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SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO
DIVISION DE NUEVAS CREACIONES

E. S. D.

Ref.: Expediente No. 11.147.940
Solicitud de Patente a nombre de
McNeil-PPC, Inc.

Yo, DILIA MARÍA RODRÍGUEZ D'ALEMAN, identificada como aparece al pie de mi firma, domiciliada en la Carrera 11 No. 86-53, piso 6, 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 copias certificadas de la solicitud de Patente número 61/409,790 del 03 de noviembre de 2010 y de la solicitud de Patente número 13/246,054 del 27 de septiembre de 2011, con la debida traducción de lo pertinente.

Señor Superintendente,

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Octubre 21, 2011

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: 13/246,054

Fecha de Presentación: Septiembre 27 de 2011

EL CÓDIGO DEL PAÍS Y EL NÚMERO DE SU SOLICITUD DE
PRIORIDAD, PARA SER USADA EN LA PRESENTACIÓN
EXTRANJERA BAJO EL CONVENIO DE PARÍS ES US13/246,054

Por la autoridad de

Bajo el Secretario de Comercio para la Propiedad Intelectual y el Director de la
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October 21, 2011

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: *13/246,054*

FILING DATE: *September 27, 2011*

THE COUNTRY CODE AND NUMBER OF YOUR PRIORITY APPLICATION, TO BE USED FOR FILING ABROAD UNDER THE PARIS CONVENTION, IS *US13/246,054*

By Authority of the
Under Secretary of Commerce for Intellectual Property
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T. Lawrence

T. LAWRENCE
Certifying Officer



Electronic Acknowledgement Receipt

EFS ID:	11057293
Application Number:	13246054
International Application Number:	
Confirmation Number:	1080
Title of Invention:	QUICK ATTACH ARTICLE ASSEMBLY
First Named Inventor/Applicant Name:	Jennifer J. Austin
Customer Number:	27777
Filer:	Paul J. Higgins./Dana Deinstadt
Filer Authorized By:	Paul J. Higgins.
Attorney Docket Number:	PPC5351USNP
Receipt Date:	27-SEP-2011
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Application Type:	Utility under 35 USC 111(a)

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File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal of New Application	Trans.pdf	212845 0213a237d7d8b0780091b73375e0598b41d478a	no	1
Warnings:					
Information:					
2		PPC5351USNPApplicationFinal.pdf	220354 5e7bfff9f4057052c40ed9778195a4b75135627e	yes	21
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Specification		1	17	
	Claims		18	20	
	Abstract		21	21	
Warnings:					
Information:					
3	Drawings-only black and white line drawings	FIGS.pdf	1076478 f138ac510f35bcb57cd78e845d430a0a9abb4c62	no	2
Warnings:					
Information:					
4	Oath or Declaration filed	Declaration.pdf	342978 e583f1ba33b4b5993c37a80c340c1f30010ca19	no	3
Warnings:					
Information:					
5	Fee Worksheet (SB06)	fee-info.pdf	32937 1f878f1d605d2f65bbce615426b9d6f5a280b009	no	2
Warnings:					
Information:					
Total Files Size (in bytes):			1885592		

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If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UTILITY PATENT APPLICATION TRANSMITTAL (only for new nonprovisional applications under 37 CFR 1.53(b))	Attorney Docket No.	PPC5351USNP
	First Inventor	Jennifer J. Austin
	Title	QUICK ATTACH SANITARY ABSORBENT ARTICLE ASSEMBLY
	I hereby certify that this correspondence is being transmitted via The Office electronic filing system in accordance with 37 CFR 1.6(a)(4)	
APPLICATION ELEMENTS See MPEP Chapter 600 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) 2. ☒ Specification [Total Pages 21] (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 <i>(if filed)</i> - Detailed Description - Claim(s) - Abstract of the Disclosure 3. ☒ Drawing(s)(35 USC 113) [Total Sheets 2] 4. Oath or Declaration [Total Pages 3] a. ☒ 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). 5. ☐ Application Data Sheet. See 37 CFR 1.76		6. ☐ CD-ROM or CD-R in duplicate, large table or Computer Program (Appendix) 7. 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 8. ☐ Assignment Papers 9. ☐ 37 CFR 3.73(b) Statement ☐ Power of Attorney (when there is an assignee) 10. ☐ English Translation Document <i>(if applicable)</i> 11. ☐ Information Disclosure Statement (IDS)/PTO-1449 ☐ Copies of IDS Citations 12. ☐ Preliminary Amendment 13. ☐ Return Receipt Postcard (MPEP 503) (Should be specifically itemized) 14. ☐ Certified Copy of Priority Document(s) (if foreign priority is claimed) 15. ☐ Request and Certifications under 35 U.S.C. 122 (b)(2)(B)(i). Applicant must attach form PTO/SB/35 or its equivalent. 16. ☐ Other
17. ☐ 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 <u>can only</u> be relied upon when a portion has been inadvertently omitted from the submitted application parts.		
18. 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		
19. TELEPHONE CONTACT Please direct all telephone calls or telefaxes to Paul J. Higgins at: Telephone: (732) 524-1728 Fax: (732) 524-2808		
20. SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED		
NAME	Paul J. Higgins REG. NO. 44,152	
SIGNATURE	/Paul J. Higgins/	
DATE	September 27, 2011	

QUICK-ATTACH SANITARY ABSORBENT ARTICLE ASSEMBLY**CROSS-REFERENCE TO RELATED APPLICATION**

This application claims priority to U.S. Provisional Application No. 61/409,790 filed on November 3, 2010.

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FIELD OF THE INVENTION

The present invention relates to a quick-attach absorbent article assembly including a base assembly for attachment to an undergarment and an absorbent article structured to enable a user to quickly attach the absorbent article to the base assembly and easily remove the article from the base assembly when the article is soiled.

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BACKGROUND OF THE INVENTION

Disposable sanitary absorbent articles, such as sanitary napkins, panty liners, incontinence articles, and the like, are well known to those of skill in the art. Typically, such articles include a liquid-permeable body facing cover layer, a liquid-impermeable garment facing barrier layer, and an absorbent core arranged between the cover layer and the barrier layer. The garment facing surface of the barrier layer is typically provided with garment attachment adhesive that enables a user to securely attach the absorbent article to an undergarment during use. Prior to use, the garment attachment adhesive is usually covered with a removable release paper that protects the garment attachment adhesive from contamination prior to use. When ready for use, a user removes the release paper to thereby expose the garment attachment adhesive and places the article in the crotch portion of the user's undergarment so that the garment attachment adhesive secures the article to the crotch portion of the undergarment. Such

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absorbent articles may also be provided with wings that extend outwardly from a main body of the article. The garment facing surface of each wing is provided with a garment attachment adhesive and the wing is adapted to be folded around an edge of the undergarment and secured by way of the adhesive to an external surface of the undergarment, to thereby hold the article in place.

A problem with absorbent articles having the structure described above is that they can be difficult to apply to the undergarment and remove therefrom. For example, upon removal of the release paper the article may fold upon itself causing two different areas of the article to adhere to one another. Likewise, the wings of such article may fold towards the main body portion and adhere thereto prior to the user correctly positioning the article in the undergarment. Further, it is difficult to handle multiple release papers, especially for those articles including wings. In addition, once the article has been soiled it is difficult to remove the article in a sanitary manner.

In view of the above there is a need for an absorbent article assembly that allows an absorbent article to be easily attached to, and removed from, an undergarment.

SUMMARY OF THE INVENTION

In view of the foregoing, the present invention provides a quick-attach sanitary absorbent article assembly including a base assembly selectively attachable to an undergarment, the base assembly including a plurality of protrusions, and an absorbent article, wherein the absorbent
5 article is structured and arranged to be engaged by and held in place in the undergarment by the plurality of protrusions.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a perspective view showing how the absorbent article assembly according to the present invention is installed into a crotch portion of an undergarment;

Fig. 2 is a perspective view similar to Fig. 1 from an underside of the undergarment;

5 Fig. 3 is a partially exploded view of the base assembly that forms part of the absorbent article assembly according to the present invention;

Fig. 4 is a sectional view taken along line 4-4 in Fig. 3;

Fig. 5 is an exploded view of the absorbent article that forms part of the absorbent article assembly shown in Fig. 1;

10 Fig. 6 is a sectional view taken along line 6-6 in Fig. 5; and

Fig. 7 is a perspective view showing how a soiled absorbent article is removed from the base assembly and replaced with a fresh absorbent article.

DETAILED DESCRIPTION OF THE INVENTION

The present invention will be described herein with reference to a sanitary napkin, however the present invention is equally applicable to other sanitary absorbent articles such as panty liners, adult incontinence products and the like. Referring to Figs. 1 and 2, the quick-attach absorbent article assembly 10 according to the present invention generally includes a base assembly 12 and a sanitary napkin 14.

Referring to Fig. 5, the sanitary napkin 14 includes a liquid-permeable body facing cover layer 16, an attachment layer 22, and an absorbent core 20 arranged between the cover layer 16 and the attachment layer 22. The sanitary napkin 14 may optionally include a liquid-impermeable barrier layer 18 arranged between the absorbent core 20 and the attachment layer 22.

The attachment layer 22 includes an absorbent core facing surface 23 and a base assembly facing surface 24. As will be described in greater detail below, the attachment layer 22 is structured and arranged to engage, and be retained by, the base assembly 12. The sanitary napkin 14 may optionally further include a transfer layer arranged between the cover layer 16 and the absorbent core 20 (not shown in the Figures).

Referring to Figs. 3 and 4, the base assembly 12 generally includes a base substrate 28 having a garment facing surface 30 and an opposed upper surface 32. As best seen in Figs. 2 and 4, the garment facing surface 30 is provided with a garment attachment adhesive 34. The garment attachment adhesive 34 is adapted to enable a user to selectively attach the base assembly 12 to an undergarment during use. Prior to use, the garment attachment adhesive 34 may be covered with a removable release paper 36 to protect the adhesive 34 as shown in Figs. 2 and 3.

The base assembly 12 further includes a fastener substrate 38 that is arranged on top of, and secured to, the upper surface 32 of the base substrate 28. The fastener substrate 38 may be secured to the base substrate 28 by any conventional commercially available construction adhesive, or by any other conventional known means such as heat sealing or the like. As shown in Fig. 4, the fastener substrate 38 includes a plurality of upwardly extending protrusions 40 that are adapted to engage the attachment layer 22 of the sanitary napkin 14 and thereby retain the sanitary napkin 14 securely attached to the base assembly 12 during use. As shown in Fig. 4, in one embodiment of the invention, each protrusion comprises a hook structure 41. The attachment layer 22 of the sanitary napkin 14 is preferably formed from a woven or nonwoven material. As shown in Fig. 6, the attachment layer 22, whether woven or nonwoven, should define a plurality of loops 42 that extend towards the base assembly 12 and are adapted to engage with and be held by the hook structures 41 of the base assembly 12.

