

Drigard & Castro

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REF Expediente No 00 073 416 - Solicitud de Patente

a favor de KIMBERLY - CLARK WORLDWIDE, INC.

401 North Lake Street, Neenah, Wisconsin 54956 USA

Titulada ARTICULO ABSORBENTE QUE TIENE UN MECANISMO
RESUJETABLE

RAMIRO CASTRO DUQUE, vecino de Bogota, portador de la tarjeta profesional No 1003, obrando como apoderado de la sociedad KIMBERLY - CLARK WORLDWIDE, INC , segun lo acredita el documento de poder protocolizado en esa Division bajo el numero 17397, me permito anexar al presente escrito los siguientes documentos

- 1 Copia certificada por la Oficina de Patentes de los Estados Unidos de la primera solicitud presentada para la misma invención, de la cual REIVINDICAMOS PRIORIDAD, junto con su correspondiente traduccion del Inglés al castellano

Del señor Jefe atentamente,



RAMIRO CASTRO DUQUE

C C No 170 322 de Bogota

Codigo 340

Cra 7a No 16-56 Piso 9

Santafe de Bogota, Marzo 12, 2001

CPB/hsr

CERTIFICATION

STATE OF WISCONSIN)
) SS
COUNTY OF WINNEBAGO)

I hereby certify that the attached papers constitute an identical copy of the original of U. S. Patent Application corresponding to Serial No. **09/637,428** for **ABSORBENT ARTICLE HAVING A REFASTENABLE MECHANISM** filed on **August 11, 2000**, assigned to Kimberly-Clark Worldwide, Inc. and I further certify that Kimberly-Clark Worldwide, Inc. is a corporation organized and existing under the laws of the State of Delaware, United States of America.

Dated this 10th day of November, 2000, at Neenah, Wisconsin, United States of America.

Melissa A. Blob
Melissa A. Blob, Notary Public
My commission expires: August 1, 2004

(No Legalization)

PA 316571



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

October 16, 2000

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

APPLICATION NUMBER: 09/637,428

FILING DATE: August 11, 2000



By Authority of the
COMMISSIONER OF PATENTS AND TRADEMARKS

H. L. JACKSON

Certifying Officer

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The filing fee, pursuant to 37 C.F.R. 1.16(a), (b), (c) and (d), has been calculated as follows:

	Number Filed		Number Extra	Rate	Fee
Total Claims	20	-20 =	0	x 18 (fee code 103) =	\$0.00
Independent Claims	3	-3 =	0	x 75 (fee code 102) =	\$0.00
First Presentation of Multiple Dependent Claims				+ 250 (fee code 104) =	\$0.00
				Base Fee (fee code 101)	\$680.00
				TOTAL	\$680.00

Please charge Kimberly-Clark Worldwide, Inc. deposit account number 11-0875 for (1) the filing fee indicated in the TOTAL above; and (2) any patent application processing fees required under 37 C.F.R. 1.17. In the event the filing fee indicated in the TOTAL above has been incorrectly calculated, please charge any additional filing fee or credit any excess in the filing fee to Kimberly-Clark Worldwide, Inc. deposit account number 11-0875.

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Respectfully submitted,

FREIBURGER ET AL

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CERTIFICATE OF MAILING

I, Lanette Burton, hereby certify that on August 11, 2000 this document is being deposited with the United States Postal Service, postage prepaid, Express Mail No. EK563677343US in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231.

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ABSORBENT ARTICLE HAVING A REFASTENABLE MECHANISM

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FIELD OF THE INVENTION

This invention relates to an absorbent article having a refastenable mechanism.
More specifically, this invention relates to a disposable absorbent article having a
10 refastenable mechanism that improves body fit and reduces the likelihood of fluid leakage.

