bicomponent fiber is a 2.0 denier, 45 mm long staple fiber made of a polyester core and a high density polyethylene sheath. Similar fibers (polyethylene sheath and polypropylene core) are available as Danaklon ES-C or ES Bico (Danaklon A/S, Varde Denmark) or ES Fiber GuangZhou Co. Ltd. (Chisso). Pulp fibers may be
35 obtained as IP "SUPERSOFT" ELM supplied by the International Paper Company

5 (Memphis, Tennessee), "RAYFLOC" E-Type Cellulosic Fluff Pulp, (ITT Rayonier), or
Korsnas Vigorfluf-EN White (Korsnas, Gavle, Finland). Georgia Pacific EF-100, or
Weyerhaeuser NB416L, treated or untreated pulp.

The cover layer 20 may optionally be treated with surfactant to manipulate the
hydrophobicity/hydrophilicity thereof to facilitate optimal fluid transport properties.

10 The fibers or other materials that make up the cover layer 20 should not collapse or lose
their resiliency when subjected to body fluid. The fibers may be oriented by a carding
process and thermally bonded via embossing. The fiber or filament can be single
denier or multidenier.

15 The cover may be a single layer or be made from multiple layers. The thickness
of the cover may vary from about 0.001 inch (0.025 mm) to about 0.200 inch (5.000
mm), depending on the material chosen. The weight of the body facing layer material
preferably is between about 5 and about 150 gsm, more preferably between 15 and 50
gsm and most preferably between 25 and 35 gsm. The cover material is preferably
though air bonded. Low denier fibers are preferred to form the fiber web and the
20 temperature of the hot air may be adjusted to bond only the material having the lower
melting point. This creates a softer and loftier fiber web.

In one embodiment, the cover is a single layer made from a 2d, 45 mm
bicomponent fiber made of a polypropylene core and a high density polyethylene sheath
having a weight of 30 gsm.

25 In another embodiment, the cover is a single layer made from 1.5d, 45 mm
bicomponent fiber made from polypropylene core and high density polyethylene sheath
having a weight of 25 gsm.

Any material with soft or cloth-like features may also be used for the body
facing layer. Such material includes nonwoven, such as spunlace, woven, and knitted
30 materials. Optionally, the material used for the body-facing layer may include binders,
such as thermoplastic binder fibers and latex binders.

In one embodiment, the cover is a single sheet of material having a width
sufficient to form the body-facing surface of the absorbent article. In another
embodiment, the cover has at least two layers and is made of materials described in the
35 core section.

64
101

5 The cover, whether a single layer or multiple layers, may also retain fluid. If a separate core layer is used, the body facing layer may be longer and wider than the core or be of similar size as the core.

 Generally, the optional cover layer 20 is a single sheet of material having a width sufficient to form the body-facing surface 22 of the fluid management article.

10 The cover layer 20 may be longer and wider than the optional core.

 The cover layer 20 may be embossed with shapes within a given area. For example, a series or a number of features, e.g., circles, triangles, squares, lines, honeycomb, diamond, floral, 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. The embossed features may be in a repetitive pattern. The embossed pattern may contribute to the softness and drapeability of the fluid management article. The embossments may also serve to hold fluid or to transfer fluid to the core. In an embodiment shown in Figure 3, flower 90 is embossed in a pattern on cover 20.

20

Unitary Core Structure

 Nonwoven webs are preferred as starting materials to form the unitary core structure 50. Suitable fibers useful for making such nonwoven webs include polyolefin, polyester fibers, bicomponent fibers, and mixtures thereof. Such fibers may be fusible fibers.

25

 In one embodiment, two materials are joined by through air bonding to form an integrally formed composite material 55 that can be used in the unitary core structure 50. In one embodiment, the composite material 55 includes a first material 52 having at least about 50% non-absorbent fusible fibers interspersed with absorbent cellulosic based fiber and a second material 54 having non-absorbent fusible fibers wherein the first and second materials are laminated through air through bonding process.

30

 As seen in Figure 4, the fibers making up first material 52 and second material 54 are preferably of at least two different deniers, such as, 3 and 2 denier ("d") fibers, respectively. The first material 52 may contain an absorbent fiber, such as, rayon in amounts equal to or less than about 25 weight percent unitary core structure 50. In

35

5 one embodiment, the first material 52 contains about 0.086 grams of 3.3d, 27 mm rayon fibers from Danufil V from Acordis Kelheim, GmbH, dispersed throughout 3d, 45 mm air through bonded bicomponent (polypropylene/polyethylene fibers) web having a weight of 25 gsm available from Guang Zhou ES Fiber Co., Ltd. The second material 54 is a 2d, 45 mm, through air bonded bicomponent fibers (polypropylene/polyethylene
10 fibers) web having a weight of 25 gsm available from Guang Zhou ES Fiber Co., Ltd. The two materials 52 and 54 are integrated using heat to form a composite material 55 having an overall weight of 50 gsm wherein no visible distinction between materials 52 and 54, i.e., the materials 52 and 54 are integrally joined to form composite material 55. Composite material 55 has fluid retention properties.