As shown in Fig. 3, the fastener substrate 38 may be arranged in a plurality of distinct islands, i.e. each fastener substrate 38 may be arranged in spaced relationship to an adjacent fastener substrate 38. Alternatively, the fastener substrate 38 could be arranged as a continuous layer that extends in an uninterrupted manner.

As described below, the above described structure allows a user to easily attach a sanitary napkin 14 to the base assembly 12, and when the sanitary napkin is soiled, easily remove the soiled sanitary napkin 14 and replace the same with a fresh sanitary napkin 14.

A description of the manner in which the quick-attach absorbent article assembly 10 is used will now be provided. When a user is ready to use the assembly 10 the user first removes the removable release paper 36 from the base assembly 12 to thereby expose the garment attachment adhesive 34, as shown in Fig. 2. Thereafter, the user manually places the base

assembly 12 in the crotch portion of the user's undergarment so that the garment facing surface 30 of the base assembly 12 is facing the user's undergarment. By pressing the base assembly 12 against the crotch portion of the undergarment the user may securely attach the base assembly 12 thereto by means of the garment attachment adhesive 34. Once the base assembly 12 is in place the user then arranges the absorbent article 14 on top of the base assembly 12 such that the base assembly facing surface 24 of the attachment layer 22 faces the base assembly 12. By pressing firmly down on the article 14 the protrusions 40 of the base assembly 12 engage the attachment layer 22 and thereby function to hold the article 14 in place for use. Once the article 14 has been soiled the user may manually remove the article 14 and replace the same with a new fresh article 14. During this replacement process the base assembly 12 stays in place in the crotch portion of the undergarment thereby significantly simplifying the change experience of the user. It is important that the garment attachment adhesive 34 be selected so that the effective removal force required to remove the base assembly 12 from the undergarment is greater than the removal force required to remove the sanitary napkin 14 from the base assembly 12. This will insure that the base assembly 12 will stay in place in the undergarment when the article 14 is removed from the base assembly 12. The base assembly 12 is removable from the undergarment prior to laundering.

Cover Layer

The liquid-permeable body facing cover layer 16 may be a relatively low density, bulky, high-loft non-woven web material. The cover layer 16 may be composed of only one type of fiber, such as polyester or polypropylene or it may include a mixture of more than one fiber. The cover may be composed of bi-component or conjugate fibers having a low melting point

component and a high melting point component. The fibers may be selected from a variety of natural and synthetic materials such as nylon, polyester, rayon (in combination with other fibers), cotton, acrylic fiber and the like and combinations thereof.

The cover layer 16 preferably has a relatively high degree of wettability, although the individual fibers comprising the cover may not be particularly hydrophilic. The cover material should also contain a great number of relatively large pores. This is because the cover layer 16 is intended to take-up body fluid rapidly then transport it away from the body and the point of deposition. Therefore, the cover layer contributes little to the time taken for the napkin to absorb a given quantity of liquid (penetration time).

Advantageously, the fibers which make up the cover layer 16 should not lose their physical properties when they are wetted, in other words they should not collapse or lose their resiliency when subjected to water or body fluid. The cover layer 16 may be treated to allow fluid to pass through it readily. The cover layer 16 also functions to transfer the fluid quickly to the underlying layers of the napkin. Thus, the cover layer 16 is advantageously wettable, hydrophilic and porous. When composed of synthetic hydrophobic fibers such as polyester or bi-component fibers, the cover layer 16 may be treated with a surfactant to impart the desired degree of wettability.

Alternatively, the cover layer 16 can also be made of polymer film having large pores. Because of such high porosity, the film accomplishes the function of quickly transferring body fluid to the inner layers of the underlying absorbent layers.

The cover layer 16 may be attached to the underlying layers of the sanitary napkin 14 by adhesion and/or other suitable means known to those of skill in the art.

In one embodiment of the invention the cover layer comprises a hot through air bonded nonwoven composed of PE/PET bicomponent fibers, such nonwoven being commercially available from Shalag Industries, Ltd., Upper Galilee, Israel.

5 Transfer Layer

The optional transfer layer (not shown in the Figures) may be composed of fibrous materials, such as wood pulp, polyester, rayon, flexible foam, or the like, or combinations thereof. The transfer layer may also optionally include a superabsorbent polymer (SAP) material. The transfer layer may also comprise thermoplastic fibers for the purpose of stabilizing the layer and maintaining its structural integrity. The transfer layer may be treated with surfactant on one or both sides in order to increase its wettability, although generally the transfer layer is relatively hydrophilic and may not require treatment. The transfer layer is preferably bonded on both sides to the adjacent layers, i.e. to the cover layer 16 and the underlying core 20.

In one embodiment of the invention the transfer layer comprises an airlaid pulp material commercially available from P.H. Glatfelter Company, York, PA, under product code MH090.102.

Absorbent Core

The absorbent core 20 may comprise a single layer of material or may comprise multiple layers. In one embodiment, the core 20 is a blend or mixture of cellulosic fibers and superabsorbent disposed therein. Cellulosic fibers that can be used in the second absorbent layer 20 are well known in the art and include wood pulp, cotton, flax and peat moss. Wood pulp is preferred. Pulps can be obtained from mechanical or chemi-mechanical, sulfite, kraft, pulping

reject materials, organic solvent pulps, etc. Both softwood and hardwood species are useful.

Softwood pulps are preferred. It is not necessary to treat cellulosic fibers with chemical debonding agents, cross-linking agents and the like for use in the present material. Some portion of the pulp may be chemically treated as discussed in U.S. Pat. No. 5,916,670 to improve flexibility of the product, the content of which is incorporated by reference in its entirety.

Flexibility of the material may also be improved by mechanically working the material or tenderizing the material.

The core 20 can contain any superabsorbent polymer (SAP) which are well known in the art. For the purposes of the present invention, the term "superabsorbent polymer" (or "SAP") refers to materials which are capable of absorbing and retaining at least about 10 times their weight in body fluids under a 0.5 psi pressure. The superabsorbent polymer particles of the invention may be inorganic or organic crosslinked hydrophilic polymers, such as polyvinyl alcohols, polyethylene oxides, crosslinked starches, guar gum, xanthan gum, and the like. The particles may be in the form of a powder, grains, granules, or fibers. Preferred superabsorbent polymer particles for use in the present invention are crosslinked polyacrylates, such as the product offered by Sumitomo Seika Chemicals Co., Ltd. Of Osaka, Japan, under the designation of SA70N and products offered by Stockhausen Inc.

In a specific example, the core 20 is a material containing from 90% to about 40% percent cellulosic fiber, about 10% to about 60% SAP. The core 20 may comprise a material manufactured by using air-laying means well known in the art.

In one embodiment of the invention the core 20 is relatively thin, high swelling absorbent material sold under the trade name NOVATHIN ® INT-002 available from EAM Corporation located in Jessup, Ga. , U.S.A.

The absorbent core 20 may be adhered to the adjacent layers, e.g. the cover layer 16 (or transfer layer if such layer is employed) and the barrier layer 18 by means of a conventional construction adhesive well known to those of skill in the art.

5 Barrier Layer

Underlying absorbent core is the liquid-impermeable barrier layer 18. The barrier layer 18 preferably comprises liquid-impervious film material so as to prevent liquid that is entrapped in the absorbent core 20 from egressing the sanitary napkin 14 and staining the wearer's undergarment. The barrier layer 18 is preferably made of polymeric film, although it may be
10 made of liquid-impervious, air-permeable material such as repellent-treated non-woven or micropore films or foams.

The barrier layer 18 may be breathable, i.e., permits vapor to transpire. Known materials for this purpose include nonwoven materials and microporous films in which microporosity is created by, inter alia, stretching an oriented film. Single or multiple layers of permeable films,
15 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. The cover layer 16 and the barrier layer 18 are preferably joined along their marginal portions so as to form an enclosure or flange seal that maintains the absorbent core 20 captive. The joint may be made by means of adhesives, heat-
20 bonding, ultrasonic bonding, radio frequency sealing, mechanical crimping, and the like and combinations thereof.

In one specific embodiment of the invention the barrier layer **18** comprises a polyethylene film material of the type commercially available from Berry Plastics Corporation, Evansville, IN.

5 Attachment Layer

The attachment layer **22** is preferably formed from a woven or nonwoven material. Nonwoven materials may include spunmelts, thermo-bonds, through air bonds, needlepunch or spunlace materials. Alternatively the attachment layer may be formed from polymeric films provided that such films are provided with a sufficient structure to engage with and be retained
10 by the protrusions **40** of the base assembly **12**. For example such films may be provided with holes, fibrillated, or provided with some other three dimensional structure that enables the film to engage with and be retained by the protrusions **40**.

As shown in Fig. 6, the attachment layer **22** in one embodiment of the invention defines a plurality of loops **42** that extend towards the base assembly **12** and are adapted to engage with
15 and be held by the hook structures **41** of the base assembly **12**. In this manner, the loops **42** and hook structures **41** function to hold the sanitary napkin **14** in place during use and also permit the user to manually remove the napkin **14** once the napkin **14** has been soiled. The attachment layer
22 may comprise a single layer or may comprise a multi-layer laminate provided that such laminate includes a layer that faces the base assembly having a plurality of loops **42** as described
20 herein. The attachment layer **22** is preferably secured to the barrier layer **18**, or core structure if such barrier **18** is omitted, by means of a conventional construction adhesive well known to those of skill in the art.

In one specific embodiment of the invention the attachment layer **22** comprises a liquid-impermeable, air permeable, laminate structure including a microporous film core facing layer that is bonded to a spunbond nonwoven base assembly facing layer. Since the attachment layer **22** is liquid-impermeable the barrier **18** may be omitted if desired. In a specific embodiment of the invention the attachment layer **22** comprises a 35 gsm laminate structure of this type commercially available from Kang Na Hsiung Enterprises Co., Ltd., Taipei, Taiwan under product code CL035-CPS5-N0.

Base Substrate

The base substrate **28** may be formed from any conformable material such as a suitably flexible woven or nonwoven material that will move with the user's undergarment. The base substrate **28** may be formed of a single layer or may be formed from a multi-layer laminate. The base substrate **28** may optionally be formed from liquid-impermeable materials or may be rendered liquid-impermeable by a separate treatment. As discussed above, the garment facing surface **30** of the base substrate **28** is provided with a garment attachment adhesive **34**.