BACKGROUND OF THE INVENTION

Today, various disposable absorbent articles exist which are designed to absorb
15 and retain body fluid and/or excrement. Examples of such articles include incontinence
products such as pants, briefs and undergarments, baby diapers, feminine care menstrual
pants, training pants, etc. While most of these articles perform satisfactorily for their
intended purpose, some are difficult to remove from the body of the wearer. Many do not
have a refastenable mechanism that allows the article to be easily adjusted during use or
20 be easily removed from the wearer's body before the product is permanently discarded
while maintaining an underwear like fit. Some of today's commercially available products
do not conform well to the human body and this poor fit increases the likelihood of fluid
leakage while the product is being worn. Therefore, there remains a need for a disposable
absorbent article having a refastenable mechanism that will provide improved fit to the
25 human body and reduce the likelihood of fluid leakage.

Now, an absorbent article has been invented which has a refastenable mechanism
that improves body fit and reduces the likelihood of fluid leakage.

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SUMMARY OF THE INVENTION

Briefly, this invention relates to an absorbent article having a refastenable mechanism. The absorbent article has a front portion, a back portion and a crotch portion.

- 5 The crotch portion connects the front portion to the back portion. The front portion has a first end, a second end, a first side edge and a second side edge. First and second lateral sections are releasably attached to the front portion and each of the first and second lateral sections has an outer edge. The back portion has first and second side edges and first and second ends. The back portion is divided into a first section and a second
- 10 section. The first section has a length L_1 measured perpendicularly from the first end of the back portion to a line drawn parallel thereto. The second section has a length L_2 measured perpendicularly from the second end of the back portion to the line drawn parallel to the first end whereby a ratio L_1/L_2 is established which ranges from between about 0.1 to about 2. The absorbent article further includes an absorbent secured to at
- 15 least one of the front, back or crotch portions. Each of the outer edges of the first and second lateral sections are secured to one of the first and second side edges of the back portion to form a pant-like article having a waist opening and a pair of leg openings.

- The general object of this invention is to provide an absorbent article having a refastenable mechanism. A more specific object of this invention is to provide a
- 20 disposable absorbent article having a refastenable mechanism that improves body fit and reduces the likelihood of fluid leakage.

Another object of this invention is to provide an absorbent article having a refastenable mechanism that is easy to manufacture, is relatively inexpensive and is easy to use.

- 25 A further object of this invention is to provide an absorbent article having a refastenable mechanism that provides the wearer with a choice of how to apply and/or remove the absorbent article, i.e. pull the article up around the wearer's torso versus refasten the article around the wearer's torso.

- Still another object of this invention is to provide an absorbent article that can
- 30 easily be adjusted to conform to a wearer's body.

Other objects and advantages of the present invention will become more apparent to those skilled in the art in view of the following description and the accompanying drawings.

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BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a top plane view of an absorbent article having a refastenable mechanism and shown in a pre-assembled flat configuration.

5 Fig. 2 is a cross-sectional view of Figure 1 taken along line 2—2.

Fig. 3 is a cross-sectional view of Figure 1 taken along the line 3—3.

Fig. 4 is a cross-sectional view of Figure 1 taken along the line 4—4.

Fig. 5 is a top view of an alternative absorbent assembly.

Fig. 6 is a cross-sectional view of Fig. 5 taken along line 6—6.

10 Fig. 7 is a perspective view of the "in use" configuration of the absorbent article shown in Figure 1 once the first and second lateral section and the back portion are secured together.

Fig. 8 is a top view of the back portion of the absorbent article with the elastic removed for clarity and showing one way to measure a ratio A_2/A_1 for the second section in order to obtain improved body fit.

15 Fig. 9 is a top view of the back portion and crotch portion of the absorbent article with the elastic removed for clarity and showing an alternative way to measure a ratio A_2/A_1 for the second section in order to obtain improved body fit.