15 The nonwoven webs used as materials for the composite materials have a basis weight from about 20 to about 200 grams per square meter ("gsm"), preferably from about 25 to about 50 grams per square meter. In one embodiment, the first material 52 and the second material 54 have basis weight of 25 gsm, respectively, to yield a composite material of 50 gsm.

20 Raw materials, such as, individual fibers, that are used in the manufacture of the unitary core structure 50, may optionally be treated with a surface active agent, e.g., a surfactant, to render the structure more hydrophilic or hydrophobic as desired.

The unitary core structure 50 of the present invention may contain any known absorbent materials including, but not limited to, absorbent fibers, such as, cellulose
25 fibers, including, but not limited to wood pulp, regenerated cellulose fibers, e.g., rayon and cotton fibers, rayon fibers and the like; other naturally occurring absorbent materials, such as, sphagnum or peat moss; and other synthetic absorbent materials. Additionally, the unitary core structure 50 may include one or more of the following: binders, such as, thermoplastic and latex, odor-controlling compounds, e.g., perfumes,
30 EDTA (ethylenediaminetetraacetic acid), anti-microbial agents, wetting agents, wetness indicator material, materials for administering or delivering medicaments, such as encapsulated medicaments, and materials for maintaining skin moisture, such as encapsulated moisturizers.

5 The core may include only materials, such as, a hot melt adhesive containing fluid absorbing polymers. One example of such a material is disclosed in EP 1 013 291 A1, the disclosure of which is herein incorporated in entirety by reference.

10 A representative, non-limiting list, of absorbent material useful in the unitary core structure 50 includes, but is not limited to, natural cellulose, such as, cotton and wood pulp; regenerated cellulose, such as rayon and cellulose acetate; peat moss, loofa; and the like. One skilled in the art would readily appreciate that a blend of two or more types of absorbent materials may be used to optimize the performance of fluid management articles used in varying conditions. The absorbent material may be uniformly dispersed within the unitary core structure 50, or may alternatively be placed
15 in discrete patterns, or in gradients. For example, in an effort to help reduce side leakage, absorbent material may be placed in high concentrations around peripheral portions of the core.

20 The unitary core structure 50 may have a blend of absorbent materials and thermoplastic fibers, for example to provide structural integrity to the formed structure or for heat sealability to additional layers, such as a barrier layer film. Useful thermoplastic fibers are polyolefins, such as polypropylene and polyethylene fibers, and bicomponent fibers. The thermoplastic fibers may be bi-component or multi-component fibers having a first component having a first melting temperature and two or more additional components having different melting temperatures to that of the first
25 melting temperature. Bi-component fibers are typically configured sheath-core or side-by-side. Suitable bi-component fibers include polyester/polyethylene and polypropylene/polyethylene.

30 In one aspect, the present invention can provide a fluid management article containing at most 12 weight percent of an absorbent material such as cellulose-based material.

35 As previously stated, the cover 20 and unitary core structure 50 may be joined together by co-embossing. The dots 60 will provide additional fluid retaining spaces and may contribute to the overall softness in terms compressibility. One can calculate compressibility as follows: thickness of uncompressed material minus the thickness of the compressed material (2.5 pounds per square inch) multiplied by 100 and dividing

104

5 the product by the thickness of the uncompressed material. The dots 60 may also aid in providing flexibility to the finished article; the embossed dots allow the article to bend without surface deformation or wrinkling.

Barrier

10 The barrier, also called backsheet 40, may be located adjacent to core 50 (shown Figures 2 and 4) and also to the cover 20, especially if the absorbent core is smaller than the cover and barrier (not shown). The barrier 40 of the present invention is a body fluid impervious material, which is at least substantially impermeable to liquids. Its exterior forms the garment-facing surface of the absorbent article. The
15 barrier 40 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 nonwoven fabric material, or a flexible foam, such as polyurethane or cross-linked polyethylene.

20 Optionally, the barrier 40 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
25 characteristics provide a liquid surface repellent to the penetration of liquids may also be used to provide a breathable backsheet.