The garment attachment adhesive **34** may be any suitable pressure-sensitive adhesive. 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 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 acrylics or suitable block copolymers - suitable block copolymers for use in the invention include linear or radial co-polymer structures

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

5 Block B poly(monoalkenyl) blocks include, but are not 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; hot melt adhesives based upon acrylic polymers. Commercial examples of these types of block copolymers include KratonTM elastomers from Shell Chemical Company, VectorTM elastomers from Dexco,

10 SolpreneTM from Enichem Elastomers and 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 co-monomers, 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 AtevaTM (polymers from AT plastics), NucrelTM (

15 polymers from DuPont), EscorTM (from Exxon Chemical). In a specific embodiment of the present invention the garment attachment adhesive is an acrylic hot melt Duro-Tak 34-546B from Henkel AG & Co. KGaA, Dusseldorf, Germany.

In one specific embodiment of the invention, the base substrate **28** comprises a liquid-impermeable, air permeable, laminate structure including a microporous film garment facing

20 layer that is bonded to a spunbond nonwoven fastener substrate facing layer. Laminate structures of this type are commonly used as a backsheet material for diapers. In a specific embodiment of the invention the attachment layer **22** comprise a 35 gsm laminate structure of

this type commercially available from Kang Na Hsiung Enterprises Co., Ltd., Taipei, Taiwan under product code CL035-CPS5-N0.

Fastener Substrate

5 The fastener substrate **38** is preferably formed from a polymeric material including a plurality of upwardly extending protrusions **40** as described above. In one embodiment of the invention each protrusion comprises a hook structure **41**. Polymeric materials of this type are commercially available from Velcro USA, Inc., Manchester, NH.

10 In one specific embodiment of the invention the fastener substrate **38** comprises a polymeric material commercially available from Velcro USA, Inc., Manchester, NH under product code HTH 847.

 The fastener substrate **38** is bonded to the article facing surface of the base substrate **28** by any conventional known means in the art such as adhesion or ultrasonic bonding.

15

EXAMPLE

A quick-attach absorbent article assembly according to one embodiment of the invention was constructed as follows:

5 Sanitary Napkin

Cover:

HTA 27 gsm bico fibers PE/PET, STA4ETW27, Shalag Industries, Ltd, Upper Galilee, Israel.

10 Adhesive layer:

NW 1023 1.0 gsm (100% coverage) styrenated block copolymer based hot melt pressure sensitive adhesive, HB Fuller, St Paul, MN.

Transfer layer:

15 90 gsm airlaid 90% pulp, MH090.102, P.H. Glatfelter Company, York, PA.

Adhesive layer:

NW 1023 4.0 gsm (100% coverage,) styrenated block copolymer based hot melt pressure sensitive adhesive, HB Fuller, St Paul, MN.

20 Core:

Novathin 208 gsm 25% SAP, 56mm x 205 mm, Novathin INT-002, EAM corporation, Jesup, GA.

25 Adhesive layer:

NW 1023 4.0 gsm (100% coverage,) styrenated block copolymer based hot melt pressure sensitive adhesive, HB Fuller, St Paul, MN.

Barrier:

Pliant, 0.8 mil PE metallocene, Berry Plastics Corporation, Evansville, IN.

5 Adhesive layer:

NW 1042 22.0 gsm (~40% coverage,) styrenated block copolymer based hot melt pressure sensitive adhesive, HB Fuller, St Paul, MN

Attachment layer:

10 a 35 gsm laminate structure of this type commercially available from Kang Na Hsiung Enterprises Co., Ltd., Taipei, Taiwan under product code CL035-CPS5-N0.

Base Assembly

Base substrate:

15 a 35 gsm laminate structure of this type commercially available from Kang Na Hsiung Enterprises Co., Ltd., Taipei, Taiwan under product code CL035-CPS5-N0.

Garment attachment adhesive on a garment facing surface of the base substrate:

20 an acrylic hot melt Duro-Tak 34-546B from Henkel AG & Co. KGaA, Dusseldorf, Germany.

Fastener substrate:

a polymeric material commercially available from Velcro USA, Inc., Manchester, NH under product code HTH 847.

25 Adhesive between base substrate and fastener substrate:

NW 1042 22.0 gsm styrenated block copolymer based hot melt pressure sensitive adhesive, HB Fuller, St Paul, MN

While particular embodiments of the preset invention have been illustrated and described, it would be obvious to those skilled in the art that various other changes and modifications can be made without departing from the spirit and scope of the invention. It is therefore intended to cover in the appended claims all such changes and modifications that are within the scope of the
5 invention.

Reivindicaciones:

1. Un sistema con un artículo absorbente de adhesión rápida que comprende:
un componente base que se une selectivamente a una prenda íntima, el
5 componente base incluye una pluralidad de salientes, y
un artículo absorbente;
en donde el artículo absorbente está estructurado y dispuesto para adaptarse
y mantenerse en su lugar sobre la prenda íntima por medio de las salientes.
- 10 2. El sistema con un artículo absorbente de adhesión rápida de conformidad con la
reivindicación 1, en donde cada una de las salientes comprende una estructura de
ganchos.
3. El sistema con un artículo absorbente de adhesión rápida de conformidad con la
15 reivindicación 2, en donde el componente base comprende un sustrato base y un
sustrato sujetador.
4. El sistema con un artículo absorbente de adhesión rápida de conformidad con la
reivindicación 3, en donde el sustrato sujetador incluye una pluralidad de estructuras
20 de ganchos.
5. El sistema con un artículo absorbente de adhesión rápida de conformidad con la
reivindicación 4, en donde una superficie orientada hacia la prenda del sustrato base
incluye un adhesivo sujetador a la prenda adaptado para permitir que la usuaria
25 adhiera selectivamente el componente base a la prenda íntima.
6. El sistema con un artículo absorbente de adhesión rápida de conformidad con la
reivindicación 5, en donde el artículo absorbente comprende una capa de adherencia.

7. El sistema con un artículo absorbente de adhesión rápida de conformidad con la reivindicación 6, en donde la capa de adherencia incluye una pluralidad de presillas; las presillas están estructuradas y dispuestas para acoplarse y ser retenidas por las

5 estructuras de ganchos.

8. El sistema con un artículo absorbente de adhesión rápida de conformidad con la reivindicación 7, en donde el artículo absorbente comprende, además, una capa de cubierta permeable a líquidos orientada hacia el cuerpo.

10

9. El sistema con un artículo absorbente de adhesión rápida de conformidad con la reivindicación 8, en donde el artículo absorbente comprende, además, un centro absorbente dispuesto entre la capa de cubierta y la capa de adherencia.

CLAIMS

We claim:

- 5 1. A quick-attach absorbent article assembly comprising:
- a base assembly selectively attachable to an undergarment, said base assembly including
- a plurality of protrusions; and
- an absorbent article;
- wherein said absorbent article is structured and arranged to be engaged by and held in
- 10 place in said undergarment by said protrusions.
2. The quick-attach absorbent article assembly according to claim 1, wherein each of said
- protrusions comprises a hook structure.
- 15 3. The quick-attach absorbent article assembly according to claim 2, wherein said base assembly
- comprises a base substrate and a fastener substrate.
4. The quick-attach absorbent assembly according to claim 3, wherein said fastener substrate
- includes a plurality of said hook structures.
- 20 5. The quick-attach absorbent article assembly according to claim 4, wherein a garment facing
- surface of said base substrate includes a garment attachment adhesive adapted to allow a user to
- selectively attach the base assembly to said undergarment.

6. The quick-attach absorbent article assembly according to claim 5, wherein said absorbent article comprises an attachment layer.

5 7. The quick-attach absorbent article assembly according to claim 6, wherein said attachment layer includes a plurality of loops, said loops being structured and arranged to be engaged and retained by said hook structures.

10 8. The quick-attach absorbent article assembly according to claim 7, wherein said absorbent article further comprises a liquid-permeable body facing cover layer.

9. The quick-attach absorbent article assembly according to claim 8, wherein said absorbent article further comprises an absorbent core arranged between said cover layer and said attachment layer.

15

ABSTRACT

A quick-attach absorbent article assembly including a base assembly selectively attachable to a crotch region of an undergarment and a absorbent article selectively attachable to the base assembly. The base assembly is provided with a plurality of protrusions structured and
5 arranged to engage and retain the absorbent article during use.

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

PTO/SB/01 (10-00)
Approved for use through 10/31/2002. OMB 0651-0032
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 1.63) ☐ Declaration Submitted with Initial Filing ☐ Declaration Submitted after Initial Filing (Surcharge (37 CFR 1.16(e)) required) OR	Attorney Docket Number	PPC5351USNP	
	First Named Inventor	Jennifer J. Austin	
	COMPLETE IF KNOWN		
	Application Number		
	Filing Date		
	Group Art Unit		
	Examiner Name		

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:

QUICK ATTACH ABSORBENT ARTICLE ASSEMBLY
(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) (if applicable).

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:

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/02B attached hereto.
61/409,790	11/03/2010	
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
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☒ If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), and any other intellectual property offices in which a foreign application claiming priority to the above-identified application is filed access to the above-identified patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, or other intellectual property office in which a foreign application claiming priority to the above-identified application is filed to have access to the application.		
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In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing the Authorization to Permit Access to Application by Participating Offices.		
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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.		
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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]) Jennifer J.		Family Name or Surname Austin	
Inventor's Signature		Date	
Residence: City Trenton	State NJ	Country USA	Citizenship USA
Mailing Address 141 Jackson Street			
City Trenton	State NJ	ZIP 08611	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]) Shmuel		Family Name or Surname Dabi	
Inventor's Signature		Date	
Residence: City Highland Park	State NJ	Country USA	Citizenship USA
Mailing Address 464 Lincoln Avenue			
City Highland Park	State NJ	ZIP 08903	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]) John F.		Family Name or Surname Poccia	
Inventor's Signature		Date	
Residence: City Monmouth Beach	State NJ	Country USA	Citizenship USA
Mailing Address 6 Gull Point Road			
City Monmouth Beach	State NJ	ZIP 07750	Country USA