20 DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to Figs. 1 to 4, an absorbent article 10 having a refastenable mechanism is shown. The absorbent article 10 is preferably a disposable article having a longitudinal central axis X—X, a transverse central axis Y—Y and a vertical central axis Z—Z. The absorbent article 10 includes a front portion 12, a back portion 14 and a crotch portion 16. The crotch portion 16 connects the front portion 12 to the back portion 14. The front, back and crotch portions 12, 14 and 16 can be formed from a single piece of material or from two or more pieces of material. Each of the front, back and crotch portions 12, 14 and 16 can be a single layer of material or each can be formed as a laminate having two or more layers. In Fig. 2, the front portion 12 is shown as a single layer 18 although it could be formed from a laminate. In Figs. 3 and 4, the back portion 14 and the crotch portion 16 are shown as a laminate 20 having an upper layer 22 and a lower layer 24. Preferably, the front, back and crotch portions 12, 14 and 16, respectively, are formed as a laminate having two layers.

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When a laminate 20 is utilized, the upper layer 22 faces toward the body of the wearer in use and can be either liquid permeable or liquid-impermeable. A thermoplastic film can be used to make the upper layer 22 liquid-impermeable. The lower layer 24 faces away from the body of the wearer in use and it too can either be liquid permeable or liquid-impermeable. Preferably, the lower layer 24 is liquid permeable and is formed from a soft material such as a non-woven. Spunbond is a non-woven material manufactured by Kimberly-Clark Corporation that is soft and pliable and functions well as the lower layer 24. It is beneficial to make one of the layers 22 or 24 liquid-impermeable in the crotch portion 16 so as to prevent body fluid absorbed by the absorbent article 10 from exiting.

The front portion 12, which will be aligned around a portion of the front torso of a wearer's body in use, includes a first end 26, a second end 28, a first side edge 30 and a second side edge 32. First and second lateral sections 34 and 36, respectively, are releasably attached to the front portion 12. This provides a refastenable mechanism that can be released and then refastened and adjusted as many times as needed by the wearer. Each of the first and second lateral sections 34 and 36 has an inner edge 38 and 40, respectively, and an outer edge 42 and 44, respectively. The inner edges 38 and 40 can be arranged parallel to the longitudinal central axis X—X of the absorbent article 10. Preferably, the inner edges 38 and 40 are aligned adjacent to one another. More preferably, the inner edges 38 and 40 are arranged in an abutting relationship to one another. The inner edges 38 and 40 can initially be directly or indirectly attached to one another if desired. For purposes of manufacturing, it is sometimes advantageous to secure different members to one another so as to facilitate high-speed production.

One means of attaching the inner edges 38 and 40 of the first and second lateral sections 34 and 36, is to form breakable bonds or perforations 46 therebetween. For example, a line of perforations 46 or a line of frangible bonds 46 can join the two inner edges 38 and 40 together. The perforations or frangible bonds 46 should be designed so that they can be easily broken by the wearer. The perforations or frangible bonds 46 can be initially broken before the absorbent article 10 is placed around the torso of the user or after the absorbent article 10 has been worn but just before an adjustment is required to improve body fit.

Each of the first and second lateral sections 34 and 36 can be formed from a single layer of material or be formed as a laminate. When the first and second lateral sections 34 and 36 are in the form of a laminate, they should have an upper layer 48 and a lower layer 50. The first and second lateral sections 34 and 36 can be either liquid

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permeable or liquid-impermeable. Preferably, the first and second lateral sections 34 and 36 are liquid permeable and are constructed from a soft material such as a non-woven. The first and second lateral sections 34 and 36 can be formed from an elastic material or contain multiple elastic strands 52, as shown in Figs. 1 and 2. The elastic strands 52 can vary in size, length and shape. Elongated elastic ribbons, elastic strips, elastic bands, elastic tape having round, flat or some other cross-sectional configuration can also be used.

It should be noted that the elastic 52 would provide the first and second lateral sections 34 and 36 with extendible properties. Alternatively, the first and second lateral sections 34 and 36 can be formed from a material that exhibits elastomeric properties. The elastic 52 can be formed from rubber, polyurethane or other elastomeric materials. A suitable material is LYCRA® that is commercially available from the E.I. Du Pont De Nemours and Company. LYCRA® is a trademark of E.I. Du Pont De Nemours and Company having an office in Wilmington, Delaware.

The elastic 52 can include two or more members positioned between the upper and lower layers 48 and 50, respectively, and held in place by glue, an adhesive or some other type of binder. Preferably, the elastic 52 is in the form of multiple strands arranged in parallel rows relative to one another. Other arrangements for the elastic 52 can also be used.