The fluid management articles of the present invention are intended to manage low volumes of fluid encountered both menstrually and intermenstrually, i.e, daily. Preferably, the unitary core structure of the various embodiments of the present
30 invention have less than 0.1 grams of absorbent fibers, and the fluid management article has a total capacity of 6.0 grams or less, as determined by the total capacity test defined in the test methods section,

In addition to fluid capacity, the articles of the present invention are designed to be extremely comfortable and non-obtrusive to a user. The collective design attributes
35 are intended to provide daily confidence without compromise to lifestyle, including

105

5 activity and clothing. Two variables, which may affect the before mentioned design characteristics, are article caliper, compressibility and flexibility. Preferably the articles have a caliper of 2.0 millimeters or less, and more preferably 1.5 millimeters or less. Flexibility is measured by a flexural resistance test, described in great detail in the test methods section. Preferably, the articles have a flexural resistance of about 40 grams or
10 less, and more preferably about 35 g or less. Preferably the articles have a compressibility of at least 45% as determined by compressibility test defined in the test methods section.

Bonding Methods

15 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 20 may be adhered to the topside of the absorbent core 50. The underside of the absorbent core 50 may be adhered to the topside of the barrier layer 40. Any methods known in the art, such as, fusion bonding, adhesive attachment, or by any other securement means can be
20 used to secure the individual layers together to form the final absorbent article. Included within such methods are coembossing, thermobonding, mechanical bonding, and the like. Fusion bonding includes heat bonding, ultrasonic bonding, and the like.

Adhesive is typically used to attach the layers into a single absorbent article. For example, in one embodiment, the body facing cover 10 is attached to the barrier
25 layer 50 with adhesive NW1023 available from HLB Fuller and Company (St. Paul, MN). The adhesive may be applied in any method.

Adhesive may include pressure sensitive adhesive that is applied as strips, swirls, or waves, and the like. As used herein, the term pressure-sensitive adhesive refers to any releasable adhesive or releasable tenacious means. Suitable adhesive
30 compositions, include, for example, water-based pressure-sensitive adhesives such as acrylate adhesives. Alternatively, the adhesive composition may include adhesives based on the following: emulsion or solvent-borne adhesives of natural or synthetic polyisoprene, styrene-butadiene, or polyacrylate, vinyl acetate copolymer or combinations thereof; hot melt adhesives based on suitable block copolymers - suitable
35 block copolymers for use in the invention include linear or radial co-polymer structures

5 having the formula (A-B)_x wherein block A is a polyvinylarene block, block B is a
poly(monoalkenyl) block, x denotes the number of polymeric arms, and wherein x is an
integer greater than or equal to one. Suitable block A polyvinylarenes include, but are
not limited to Polystyrene, Polyalpha-methylstyrene, Polyvinyltoluene, and
combinations thereof. Suitable Block B poly(monoalkenyl) blocks include, but are not
10 limited to conjugated diene elastomers such as for example polybutadiene or
polyisoprene or hydrogenated elastomers such as ethylene butylene or ethylene
propylene or polyisobutylene, or combinations thereof. Commercial examples of these
types of block copolymers include KratonTM elastomers from Shell Chemical Company,
VectorTM elastomers from Dexco, SolpreneTM from Enichem Elastomers and
15 StereonTM from Firestone Tire & Rubber Co.; hot melt adhesive based on olefin
polymers and copolymers where in the olefin polymer is a terpolymer of ethylene and a
comonomers, such as vinyl acetate, acrylic acid, methacrylic acid, ethyl acrylate, methyl
acrylate, n-butyl acrylate vinyl silane or maleic anhydride. Commercial examples of
these types of polymers include Ateva(polymers from AT plastics), Nucrel(polymers
20 from DuPont), Escor (from Exxon Chemical).

Additionally, dots or depressions 60 formed from the co-embossing allow the
absorbent article to be rolled into a compact structure without the cover surface
wrinkling. Upon unrolling and removal of the release paper, the absorbent article does
not retain "memory" of being rolled. In other words, the absorbent article lays flat or
25 conforms to the article to which it is placed on, in this instance, the crotch portion of a
garment such as underwear.

The absorbent article of the present invention 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. Various methods of attaching absorbent articles may be used. For
30 example, chemical means, e.g., adhesive, and mechanical attachment means, e.g., clips,
laces, ties, and interlocking devices, e.g., snaps, buttons, VELCRO (Velcro USA, Inc.,
Manchester, NH), zipper, and the like are examples of the various options available to
the artisan.

Adhesive may be applied to the garment-facing side of the absorbent article.
35 The positioning adhesive may be any adhesive known in the art. As a non-limiting

110
107

5 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
10 setting thermoplastic "hot melt," rubber adhesives, two-sided adhesive tape, and the like.

Where positioning adhesive is used on the garment-facing side of the barrier layer 40, a release strip may be applied to protect the adhesive on the absorbent article prior to attaching the absorbent article to the crotch. The release strip can be formed
15 from any suitable sheet-like material that adheres with sufficient tenacity to the adhesive to remain in place prior to use but which can be readily removed when the absorbent article is to be used. Optionally, a coating may be applied to release strip to improve the ease of removing the release strip from the adhesive. Any coating capable of achieving this result may be used, e.g., silicone. Because typical release strips have
20 memory properties, it is contemplated that while a release strip can be used with the rolled disposable article of the present invention, the memory properties of the disposable absorbent article of the present invention are separate and distinct from any memory properties of the release paper.