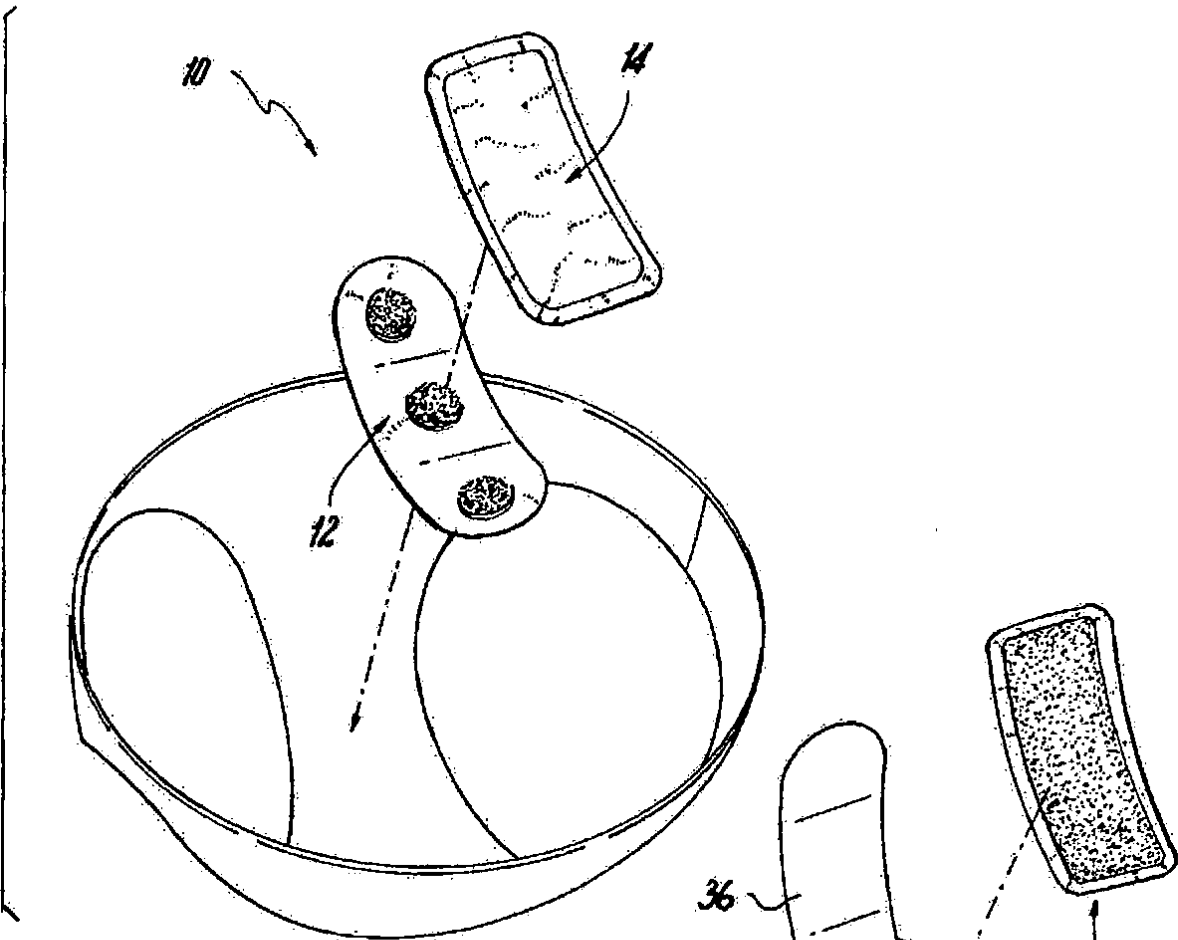


Fig. 1

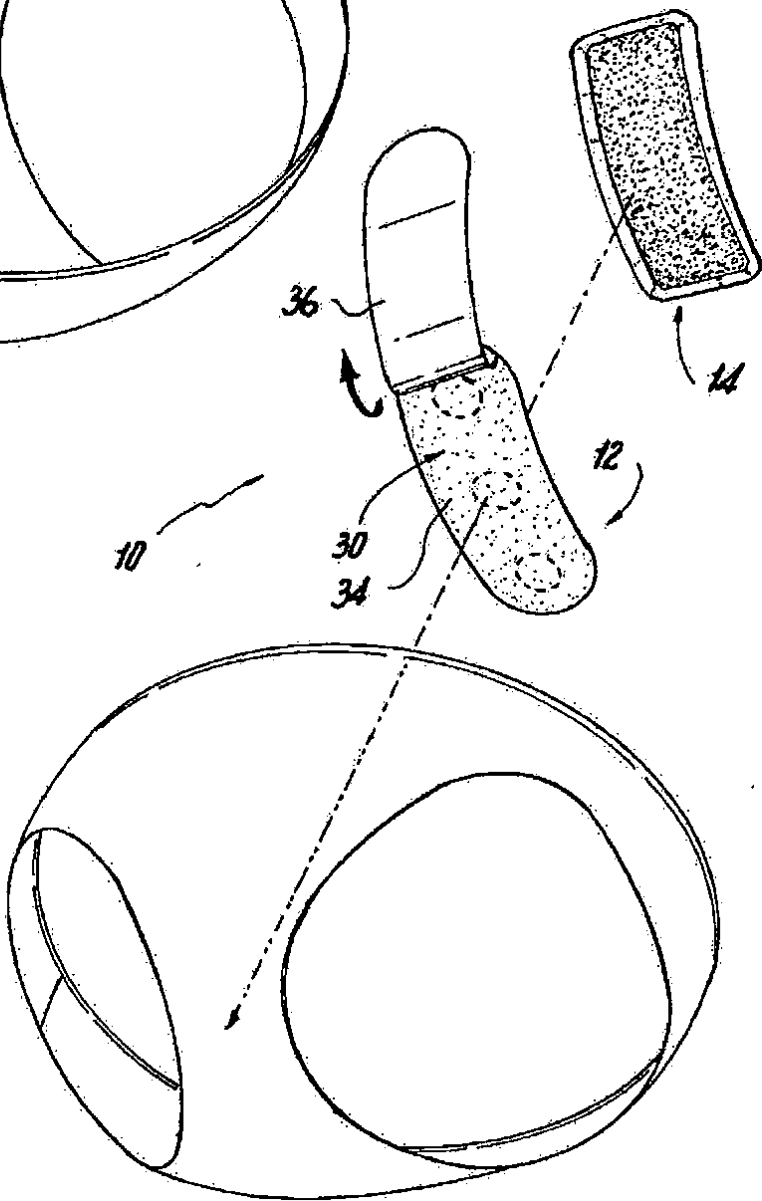


Fig. 2

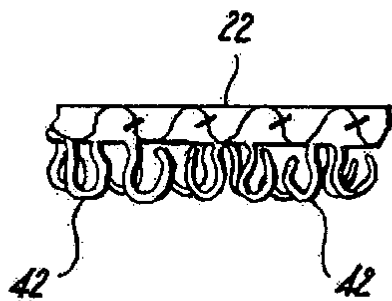
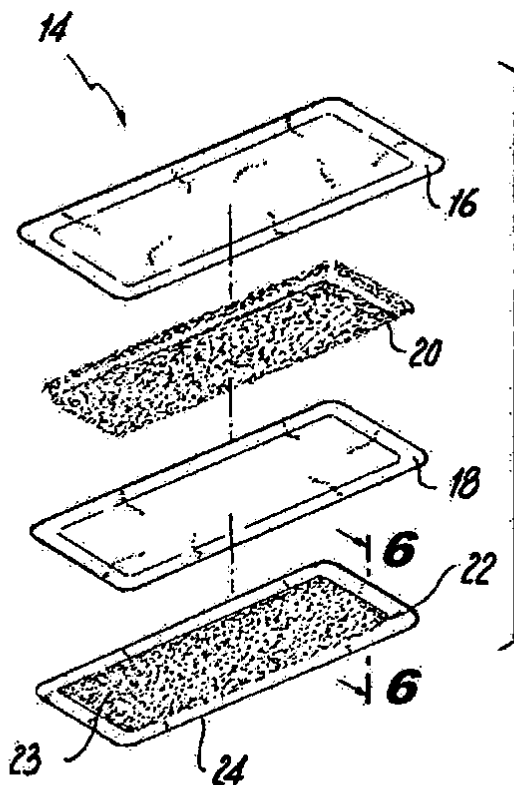
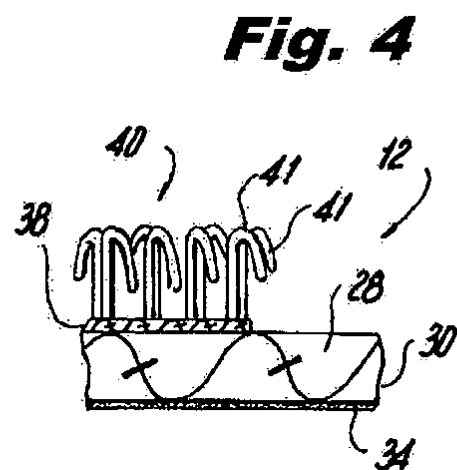
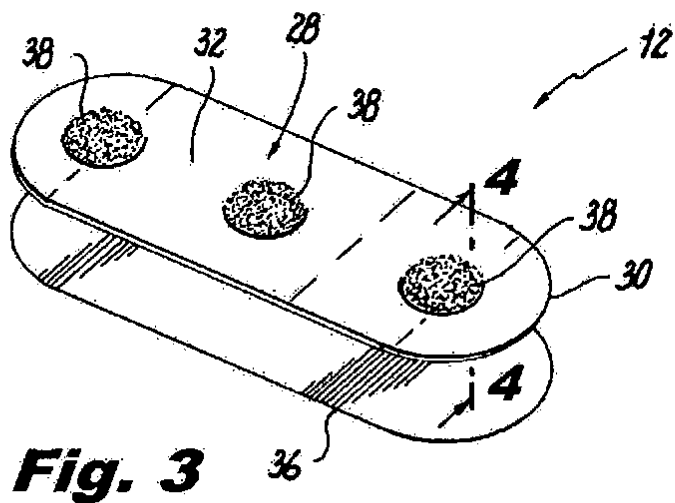
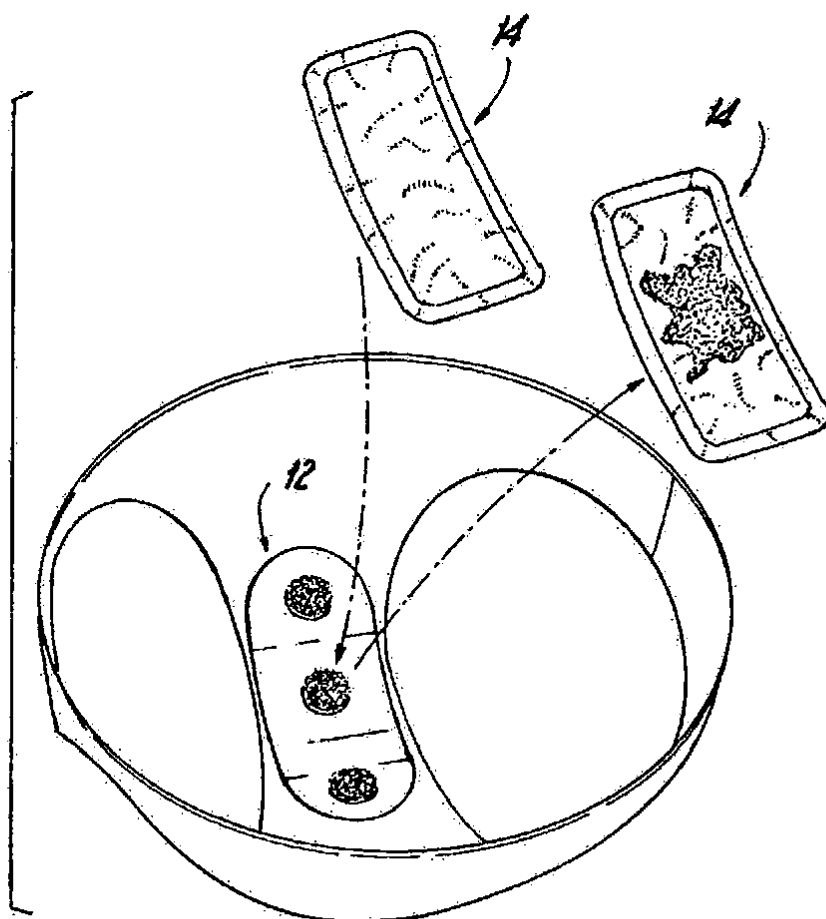