Turning our attention to Fig. 2, one can clearly see that the first and second lateral sections 34 and 36 overlay a substantial amount of the front portion 12. The first and second lateral sections 34 and 36 could overlay the entire surface area of the front portion 12 if desired. The first and second lateral sections 34 and 36 are releasably attached to the front portion 12 by a fastener 54. In Fig. 2, the fastener 54 is shown as a hook and loop fastener having a hook component 56 and a loop component 58. Either the hook component 56 or the loop component 58 can be secured to the front portion 12 or to the first and second lateral sections 34 and 36. It should also be recognized that other types of fasteners could be used to releasably attach the first and second lateral sections 34 and 36 to the front portion 12. Such other fasteners can include adhesives, co-adhesives, as well as mechanical fasteners, such as buttons and corresponding buttonholes, etc. Other fasteners are known to those skilled in the art.

The front portion 12 can be constructed from a material that has hook or loop properties or have a separate piece of hook or loop material secured thereto to give it the ability to fasten onto the first and second lateral sections 34 and 36. Likewise, the first

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and second lateral sections 34 and 36 can be constructed from a material that has hook or loop properties or have a separate piece of hook or loop material secured thereto to give it the ability to fasten onto the front portion 12. The fastener 54 functions to allow the first and second lateral sections 34 and 36 to be released from the front portion 12 and be refastened onto the front portion 12 multiple times. This means that the wearer can easily remove the absorbent article 10 from his or her body, for example, to go to the toilet, and then refasten the absorbent article 10 about his or her torso. The refastenable mechanism also provides the wearer with the opportunity to release and adjust the absorbent article 10 about their body during use. For example, if the absorbent article 10 appears to be too tight, the wearer can release the first and second lateral sections 34 and 36 from the front portion 12 and then refasten them to loosen the absorbent article 10 against the wearer's body.

Referring to Fig. 1, it should be noted that unlike the hook and loop fasteners 56 and 58, the breakable bonds 46, which secure the first and second lateral sections 34 and 36 together, are designed to be broken only once. The primary function of the breakable bonds 46 is to join the first and second lateral sections 34 and 36 together during manufacture of the absorbent article 10 and during application of the product as a pull-on article. The absorbent article 10 can be pulled up around the torso of a wearer without breaking the breakable bonds 46. In this case, they will need to be broken before the first and second lateral sections 34 and 36 can be released from the front portion 12.

Returning again to Figs. 1 and 2, the first and second lateral sections 34 and 36 have a length represented by L_1 . The length L_1 is measured parallel to the longitudinal central axis X—X. The length L_1 should be equal to or greater than about 2 inches (about 5 cm). Preferably, for an adult size garment, the length L_1 should range from between about 3 inches to about 7 inches (about 7.6 cm to about 18 cm). Most preferably, for an adult size garment, the length L_1 should range from between about 5 inches to about 7 inches (about 15 cm to about 18 cm). The significance of the dimension L_1 will be explained shortly.

Referring now to Figs. 1 and 3, the absorbent article 10 also includes the back portion 14 that will contact the back portion of a wearer's torso in use. The back portion 14 has first and second side edges 60 and 62, respectively, and first and second ends, 64 and 66 respectively. The back portion 14, as explained above, is depicted as a laminate having an upper layer 22 and a lower layer 24. The upper layer 22, which is closest to the body of the wearer can be liquid permeable or liquid-impermeable. Preferably, the upper

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layer 22 is liquid permeable. The back portion 14 is divided into a first section 68 and a second section 70. The first section 68 has a length L_2 measured perpendicularly from the first end 64 to a line 72 drawn parallel thereto. The length L_2 should be equal to or greater than about 2 inches (about 5 cm). Preferably, for an adult size garment, the length L_2 should range from between about 3 inches to about 7 inches (about 7.6 cm to about 18 cm). Most preferably, for an adult size garment, the length L_2 should range from between about 6 inches to about 7 inches (about 15 cm to about 18 cm).