25 Wings

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 are 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
30 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, 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.

11
100

5 In addition, there may be one or a plurality of wings incorporated into the present invention. Where opposed wings are present along the longitudinal edges of the absorbent article of the present invention, such wings may be directly opposed or may be offset from the wings located along the opposite longitudinal edge of the absorbent article.

10 When present, the wings may preferably be folded inwardly prior to rolling the disposable absorbent article.

Overwrap

15 The rolled absorbent article can be maintained in a rolled configuration using a wrapper, a ring, a hook and loop system, adhesives and mixtures thereof. For example, a wrapper made of standard cellophane or polypropylene films and including any heat sealable material may be used.

20 The overwrap can also be embossed (including microembossing), electronically altered (including corona discharge treatments), coated (including vapor deposition, and sputtering), laminated (including film/nonwoven laminate) and the like.

 Optionally, the overwrap may be used as a release strip and as such shall coating may be applied to the overwrap to improve the ease of removability from the adhesive. Any coating capable of achieving this result may be used, e.g., silicone.

25 In addition, slip agents such as fluid lubricants or solid layers with a reduced coefficient of friction may be applied to the overwrap package at any appropriate portion of the manufacturing process.

Miscellaneous

30 Any or all of the cover, absorbent layer, transfer layer, backsheet layer, and adhesive layers may be colored and/or transparent. Such coloring includes, but is not limited to, white, black, red, yellow, blue, orange, green, violet, and mixtures thereof. Color may be imparted according the present invention through dying, pigmentation, and printing. Colorants used according the present invention include dyes and inorganic and organic pigments. The dyes include, but are not limited to,
35 anthraquinone dyes (Solvent Red 111, Disperse Violet 1, Solvent Blue 56, and Solvent

5 Green 3), Xanthene dyes (Solvent Green 4, Acid Red 52, Basic Red 1, and Solvent Orange 63), azine dyes (Jet black), and the like.

Inorganic pigments include, but are not limited to, titanium dioxide (white), carbon black (black), iron oxides (red, yellow, and brown), chromium oxide (green), ferric ammonium ferrocyanide (blue), and the like.

10 Organic pigments include, but are not limited to diarylide yellow AAOA (Pigment Yellow 12), diarylide yellow AAOT (Pigment Yellow 14), phthalocyanine blue (Pigment Blue 15), lithol red (Pigment Red 49:1), Red Lake C (Pigment Red), and the like.

15 Also contemplated herein include asymmetrical and symmetrical articles having parallel longitudinal edges, dog bone- or peanut-shaped, circular, oval and the like.

The silhouette of the disposable fluid management article of the present invention may be configured to be used with conventional underwear or may be configured to conform to thong garments. As used herein, the term thong includes, but is not limited to, thong underwear, thong swimming suit bottom, G-strings, Rio cut
20 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 fluid management article may include other known materials, layers, and additives, such as, foam, net-like material, perfumes,
25 medicaments or pharmaceutical agents, moisturizers, odor control agents, and the like. The fluid management article can optionally be embossed with decorative designs.

The fluid management article 10 may be made from any of the processes known to one of ordinary skill in the art. For example, a continuous length of cover material may be laminated to a continuous length of absorbent material. This laminate may then
30 be laminated to a backsheet to form a fluid management article. The fluid management article can then be rolled up and over-wrapped to form a single unitary or individual absorbent article. In another embodiment, the cover is laminated to the backsheet and then rolled up and over-wrapped.

In one embodiment of this invention, the fluid management article 10 may be
35 drapeable, that is having a flexural resistance of about 40g. or less as tested by the

5 **Modified Circular Bend Test, ASTM 4032-82 and as described in USSN 10/025299, Drapeable Absorbent Article, filed 12/19/01, the contents herewith incorporated in entirety by reference. In another embodiment, the fluid management article 10 has a cover 20, a backsheet 40, and a flexural resistance of less than 35 g.**

10 **Once the absorbent article is unrolled and the release paper removed, it can be placed onto the user's underwear. This particular embodiment conforms to the underwear and is not noticeable to the user.**

The entire contents of all patents and patent applications listed or described above are incorporated herein by reference.