Fig. 5

Fig. 7



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Número de Solicitud: 61/409,790

Fecha de Presentación: Noviembre 03 de 2010

EL CÓDIGO DEL PAÍS Y EL NÚMERO DE SU SOLICITUD DE PRIORIDAD, PARA SER USADA EN LA PRESENTACIÓN EXTRANJERA BAJO EL CONVENIO DE PARÍS ES US61/409,790

Por la autoridad de

Bajo el Secretario de Comercio para la Propiedad Intelectual y el Director de la Oficina de Patentes y Marcas de los Estados Unidos de América

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Oficial Certificador

Sello oficial de la Oficina de Patentes y Marcas de los Estados Unidos de América



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APPLICATION THAT MET THE REQUIREMENTS TO BE GRANTED A
FILING DATE UNDER 35 USC 111.

APPLICATION NUMBER: *61/409,790*

FILING DATE: *November 03, 2010*

THE COUNTRY CODE AND NUMBER OF YOUR PRIORITY
APPLICATION, TO BE USED FOR FILING ABROAD UNDER THE PARIS
CONVENTION, IS *US61/409,790*

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P. R. GRANT
Certifying Officer

Electronic Acknowledgement Receipt

EFS ID:	8763846
Application Number:	61409790
International Application Number:	
Confirmation Number:	4461
Title of Invention:	QUICK ATTACH SANITARY ABSORBENT ARTICLE ASSEMBLY
First Named Inventor/Applicant Name:	Jennifer J. Austin
Customer Number:	27777
Filer:	Paul J. Higgins./Dana Deinstadt
Filer Authorized By:	Paul J. Higgins.
Attorney Docket Number:	PPC-5351-USPSP
Receipt Date:	03-NOV-2010
Filing Date:	
Time Stamp:	17:25:27
Application Type:	Provisional

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$ 220
RAM confirmation Number	3933
Deposit Account	100750
Authorized User	
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File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal of New Application	ProvisionalApplicationCoverSheet1.pdf	278555 6a3c84637059556caf3766474cede7d7c68be6c6	no	3
Warnings:					
Information:					
2		PPC5351ApplicationFinal.pdf	218430 a8c30dc2b1c13c63d5ef6816840fd8e23fab75d48	yes	21
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Specification		1	17	
	Claims		18	20	
	Abstract		21	21	
Warnings:					
Information:					
3	Drawings-only black and white line drawings	DRAWINGS.pdf	45695 e598b7640fcd6a4bb9256417a65782f3e14a13933	no	2
Warnings:					
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Warnings:					
Information:					
Total Files Size (in bytes):			572109		

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National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PROVISIONAL APPLICATION COVER SHEET

Commissioner For Patents
P.O. Box 1450
Alexandria, VA 22313-1450

This is a request for filing a PROVISIONAL APPLICATION under 37 CFR 1.53 (c).

			DOCKET NUMBER	PPC-5351-USPSP
INVENTOR(s) / APPLICANT(s)				
LAST NAME	FIRST NAME	MIDDLE INITIAL	RESIDENCE (CITY AND EITHER STATE OR FOREIGN COUNTRY)	
Austin	Jennifer	J.	Trenton, New Jersey	
Dabi	Shmuel		Highland Park, New Jersey	
Poccia	John	F.	Monmouth Beach, New Jersey	
TITLE OF THE INVENTION (280 characters max)				
QUICK ATTACH ABSORBENT ARTICLE ASSEMBLY				
CORRESPONDENCE ADDRESS				
Direct all correspondence to: ☒ Customer Number 000027777 OR ☐ Firm of Individual Name:				
ENCLOSED APPLICATION PARTS (check all that apply)				
☒ Specification	Number of Pages	21	☐ Application Data Sheet	
☒ Claims	Number of Claims	9	☐ CD(s), Number	
☒ Drawing(s)	Number of Sheets	2	☐ Other (specify)	
METHOD OF PAYMENT (check one)				
☐ A check or money order is enclosed to cover the Provisional filing fees.			Provisional Filing Fee Amount (\$)	\$ 220.00
☒ The Commissioner is hereby authorized to charge filing fees and credit any overpayment to Deposit Account No. 10-0750				

The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.

☒ No

☐ Yes, the name of the U.S. Government agency and the Government contract number are:

Respectfully submitted,

SIGNATURE: /Paul J. Higgins/

REGISTRATION NO. 44,152

TYPED or PRINTED NAME Paul J. Higgins

DATE: November 3, 2010

TELEPHONE (732) 524-1728

PROVISIONAL APPLICATION FILING ONLY

QUICK ATTACH SANITARY ABSORBENT ARTICLE ASSEMBLY**FIELD OF THE INVENTION**

5 The present invention relates to a quick attach absorbent article assembly including a base assembly for attachment to an undergarment and a absorbent article structured to enable a user to quickly attach the absorbent article to the base assembly and easily remove the article from the base assembly when the article is soiled.

BACKGROUND OF THE INVENTION

10 Disposable sanitary absorbent articles, such as sanitary napkins, panty liners, incontinence articles, and the like, are well known to those of skill in the art. Typically, such articles include a liquid-permeable body facing cover layer, a liquid impermeable garment facing barrier, and an absorbent core arranged between the cover layer and the barrier layer. The garment facing surface of the barrier layer is typically provided with garment attachment
15 adhesive that enables a user to securely attach the absorbent article to an undergarment during use. Prior to use, the garment attachment adhesive is usually covered with a removable release paper that protects the garment attachment adhesive from contamination prior to use. When ready for use, a user removes the release paper to thereby expose the garment attachment
20 adhesive and places the article in the crotch portion of the user's undergarment so that the garment attachment adhesive secures the article to the crotch portion of the undergarment. Such absorbent articles may also be provided with wings that extend outwardly from a main body of the article. The garment facing surface of each wing is provided with a garment attachment adhesive and the wing is adapted to be folded around an edge of the undergarment and secured

by way of the adhesive to an external surface of the undergarment, to thereby hold the article in place.

A problem with absorbent articles having the structure described above is that they can be difficult to apply to the undergarment and remove therefrom. For example, upon removal of the release paper the article may fold upon itself causing two different areas of the article to adhere to one another. Likewise, the wings of such article may fold towards the main body portion and adhere thereto prior to the user correctly positioning the article in the undergarment. Further, it is difficult to handle multiple release papers, especially for those articles including wings. In addition, once the article has been soiled it is difficult to remove the article in a sanitary manner.

In view of the above there is a need for an absorbent article assembly that allows an absorbent article to be easily attached to, and removed from, an undergarment.

SUMMARY OF THE INVENTION

In view of the foregoing, the present invention provides a quick attach sanitary absorbent article assembly including a base assembly selectively attachable to an undergarment, the base
5 assembly including a plurality of protrusions, and an absorbent article, wherein the absorbent article is structured and arranged to be engaged by and held in place in the undergarment by the plurality of protrusions.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a perspective view showing how the absorbent article assembly according to the present invention is installed into a crotch portion of an undergarment;

5 Fig. 2 is a perspective view similar to Fig. 1 from an underside of the undergarment;

Fig. 3 is a partially exploded view of the base assembly that forms part of the absorbent article assembly according to the present invention;

Fig. 4 is a sectional view taken along line 4-4 in Fig. 3;

Fig. 5 is an exploded view of the absorbent article that forms part of the absorbent article

10 assembly shown in Fig. 1;

Fig. 6 is a sectional view taken along line 6-6 in Fig. 5; and

Fig. 7 is a perspective showing how a soiled absorbent article is removed from the base assembly and replaced with a fresh absorbent article.

DETAILED DESCRIPTION OF THE INVENTION

The present invention will be described herein with reference to a sanitary napkin, however the present invention is equally applicable to other sanitary absorbent articles such as
5 panty liners, adult incontinence products and the like. Referring to Figs. 1 and 2, the quick
attach absorbent article assembly 10 according to the present invention generally includes a base
assembly 12 and a sanitary napkin 14.

Referring to Fig. 5, the sanitary napkin 14 includes a liquid permeable body facing cover
layer 16, an attachment layer 22, and an absorbent core 20 arranged between the cover layer 16
10 and the attachment layer 22. The sanitary napkin 14 may optionally include a liquid
impermeable barrier layer 18 arranged between the absorbent core 20 and the attachment layer
22.

The attachment layer 22 includes an absorbent core facing surface 23 and a base
assembly facing surface 24. As will be described in greater detail below, the attachment layer 22
15 is structured and arranged to engage, and be retained by, the base assembly 12. The sanitary
napkin 14 may optionally further include a transfer layer arranged between the cover layer 16
and the absorbent core 20 (not shown in the Figures).

Referring to Figs. 3 and 4, the base assembly 12 generally includes a base substrate 28
having a garment facing surface 30 and an opposed upper surface 32. As best seen in Figs. 2 and
20 4, the garment facing surface 30 is provided with garment attachment adhesive 34. The garment
attachment adhesive 34 is adapted to enable a user to selectively attach the base assembly 12 to
an undergarment during use. Prior to use, the garment attachment adhesive 34 may be covered
with a removable release paper 36 to protect the adhesive 34 as shown in Figs. 2 and 3.