The first section 68 can be formed from an elastic material, an elastic composite or it can contain elastic 74. "Stretch bonded laminate" is an elastic material that can be used to form the first section 68. Stretch bonded laminate is manufactured by Kimberly-Clark Corporation having an office at 401 North Lake Street, Neenah, Wisconsin 54958. The elastic 74 can be in the form of elongated elastic strands, ribbons, strips, etc. which extend transversely across the first section 68 from the first side edge 60 to the second side edge 62. Preferably, there are at least six elastic strands 74 contained in the first section 68. The number of elastic strands 74 can vary from two to about fifty. Preferably, the number of elastic strands 74 will range from between about ten to about forty. The elastic 74 functions to cause the back portion 14 of the absorbent article 10 to securely contact the back torso of the wearer and prevent fluid leakage from occurring at or about the waist opening.

The second section 70 of the back portion 14 has a length L_3 measured perpendicularly from the second end 66 to the line 72 drawn parallel to the first end 64. The length L_3 should be equal to or greater than about 1 inch (about 2.5 cm). Preferably, for an adult size garment, the length L_3 should range from between about 3 inches to about 10 inches (about 8 cm to about 25 cm). Most preferably, for an adult size garment, the length L_3 should range from between about 4 inches to about 8 inches (about 10 cm to about 20 cm).

The second section 70 may or may not contain elastic 74 that extend transversely there across. By designing and manufacturing the absorbent article 10 to have a ratio L_2/L_3 , which ranges from between about 0.1 to about 2, one can improve the body fit of the disposable absorbent article 10. Preferably, the ratio L_2/L_3 ranges from between about 0.2 to about 1.6, and more preferably, the ratio L_2/L_3 ranges from between about 0.3 to about 1.5. By manufacturing the back portion 14 to this desired ratio, one can also minimize fluid leakage.

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The second section 70 can have first and second leg elastics 76 and 78 that are aligned adjacent to first and second edges 80 and 82. Preferably, the line 72 will intersect at a point where the first and second edges 80 and 82 meet the first and second edges 80 and 82, respectively. The leg elastics 76 and 78 can include one or more elastic strands, ribbons or strips that are arranged approximately parallel to the first and second edges 80 and 82, respectively. Preferably, there are from between about one to about six elongated elastic strands making up each leg elastic 76 and 78. Most preferably, each of the leg elastics 76 and 78 contains three elastic strands. The elastic strands can be aligned parallel to one another. For good results, the leg elastics 76 and 78 should be positioned inward about 1 inch (about 2.5 cm) from the first and second edges 80 and 82, respectively. More preferably, the leg elastics 76 and 78 should be positioned inward about .75 inches (about 2 cm) from the first and second edges 80 and 82, respectively. Most preferably, the leg elastics 76 and 78 should be positioned inward about .5 inches (about 1.3 cm) from the first and second edges 80 and 82.

The leg elastics 76 and 78 are shown extending from the side edges 80 and 82 of the first section 68 to the second end 66 of the back portion 14. One should note that the exact location of the line 72 would dictate whether the leg elastics 76 and 78 are completely contained within the second section 70 or if they extend into the first section 68. The leg elastics 76 and 78 function to gather the material from which the back portion 14 is formed at a location adjacent to the leg openings. The leg openings are formed as the first and second lateral sections 34 and 36 are secured to the back portion 14 to form a pant-like article. Various types of elastics can be used to form the leg elastics 76 and 78. The leg elastics 76 and 78 should have a tension of from between about 10 grams to about 400 grams. Preferably, the leg elastics 76 and 78 should have a tension of from between about 50 grams to about 220 grams. More preferably, the leg elastics 76 and 78 should have a tension of from between about 80 grams to about 200 grams.