15 **Example**

Fluid management articles were constructed using the following structures and steps:

20 **a. 50% 3.3d 27 mm (or specific weight) rayon Danufil V from Acordis Kelheim, GmbH is dispersed within a blend of 3d 45 mm bicomponent fibers made of polypropylene and polyethylene is through air bonded to form a 25 gsm composite nonwoven web available from Guang Zhou ES Fiber Co., Ltd. This forms the first layer of the core. The second layer of the core is a 25 gsm composite nonwoven web of hot through air bonded 2d 45 mm PP/PE blend available from Guang Zhou ES Fiber Co., Ltd. The first layer and second layer are bonded together by through air bonding process to form a unitary structure having a final basis weight of 50 gsm. This unitary structure forms the core.**

30 **b. The cover is formed from a 30 gsm nonwoven through air bonded web made from 2d 45 mm PP/PE blend. The cover is embossed with a surface pattern such as a flower.**

c. The barrier is a microembossed white film, 23 gsm, of polyethylene and polypropylene from - Foshan Huahan Sanitary Material Ltd.

111

5 The cover and core are first joined together by adhesive HB Fuller NW1023 available from H.B Fuller and Company (St. Paul, MN) and then co-embossed at two stations—the first station being the holes and the second station is the flower embossing.

10 The cover/core layers are joined to the barrier with adhesive HB Fuller NW1023 available from H.B Fuller and Company (St. Paul, MN) and the outer perimeter of the article is crimped then cut into the desired silhouettes....

15 Positioning adhesive HB Fuller 1662x or HB Fuller 1138 is placed on the silicone-coated side of the release film/ overwrap and subsequently transferred to the garment facing surface of the barrier then trifolded.

20 From the foregoing description, one skilled in the art can ascertain the essential characteristics of this invention, and without departing from the spirit and scope thereof, can make various changes and modifications. Embodiments set forth by way of illustration are not intended as limitations on the variations possible in practicing the present invention.

112

5 Claims

What is claimed is:

- 1. A fluid management article comprising**
 - a) a silhouette comprising two opposed end portions and two opposed longitudinal edges connecting the two opposed end portions; and**
 - 10 b) a unitary core structure consisting essentially of an integrally formed composite material, the composite material comprising a first material comprising non-absorbent fusible fibers and a second material comprising at least about 50% non-absorbent fusible fibers interspersed with absorbent cellulosic based fiber wherein the first and second materials are integrated with the application of heat thereto.**
- 15 2. A fluid management article of claim 1, wherein the unitary core structure contains less than about 0.1 grams absorbent cellulosic based fibers.**
- 20 3. A fluid management article of claim 1, wherein the unitary core structure has a basis weight of about 50 gsm.**
- 4. A fluid management absorbent article of claim 1, further comprising a cover.**
- 25 5. A fluid management article of claim 4, wherein the cover and unitary core structure are laminated together to form a laminated structure.**
- 6. A fluid management article of claim 5, wherein cover and the unitary core structure are laminated together by adhesive, embossing, or combinations thereof.**
- 30 7. A fluid management article of claim 6, wherein said nonabsorbent fusible fibers in said first material and said nonabsorbent fibers in said second material comprise at least 84% by weight of said fluid management article.**
- 8. A fluid management article of claim 4 further comprising a barrier.**

35

- 5 9. A fluid management article of claim 8, having a caliper of less than about 1.5 mm.
10. A fluid management article of claim 9, having a fluid capacity of about 6 g per g of fluid or less.
- 10 11. A fluid management article of claim 9 having a flexural resistance of about 40 g or less.
12. A fluid management of claim 9 having a compressibility of at least about 45%.
- 15 13. A method for daily management of body exudates comprising
 - (a) providing a fluid management article comprising
 - 20 i) a silhouette comprising two opposed end portions and two opposed longitudinal edges connecting the two opposed end portions; and
 - ii) a unitary core structure consisting essentially of an integrally formed composite material, the composite material comprising a first material comprising non-absorbent fusible fibers and a second material comprising at least about 50% non-absorbent fusible fibers interspersed with absorbent cellulosic based fiber wherein the first and second materials are integrated with the application of heat thereto,
 - 25 (b) attaching a bottom surface of the fluid management article to a crotch portion of an undergarment of a user;
 - (c) positioning the surface opposite the bottom surface of fluid management article in contact with the user's perineum while the user wears the underwear,
 - 30 and
 - (d) replacing the fluid management article as needed.
14. A method for daily management of body exudates comprising of claim 13, wherein the unitary core structure contains less than about 0.1 grams absorbent
35 cellulosic based fibers.

114

5

15. A method for daily management of body exudates comprising of claim 13, wherein the unitary core structure has a basis weight of about 50 gsm.

10 16. A method for daily management of body exudates of claim 13, wherein the fluid management article further comprises a cover.

17. A method for daily management of body exudates of claim 16 wherein the cover and unitary core structure are laminated together to form a laminated structure.

15 18. A method for daily management of body exudates of claim 17, wherein the cover and the unitary core structure are laminated together by adhesive, embossing, or combinations thereof.