The base assembly 12 further includes a fastener substrate 38 that is arranged on top of, and secured to, the upper surface 32 of the base substrate 28. The fastener substrate 38 may be secured to the base substrate 28 by any conventional commercially available construction adhesive, or by any other conventional known means such as heat sealing or the like. As shown in Fig. 4, the fastener substrate 38 includes a plurality of upwardly extending protrusions 40 that are adapted to engage the attachment layer 22 of the sanitary napkin 14 and thereby retain the sanitary napkin 14 securely attached to the base assembly 12 during use. As shown in Fig. 4, in one embodiment of the invention, each protrusion comprises a hook structure 41. The attachment layer 22 of the sanitary napkin 14 is preferably formed from a woven or nonwoven material. As shown in Fig. 6, the attachment layer 22, whether woven or nonwoven, should define a plurality of loops 42 that extend towards the base assembly 12 and are adapted to engage with and be held by the hook structures 41 of the base assembly 12.

As shown in Fig. 3, the fastener substrate 38 may be arranged in a plurality of distinct islands, i.e. each fastener substrate 38 may be arranged in spaced relationship to an adjacent fastener substrate 38. Alternatively, the fastener substrate 38 could be arranged as a continuous layer that extends in an uninterrupted manner.

As described below, the above described structure allows a user to easily attach a sanitary napkin 14 to the base assembly 12, and when the sanitary napkin is soiled easily remove the soiled sanitary napkin 14 and replace the same with a fresh sanitary napkin 14.

A description of the manner in which the quick attach absorbent article assembly 10 is used will now be provided. When a user is ready to use the assembly 10 the user first removes the removable release paper 36 from the base assembly 12 to thereby expose the garment attachment adhesive 34, as shown in Fig. 2. Thereafter, the user manually places the base

assembly 12 in the crotch portion of the user's undergarment so that the garment facing surface 30 of the base assembly 12 is facing the user's undergarment. By pressing the base assembly 12 against the crotch portion of the undergarment the user may securely attach the base assembly 12 thereto by means of the garment attachment adhesive 34. Once the base assembly 12 is in place the user then arranges the absorbent article 14 on top of the base assembly 12 such that the base assembly facing surface 24 of the attachment layer 22 faces the base assembly 12. By pressing firmly down on the article 14 the protrusions 40 of the base assembly 12 engage the attachment layer 22 and thereby function to hold the article 14 in place for use. Once the article 14 has been soiled the user may manually remove the article 14 and replace the same with a new fresh article 14. During this replacement process the base assembly 12 stays in place in the crotch portion of the undergarment thereby significantly simplifying the change experience of the user. It is important that the garment attachment adhesive 34 be selected so that the effective removal force required to remove the base assembly 12 from the undergarment is greater than the removal force required to remove the sanitary napkin 14 from the base assembly 12. This will insure that the base assembly 12 will stay in place in the undergarment when the article 14 is removed from the base assembly 12. The base assembly 12 is removable from the undergarment prior to laundering.

Cover Layer

The liquid permeable body facing cover layer 16 may be a relatively low density, bulky, high-loft non-woven web material. The cover layer 16 may be composed of only one type of fiber, such as polyester or polypropylene or it may include a mixture of more than one fiber. The cover may be composed of bi-component or conjugate fibers having a low melting point

component and a high melting point component. The fibers may be selected from a variety of natural and synthetic materials such as nylon, polyester, rayon (in combination with other fibers), cotton, acrylic fiber and the like and combinations thereof.

The cover layer 16 preferably has a relatively high degree of wettability, although the individual fibers comprising the cover may not be particularly hydrophilic. The cover material should also contain a great number of relatively large pores. This is because the cover layer 16 is intended to take-up body fluid rapidly and transport it away from the body and the point of deposition. Therefore, the cover layer contributes little to the time taken for the napkin to absorb a given quantity of liquid (penetration time).

Advantageously, the fibers which make up the cover layer 16 should not lose their physical properties when they are wetted, in other words they should not collapse or lose their resiliency when subjected to water or body fluid. The cover layer 16 may be treated to allow fluid to pass through it readily. The cover layer 16 also functions to transfer the fluid quickly to the underlying layers of the napkin. Thus, the cover layer 16 is advantageously wettable, hydrophilic and porous. When composed of synthetic hydrophobic fibers such as polyester or bi-component fibers, the cover layer 16 may be treated with a surfactant to impart the desired degree of wettability.

Alternatively, the cover layer 16 can also be made of polymer film having large pores. Because of such high porosity, the film accomplishes the function of quickly transferring body fluid to the inner layers of the underlying absorbent layers.

The cover layer 16 may be attached to the underlying layers of the sanitary napkin 14 by adhesion and/or other suitable means known to those of skill in the art.

In one embodiment of the invention the cover layer comprises a hot through air bonded nonwoven composed of PE/PET bicomponent fibers, such nonwoven being commercially available from Shalag Industries, Ltd., Upper Galilee, Israel.

5 Transfer Layer

The optional transfer layer (not shown in the Figures) may be composed of fibrous materials, such as wood pulp, polyester, rayon, flexible foam, or the like, or combinations thereof. The transfer layer may also optionally include a superabsorbent polymer (SAP) material. The transfer layer may also comprise thermoplastic fibers for the purpose of stabilizing
10 the layer and maintaining its structural integrity. The transfer layer may be treated with surfactant on one or both sides in order to increase its wettability, although generally the transfer layer is relatively hydrophilic and may not require treatment. The transfer layer is preferably bonded on both sides to the adjacent layers, i.e. to the cover layer 16 and the underlying core 20.

In one embodiment of the invention the transfer layer comprises an airlaid pulp material
15 commercially available from P.H. Glatfelter Company, York, PA, under product code MH090.102.

20 Absorbent Core

The absorbent core 20 may comprise a single layer of material or may comprise multiple
20 layers. In one embodiment, the core 20 is a blend or mixture of cellulosic fibers and superabsorbent disposed therein. Cellulosic fibers that can be used in the second absorbent layer 20 are well known in the art and include wood pulp, cotton, flax and peat moss. Wood pulp is preferred. Pulps can be obtained from mechanical or chemi-mechanical, sulfite, kraft, pulping

reject materials, organic solvent pulps, etc. Both softwood and hardwood species are useful. Softwood pulps are preferred. It is not necessary to treat cellulosic fibers with chemical debonding agents, cross-linking agents and the like for use in the present material. Some portion of the pulp may be chemically treated as discussed in U.S. Pat. No. 5,916,670 to improved flexibility of the product. Flexibility of the material may also be improved by mechanically working the material or tenderizing the material.

The core 20 can contain any superabsorbent polymer (SAP) which are well known in the art. For the purposes of the present invention, the term "superabsorbent polymer" (or "SAP") refers to materials which are capable of absorbing and retaining at least about 10 times their weight in body fluids under a 0.5 psi pressure. The superabsorbent polymer particles of the invention may be inorganic or organic crosslinked hydrophilic polymers, such as polyvinyl alcohols, polyethylene oxides, crosslinked starches, guar gum, xanthan gum, and the like. The particles may be in the form of a powder, grains, granules, or fibers. Preferred superabsorbent polymer particles for use in the present invention are crosslinked polyacrylates, such as the product offered by Sumitomo Seika Chemicals Co., Ltd. Of Osaka, Japan, under the designation of SA70N and products offered by Stockhausen Inc.

In a specific example, the core 20 is a material containing from 90% to about 40% percent cellulosic fiber, about 10% to about 60% SAP. The core 20 may comprise a material manufactured by using air-laying means well known in the art.

In one embodiment of the invention the core 20 is relatively thin, high swelling absorbent material sold under the trade name NOVATHIN® INT-002 available from EAM Corporation located in Jessup, Ga., U.S.A.

The absorbent core 20 may be adhered to the adjacent layers, e.g. the cover layer 16 (or transfer layer if such layer is employed) and the barrier layer 18 by means of a conventional construction adhesive well known to those of skill in the art.

5 Barrier Layer

Underlying absorbent core is the liquid impermeable barrier layer 18. The barrier layer 18 preferably comprises liquid-impervious film material so as to prevent liquid that is entrapped in the absorbent core 20 from egressing the sanitary napkin 14 and staining the wearer's undergarment. The barrier layer 18 is preferably made of polymeric film, although it may be made of liquid impervious, air-permeable material such as repellent-treated non-woven or micropore films or foams.

The barrier layer 18 may be breathable, i.e., permits vapor to transpire. Known materials for this purpose include nonwoven materials 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. The cover layer 16 and the barrier layer 18 are preferably joined along their marginal portions so as to form an enclosure or flange seal that maintains the absorbent core 20 captive. The joint may be made by means of adhesives, heat-bonding, ultrasonic bonding, radio frequency sealing, mechanical crimping, and the like and combinations thereof.

In one specific embodiment of the invention the barrier layer 18 comprises a polyethylene film material of the type commercially available from Berry Plastics Corporation, Evansville, IN.

5 Attachment Layer

The attachment layer 22 is preferably formed from a woven or nonwoven material. Nonwoven materials may include spunmelts, thermobonds, through air bonds, needlepunch or spunlace materials. Alternatively the attachment layer may be formed from polymeric films provided that such films are provided with a sufficient structure to engage with and be retained
10 by the protrusions 40 of the base assembly 12. For example such films may be provided with holes, fibrillated, or provided with some other three dimensional structure that enables the film to engage with and be retained by the protrusions 40.

As shown in Fig. 6, the attachment layer 22 in one embodiment of the invention defines a plurality of loops 42 that extend towards the base assembly 12 and are adapted to engage with
15 and be held by the hook structures 41 of the base assembly 12. In this manner, the loops 42 and hook structures 41 function to hold the sanitary napkin 14 in place during use and also permit the user to manually remove the napkin 14 once the napkin 14 has been soiled. The attachment layer
22 may comprise a single layer or may comprise a multi-layer laminate provided that such laminate includes a layer that faces the base assembly having a plurality of loops 42 as described
20 herein. The attachment layer 22 is preferably secured to the barrier layer 18, or core structure if such barrier 18 is omitted, by means of a conventional construction adhesive well known to those of skill in the art.

In one specific embodiment of the invention the attachment layer 22 comprises a liquid impermeable, air permeable, laminate structure including a microporous film core facing layer that is bonded to a spunbond nonwoven base assembly facing layer. Since the attachment layer 22 is liquid impermeable the barrier 18 may be omitted if desired. In a specific embodiment of the invention the attachment layer 22 comprises a 35 gsm laminate structure of this type commercially available from Kang Na Hsiung Enterprises Co., Ltd., Taipei, Taiwan under product code CL035-CPS5-N0.

Base Substrate

The base substrate 28 may be formed from any conformable material such as a suitably flexible woven or nonwoven material that will move with the user's undergarment. The base substrate 28 may be formed of a single layer or may be formed from a multi-layer laminate. The base substrate 28 may optionally be formed from liquid impermeable materials or may be rendered liquid impermeable by a separate treatment. As discussed above, the garment facing surface 30 of the base substrate 28 is provided with a garment attachment adhesive 34.