Referring to Figs. 1, 2 and 4, the absorbent article 10 also includes the crotch portion 16. The crotch portion 16 connects the front portion 12 to the back portion 14. As noted above, the front portion 12, back portion 14 and the crotch portion 16 can all be part of a single sheet of material. The crotch portion 16 has a first side edge 84 and a second side edge 86 and can have an hourglass, rectangular, square, oval or some other configuration. Each of the side edges 84 and 86 can be straight and aligned parallel or non-parallel to one another. The side edges 84 and 86 can also be curved, arcuate, irregular, convex or concave in shape. Preferably, the side edges 84 and 86 are arcuate

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in shape with the narrowest distance between the side edges 84 and 86 occurring along the transverse centerline Y—Y. The crotch portion 16 can be a single layer 18, as depicted, or a laminate. Since the crotch portion 16 acts as a baffle to body fluid that is absorbed by the absorbent article 10, it should be liquid-impermeable. If the crotch portion 16 is a laminate, at least one of the layers forming the laminate should be liquid-impermeable. Polypropylene, polyethylene, or any other thermoplastic material works well as a liquid-impermeable layer. Preferably, the crotch portion 16 is a laminate formed from a layer of thermoplastic film and a layer of non-woven material. The non-woven material can be spunbond. Spunbond is a non-woven material manufactured and commercial sold by Kimberly-Clark Corporation having an office at 401 North Lake Street, Neenah, Wisconsin 54956.

The crotch portion 16 can also include first and second crotch elastics 88 and 90. The crotch elastics 88 and 90 are located adjacent to the first and second side edges 84 and 86, respectively. The crotch elastics 88 and 90 are preferably contoured to match the profile of the side edges 84 and 86. The crotch elastics 88 and 90 are located inward about 1 inch (about 2.5 cm) of the first and second side edges 84 and 86, respectively. Preferably, the crotch elastics 88 and 90 are located inward about .75 inches (about 2 cm) of the first and second side edges 84 and 86, respectively. More preferably, the crotch elastics 88 and 90 are located inward about .5 inches (about 1.3 cm) of the first and second side edges 84 and 86, respectively.

The crotch elastics 88 and 90 should have a tension of from between about 10 grams to about 400 grams. Preferably, the crotch elastics 88 and 90 should have a tension of from between about 50 grams to about 220 grams. More preferably, the crotch elastics 88 and 90 should have a tension of from between about 80 grams to about 200 grams.

The crotch elastics 88 and 90 can include one or more elongated elastic strands, ribbons or strips. Preferably, each of said first and second crotch elastics 88 and 90 includes at least two strands of elastics, and more preferably, at least three strands of elastics. The strands of each of the crotch elastics 88 and 90 can be aligned parallel to one another or they can be aligned in a non-parallel relationship, if so desired. A parallel alignment is preferred. The strands of each of the crotch elastics 88 and 90 can be spaced fairly close together, for example, within a millimeter of each other. The exact spacing can be adjusted depending on the size of the article, the width of the crotch

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portion 16, the strength of the crotch elastics 88 and 90, the material from which the absorbent article 10 is constructed, etc.

Referring to Figs. 3 and 4, the crotch elastics 88 and 90 can be positioned and secured between the layers 22 and 24 forming the laminate, similar to that shown in Fig. 3. Alternatively, the crotch elastics 88 and 90 can be adhered to an upper surface 82 of the upper layer 22 of the laminate, see Fig. 4. Preferably, the first and second crotch elastics 88 and 90 are bonded to the upper surface 82 of the upper layer 22 by an adhesive.

Referring to Figs. 1-4, the absorbent article 10 can include a liquid permeable liner 94. The liquid permeable liner 94 is also referred to as a bodyside cover. The liner 94 is not required, but the absorbent article 10 will be described as including the liner 94. The liquid permeable liner 94, when present, can be formed from any natural or synthetic material that is liquid permeable. The liquid permeable liner 94 can also be formed from a non-woven material. Spunbond is a good material from which to construct the liquid permeable liner 94.