20 19. A method for daily management of body exudates of claim 13, wherein the nonabsorbent fusible fibers are present in an amount of at least 84% weight of the fluid management article.

20. A method for daily management of body exudates of claim 13, wherein the fluid management article further comprising a barrier.

25

21. A method for daily management of body exudates of claim 20, wherein the fluid management article has a caliper of less than about 1.5 mm.

30 22. A method for daily management of body exudates of claim 20, wherein the fluid management article has a fluid capacity of about 6 g per g of fluid or less.

23. A method for daily management of body exudates of claim 20, wherein the fluid management article has a flexural resistance of about 40 g or less.

#8
115

- 5 24. A method for daily management of body exudates of claim 20, wherein the fluid management article has a compressibility of at least about 45%.

5 Abstract

A fluid management article and a method for daily management of body exudates wherein the fluid management article includes a silhouette having two opposed end portions and two opposed longitudinal edges connecting the two opposed end portions; and a unitary core structure consisting essentially of an integrally formed composite material, the composite material including a first material comprising non-
10 absorbent fusible fibers and a second material comprising at least about 50% non-absorbent fusible fibers interspersed with absorbent cellulosic based fiber wherein the first and second materials are integrated with the application of heat thereto and replacing the article as needed.

Please type a plus sign (+) inside this box ☐

PTO/SB/01 (10-00)

Approved for use through 10/31/2002. OMB 0851-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

DECLARATION AND POWER OF ATTORNEY FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.53)		Attorney Docket Number	PPC-5044-USNP	
		First Named Inventor	Maria Luisa M. Barba	
		COMPLETE IF KNOWN		
		Application Number	Unassigned	
		Filing Date	January 10, 2005	
		Group Art Unit	Unassigned	
		Examiner Name	Unassigned	
☒ Declaration Submitted with Initial Filing OR ☐ Declaration Submitted after Initial Filing (Surcharge (37 CFR 1.16(e)) required)				
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:				
FLUID MANAGEMENT ARTICLE AND METHODS OF USE THEREOF (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:				

121
118

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 data sheet PTO/SB/028 attached hereto.
60/543,005	February 9, 2004	
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, § 1.56(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: <u>Name</u> <u>Registration Number</u>		
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 Paul J. Higgins at telephone number (732) 524-1728.		
Direct all correspondence to: ☒ Customer Number 000027777 OR ☐ Correspondence address below		
Name:		
Address:		
Address:		
City:	State:	ZIP
Country	Telephone:	Fax:

119

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)) MARIA LUISA M.		Family Name or Surname BERBA		
Inventor's Signature		Date		
Residence: City	New Manila, Quezon City	State	Country	Philippines
Citizenship Philippines				
Mailing Address Woodside Homes C18 G1, Dona Hemady Street				
City	New Manila, Quezon City	State	ZIP	1112
Country Philippines				
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)) JOSEPH		Family Name or Surname REN		
Inventor's Signature		Date		
Residence: City	Shanghai	State	Country	China
Citizenship China				
Mailing Address No. 544, 2199 GuDai Road				
City	Shanghai	State	ZIP	201100
Country China				
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)) ANA MARIA R.		Family Name or Surname MARCELO		
Inventor's Signature		Date		
Residence: City	Antipolo Rizal	State	Country	Philippines
Citizenship Philippines				
Mailing Address 15 Aguiraldo Street, Katarungan Village				
City	Antipolo Rizal	State	ZIP	1870
Country Philippines				