The garment attachment adhesive 34 may be any suitable pressure-sensitive adhesive. 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 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 acrylics or suitable block copolymers - suitable block copolymers for use in the invention include linear or radial co-polymer structures

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

5 Block B poly(monoalkenyl) blocks include, but are not 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; hot melt adhesives based upon acrylic polymers. Commercial examples of these types of block copolymers include KratonTM elastomers from Shell Chemical Company, VectorTM elastomers from Dexco, 10 SolpreneTM from Enichem Elastomers and 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 co-monomers, 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(15 polymers from DuPont), Escor (from Exxon Chemical). In a specific embodiment of the present invention the garment attachment adhesive is an acrylic hot melt Duro-Tak 34-546B from Henkel AG & Co. KGaA, Dusseldorf, Germany.

In one specific embodiment of the invention the base substrate 28 comprises a liquid impermeable, air permeable, laminate structure including a microporous film garment facing 20 layer that is bonded to a spunbond nonwoven fastener substrate facing layer. Laminate structures of this type are commonly used as a backsheet material for diapers. In a specific embodiment of the invention the attachment layer 22 comprise a 35 gsm laminate structure of

this type commercially available from Kang Na Hsiung Enterprises Co., Ltd., Taipei, Taiwan under product code CL035-CPS5-N0.

Fastener Substrate

5 The fastener substrate 38 is preferably formed from a polymeric material including a plurality of upwardly extending protrusions 40 as described above. In one embodiment of the invention each protrusion comprises a hook structure 41. Polymeric materials of this type are commercially available from Velcro USA, Inc., Manchester, NH.

10 In one specific embodiment of the invention the fastener substrate 38 comprises a polymeric material commercially available from Velcro USA, Inc., Manchester, NH under product code HTH 847.

 The fastener substrate 38 is bonded to the article facing surface of the base substrate 28 by any conventional known means in the art such as adhesion or ultrasonic bonding.

15

EXAMPLE

A quick attach absorbent article assembly according to one embodiment of the invention was constructed as follows:

5 Sanitary Napkin

Cover:

HTA 27 gsm bico fibers PE/PET, STA4ETW27, Shalag Industries, Ltd, Upper Galilee, Israel.

10 Adhesive layer:

NW 1023 1.0 gsm (100% coverage) styrenated block copolymer based hot melt pressure sensitive adhesive, HB Fuller, St Paul, MN.

Transfer layer:

15 90 gsm airlaid 90% pulp, MH090.102, P.H. Glatfelter Company, York, PA.

Adhesive layer:

NW 1023 4.0 gsm (100% coverage,) styrenated block copolymer based hot melt pressure sensitive adhesive, HB Fuller, St Paul, MN.

20

Core:

Novathin 208 gsm 25% SAP, 56mm x 205 mm, Novathin INT-002, EAM corporation, Jesup, GA.

25 Adhesive layer:

NW 1023 4.0 gsm (100% coverage,) styrenated block copolymer based hot melt pressure sensitive adhesive, HB Fuller, St Paul, MN.

Barrier:

Pliant, 0.8 mil PE metallocene, Berry Plastics Corporation, Evansville, IN.

5 Adhesive layer:

NW 1042 22.0 gsm (~40% coverage,) styrenated block copolymer based hot melt pressure sensitive adhesive, HB Fuller, St Paul, MN

Attachment layer:

10 a 35 gsm laminate structure of this type commercially available from Kang Na Hsiung Enterprises Co., Ltd., Taipei, Taiwan under product code CL035-CPS5-N0.

Base Assembly

Base substrate:

15 a 35 gsm laminate structure of this type commercially available from Kang Na Hsiung Enterprises Co., Ltd., Taipei, Taiwan under product code CL035-CPS5-N0.

Garment attachment adhesive on a garment facing surface of the base substrate:

20 an acrylic hot melt Duro-Tak 34-546B from Henkel AG & Co. KGaA, Dusseldorf, Germany.

Fastener substrate:

a polymeric material commercially available from Velcro USA, Inc., Manchester, NH under product code HTH 847.

25 Adhesive between base substrate and fastener substrate:

NW 1042 22.0 gsm styrenated block copolymer based hot melt pressure sensitive adhesive, HB Fuller, St Paul, MN

While particular embodiments of the preset invention have been illustrated and described, it would be obvious to those skilled in the art that various other changes and modifications can be made without departing from the spirit and scope of the invention. It is therefore intended to cover in the appended claims all such changes and modifications that are within the scope of the
5 invention.

Reivindicaciones:

1. Un sistema con un artículo absorbente de adhesión rápida que comprende:
un componente base que se une selectivamente a una prenda íntima, el
5 componente base incluye una pluralidad de salientes, y
un artículo absorbente;
en donde el artículo absorbente está estructurado y dispuesto para adaptarse
y mantenerse en su lugar sobre la prenda íntima por medio de las salientes.
- 10 2. El sistema con un artículo absorbente de adhesión rápida de conformidad con la
reivindicación 1, en donde cada una de las salientes comprende una estructura de
ganchos.
3. El sistema con un artículo absorbente de adhesión rápida de conformidad con la
15 reivindicación 2, en donde el componente base comprende un sustrato base y un
sustrato sujetador.
4. El sistema con un artículo absorbente de adhesión rápida de conformidad con la
reivindicación 3, en donde el sustrato sujetador incluye una pluralidad de estructuras
20 de ganchos.
5. El sistema con un artículo absorbente de adhesión rápida de conformidad con la
reivindicación 4, en donde una superficie orientada hacia la prenda del sustrato base
incluye un adhesivo sujetador a la prenda adaptado para permitir que la usuaria
25 adhiera selectivamente el componente base a la prenda íntima.
6. El sistema con un artículo absorbente de adhesión rápida de conformidad con la
reivindicación 5, en donde el artículo absorbente comprende una capa de adherencia.

7. El sistema con un artículo absorbente de adhesión rápida de conformidad con la reivindicación 6, en donde la capa de adherencia incluye una pluralidad de presillas; las presillas están estructuradas y dispuestas para acoplarse y ser retenidas por las
5 estructuras de ganchos.

8. El sistema con un artículo absorbente de adhesión rápida de conformidad con la reivindicación 7, en donde el artículo absorbente comprende, además, una capa de cubierta permeable a líquidos orientada hacia el cuerpo.

10

9. El sistema con un artículo absorbente de adhesión rápida de conformidad con la reivindicación 8, en donde el artículo absorbente comprende, además, un centro absorbente dispuesto entre la capa de cubierta y la capa de adherencia.

CLAIMS

We claim:

5

1. A quick attach absorbent article assembly comprising:

a base assembly selectively attachable to an undergarment, said base assembly including a plurality of protrusions; and

an absorbent article;

10

wherein said absorbent article is structured and arranged to be engaged by and held in place in said undergarment by said protrusions.

2. The quick attach absorbent article assembly according to claim 1, wherein each of said protrusions comprises a hook structure.

15

3. The quick attach absorbent article assembly according to claim 2, wherein said base assembly comprises a base substrate and a fastener substrate.

20

4. The quick attach absorbent assembly according to claim 3, wherein said fastener substrate includes a plurality of said hook structures.

5. The quick attach absorbent article assembly according to claim 4, wherein a garment facing surface of said base substrate includes a garment attachment adhesive adapted to allow a user to selectively attach the base assembly to said undergarment.

5 6. The quick attach absorbent article assembly according to claim 5, wherein said absorbent article comprises an attachment layer.

7. The quick attach absorbent article assembly according to claim 6, wherein said attachment layer includes a plurality of loops, said loops being structured and arranged to be engaged and
10 retained by said hook structures.

8. The quick attach absorbent article assembly according to claim 7, wherein said absorbent article further comprises a liquid permeable body facing cover layer.

15 9. The quick attach absorbent article assembly according to claim 8, wherein said absorbent article further comprises an absorbent core arranged between said cover layer and said attachment layer.

ABSTRACT

A quick attach absorbent article assembly including a base assembly selectively attachable to a crotch region of an undergarment and a absorbent article selectively attachable to the base assembly. The base assembly is provided with a plurality of protrusions structured and
5 arranged to engage and retain the absorbent article during use.