The liquid permeable bodyside liner 94 can be secured to at least one of the front, back or crotch portions 12, 14 or 16. The liquid permeable liner 94 is shown being directly attached to the crotch portion 16 in Fig. 4. Alternatively, the liquid permeable liner 94 can be indirectly attached to the crotch portion 16 via one or more layers. In this case, the intermediate layer would be secured to at least one of the front, back or crotch portions 12, 14 or 16. For example, the liquid permeable liner 94 could be secured to a liquid-impermeable baffle, that is then adhesively secured to the crotch portion 16.

In Fig. 1, the periphery of the liquid permeable liner 94 and the periphery of the crotch portion 16 are shown to be coterminal. When the crotch elastics 88 and 90 are positioned on the upper surface 82 of the laminate 20, they can be adhesively secured to the bodyside liner 94 such that they are arranged adjacent to the side edges 84 and 86 of the crotch portion 16.

The absorbent article 10 further includes an absorbent 96 positioned below the liquid permeable liner 94. The absorbent 96 can be in direct contact with the upper layer 48 of the crotch portion 16. The absorbent 96 is designed to absorb body fluid, especially urine and can include one or more layers of absorbent material. The layers can be constructed of similar or different materials. Suitable materials for the absorbent 96 include cellulose, wood pulp fluff, rayon, cotton, and meltblown polymers such as polyester, polypropylene or coforn. Coforn is a meltblown air-formed combination of

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meltblown polymers, such as polypropylene, and absorbent staple fibers, such as cellulose. A preferred material is wood pulp fluff, for it is low in cost, relatively easy to form and has great absorbency. It should be noted that if two or more layers are utilized, that it is not necessary that all the layers be formed from the same material or have the same density.

The absorbent 96 can also be formed from a composite comprised of a hydrophilic material that can be formed from various natural or synthetic fibers, wood pulp fibers, regenerated cellulose or cotton fibers, or a blend of pulp and other fibers. A preferred material is airlaid tissue.

It is also possible and sometimes advantageous to insert a superabsorbent material into the absorbent 96 so as to increase its ability to absorb a large amount of fluid in relation to its own weight. Typical superabsorbents used in absorbent articles such as incontinence garments and diapers can absorb more than 10 times their weight in body fluid. The superabsorbent material can be inserted as particles, fibers or in sheet form.

Hydroxyfunctional polymers have been found to be good superabsorbents for disposable absorbent articles. Such superabsorbents are commercially available from The Dow Chemical Company, Stockhausen, Inc., as well as other companies. Two such superabsorbents are DRYTECH® 2035 M and FAVOR® SXM 880. DRYTECH® is a registered trademark of The Dow Chemical Company having an office at 2030 Dow Center, Midland, Michigan 48642. FAVOR® is a registered trademark of Stockhausen, Inc. having an office at 2401 Doyle Street, Greensboro, North Carolina 27408. The superabsorbent can be a partially neutralized salt of cross-linked copolymers of polyacrylic acid. Other types of superabsorbent materials known to those skilled in the art can also be used.

Referring now to Figs. 5 and 6, an absorbent assembly 98 is depicted which includes, from top to bottom, a liquid permeable bodyside liner 94, one or more layers of an absorbent 96, one layer being shown, and a liquid-impermeable baffle 100. The liquid-impermeable baffle 100 can be formed from a thin layer of thermoplastic material such as polyethylene, polypropylene or other kinds of liquid-impermeable material. Preferably, the baffle 100 is formed from a liquid-impermeable film. It should be noted that the baffle 100 could be formed from a laminate wherein at least one of the layers is liquid-impermeable.

In the absorbent assembly 98, the crotch elastics 88 and 90 are sandwiched between the liner 94 and the baffle 100. The crotch elastics 88 and 90 can be held in place by a glue, an adhesive, by ultrasonics, by heat, by pressure, by a combination of

heat and pressure, or by some other bonding mechanism known to those skilled in the art. It is also possible to secure the crotch elastics 88 and 90 to the lower or exterior surface of the baffle 100 if desired. For good results, the crotch elastics 88 and 90 should be positioned within about 1 inch (about 2.5 cm) from the respective side edge 84 and 86.