123
120

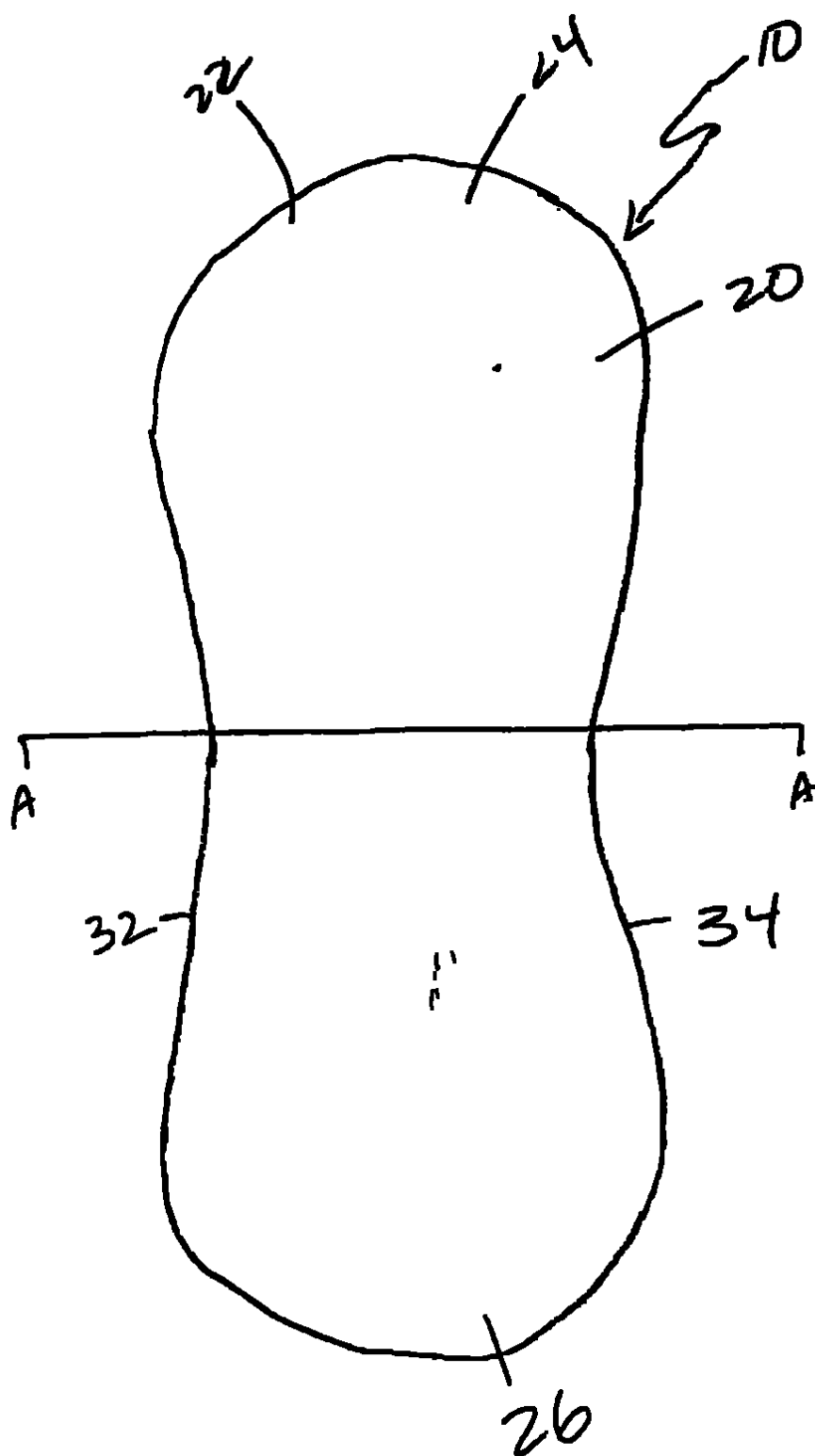


FIG. 1

BEST AVAILABLE COPY

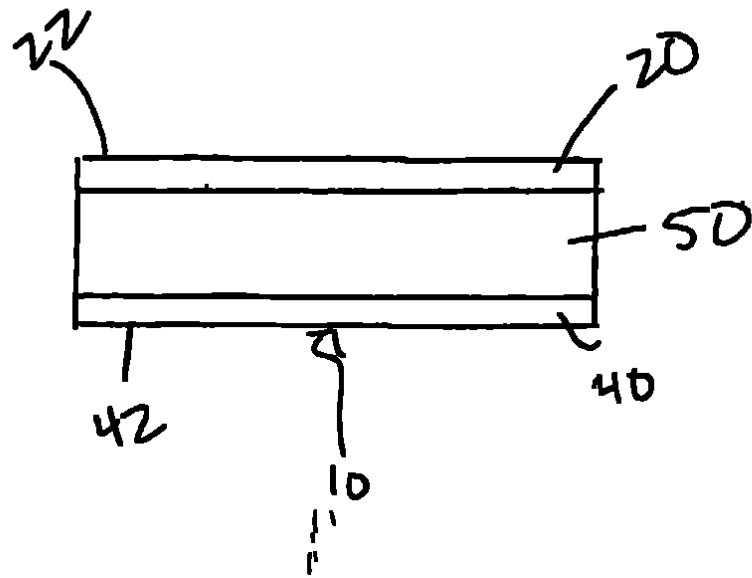


FIG. 2

BEST AVAILABLE COPY