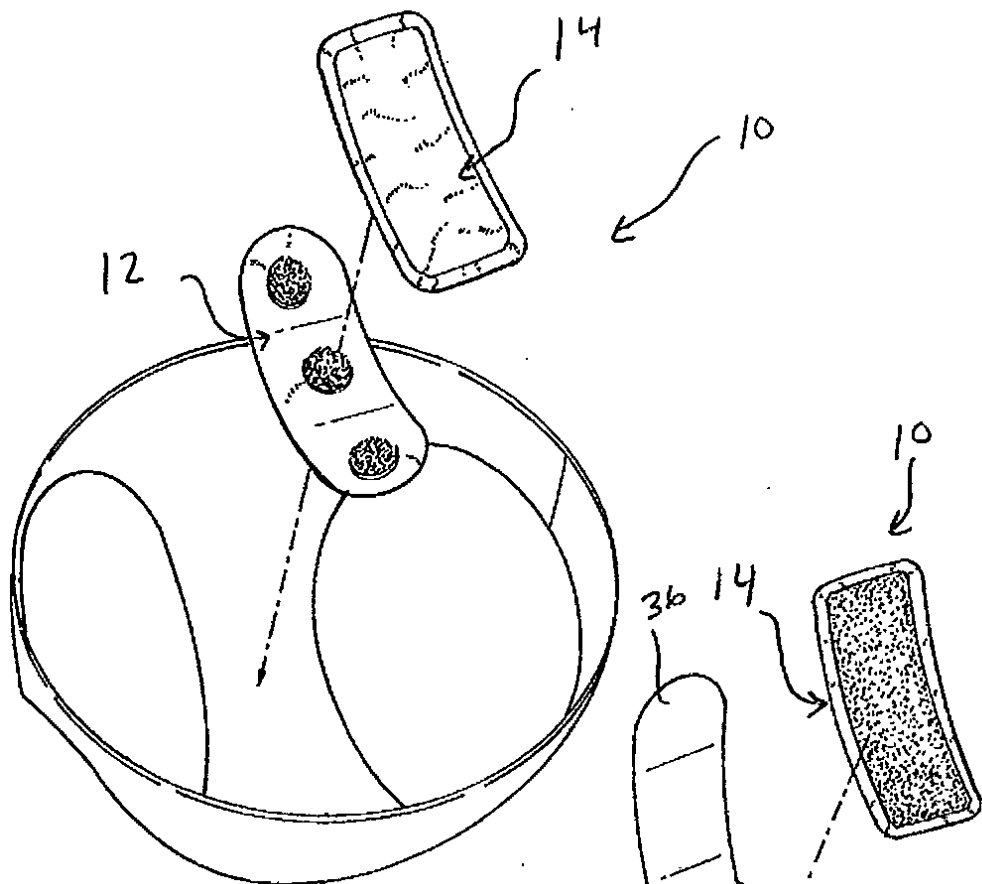


Fig. 1

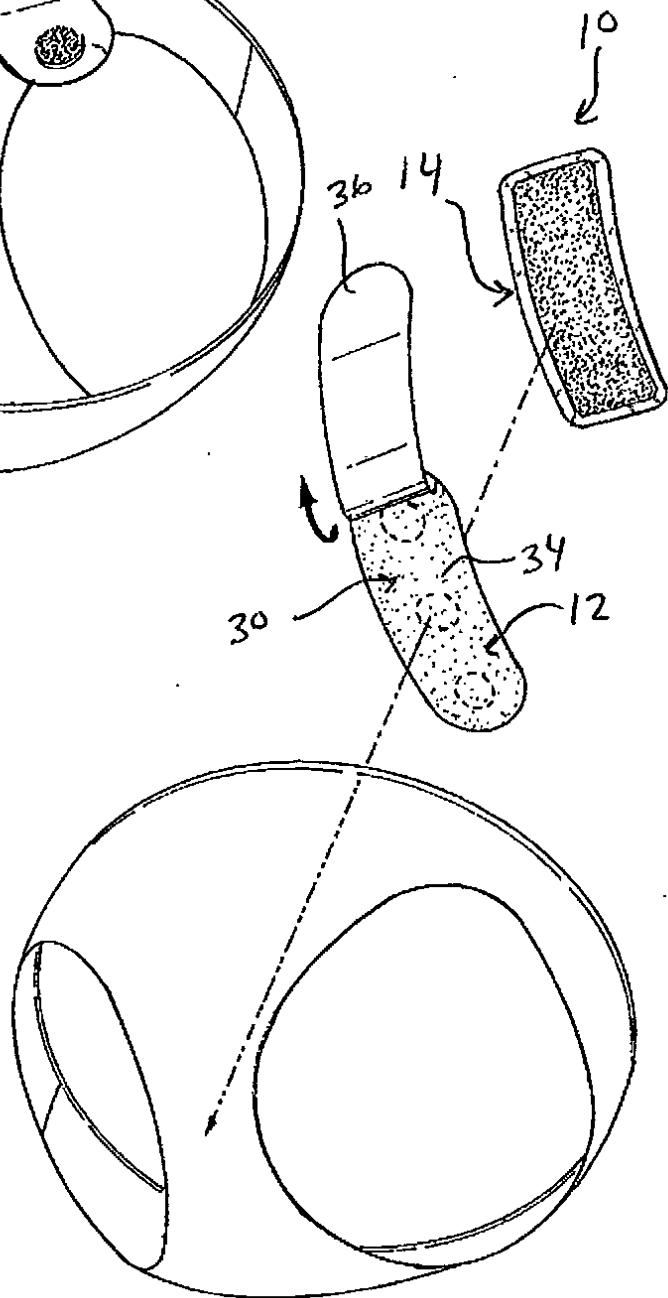


Fig. 2

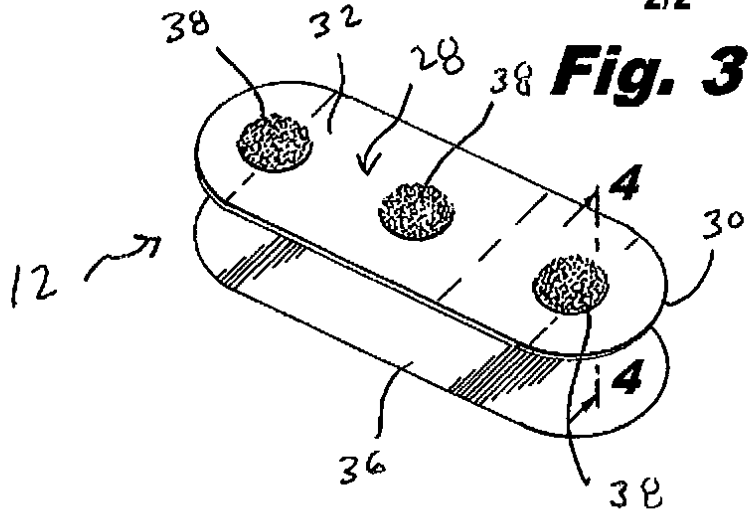


Fig. 3

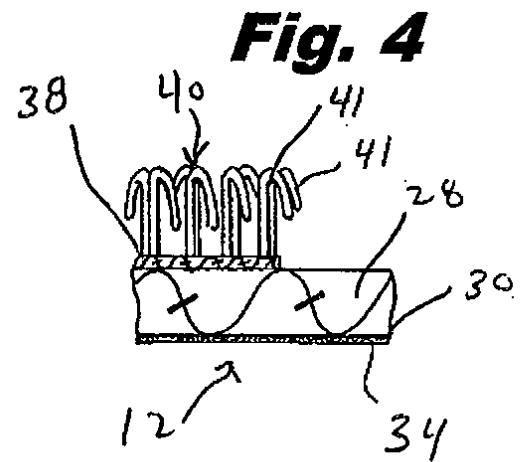


Fig. 4

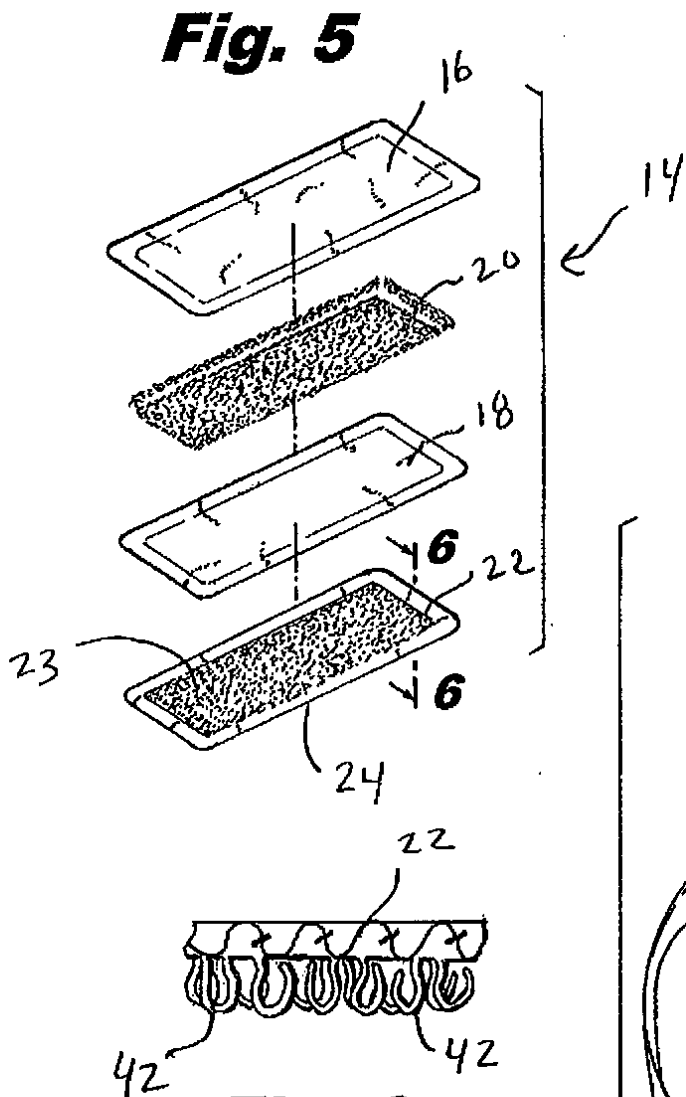


Fig. 5

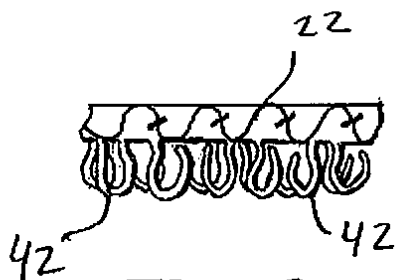


Fig. 6

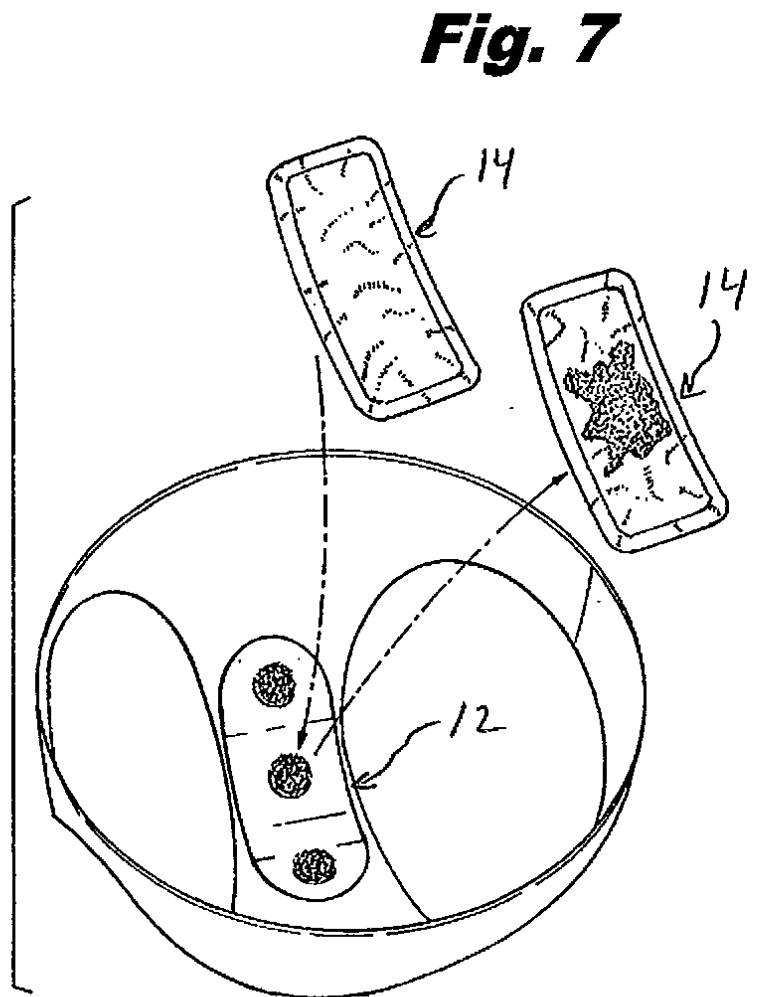


Fig. 7