122

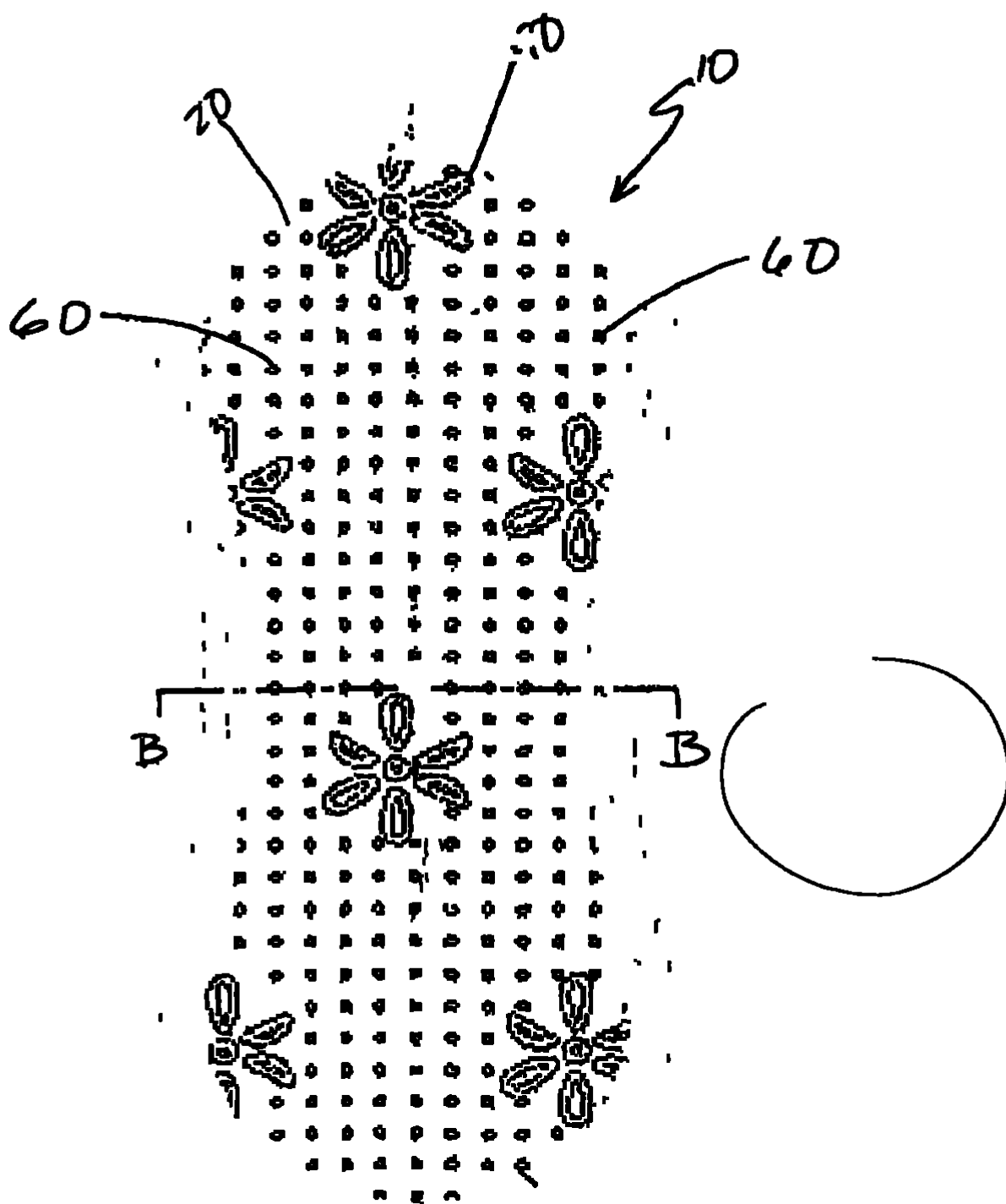
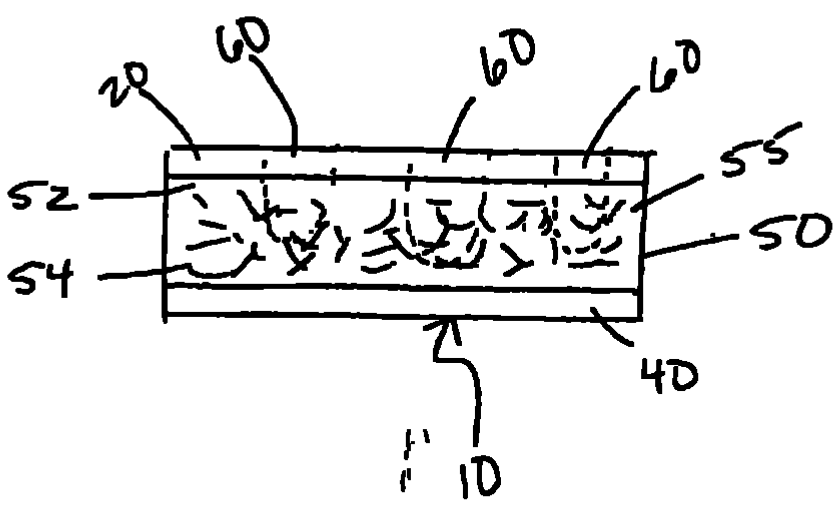


Fig. 3

BEST AVAILABLE COPY



F16.4

BEST AVAILABLE COPY