- 5 More preferably, the crotch elastics 88 and 90 should be positioned within about .75 inches (about 2 cm) from the respective side edge 84 and 86. Most preferably, the crotch elastics 88 and 90 should be positioned within about .5 inches (about 1.3 cm) from the respective side edge 84 and 86.

- The absorbent assembly 98 can be placed or positioned on or over the crotch portion 16 of the absorbent article 10 and can be retained in place by an adhesive or some other type of fastener. Since the baffle 100 is liquid-impermeable, the crotch portion 16 would not have to be constructed from a liquid-impermeable material. The absorbent assembly 98 can be either permanently or releasably secured to at least one of the front, back or crotch portions 12, 14 or 16 of the absorbent article 10. Preferably, the absorbent assembly 98 is secured to the crotch portion 16 by an adhesive.

- Referring now to Figs. 1 and 7, the outer edges 42 and 44 of the first and second lateral sections 34 and 36 are securely attached to the first and second side edges 60 and 62, respectively, of the back portion 14 to form a pant-like article 102. The pant-like article 102 has a waist opening 104 and a pair of first and second leg openings 106 and 108.
- 20 The leg elastic 76, the crotch elastic 90, and possibly the elastic first section 68 can cooperate to form gathers 110 around the first leg opening 106. Likewise, the leg elastic 78, the crotch elastic 90, and possibly the elastic first section 68 can cooperate to form gathers 112 around the second leg opening 108. It should be noted that the absorbent article 10 could be sold in either the assembled condition, as is shown in Fig. 7 or with the lateral sections 34 and 36 detached from the front portion 12.

- Referring again to Fig. 1, the back portion 14 of the disposable absorbent article 10 has been described with reference to a first section 68 and a second section 70. The first section 68 has a length L_1 and the second section 70 has a length L_2 , both measured parallel to the longitudinal central axis X—X. The combination of the length L_1 and the length L_2 equals a new length L_4 . The length L_4 should range from between about 3 inches (about 7.5 cm) to about 25 inches (about 64 cm). Preferably, for an adult size garment, the length L_4 should range from between about 7 inches to about 17 inches (about 18 cm to about 43 cm). Most preferably, for an adult size garment, the length L_4

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should range from between about 10 inches to about 15 inches (about 25 cm to about 38 cm).

In addition, the absorbent article 10 has an overall length L_3 measured perpendicularly from a first end 114 of the first and second lateral sections 34 and 36 to the first end 64 of the back portion 14. The length L_3 should range from between about 10 inches (about 25 cm) to about 45 inches (about 114 cm). Preferably, for an adult size garment, the length L_3 should range from between about 20 inches (about 51 cm) to about 40 inches (about 102 cm). Most preferably, for an adult size garment, the length L_3 should range from between about 30 inches (about 76 cm) to about 35 inches (about 89 cm).

A ratio L_4/L_3 can be established which ranges from between about 0.1 to about 0.5. Preferably, the ratio L_4/L_3 ranges from between about 0.2 to about 0.5 and more preferably, the ratio L_4/L_3 ranges from between about 0.3 to about 0.4. By designing and manufacturing the absorbent article 10 to fit within the values established for the ratio L_4/L_3 , one can be confident that the absorbent article 10 will exhibit improved body fit and be less likely to leak body fluid.

Returning again to the first and second lateral sections 34 and 36, depicted in Fig. 1, it was mentioned that they have a length L_1 . Since the first and second lateral sections 34 and 36 are designed to mate with the back portion 14, it is advantageous to size the length L_1 to be approximately equal to the length L_2 . This will provide an aesthetically pleasing pant-like article 102. However, if one desires, the length L_1 could be sized to be less than, equal to or greater than the length L_2 .

Referring now to Fig. 8, the back portion 14 of the absorbent article 10 is depicted with the elastic 74 removed for clarity of discussion only. The back portion 14, as described above, has a first section 68 and a second section 70. The first section 68 has a length L_2 that is equal to or greater than about 2 inches (about 5 cm) and the second section 70 has a length L_4 that is equal to or greater than about 1 inch (about 2.5 cm). The second section 70 includes a first area A_1 and a second area A_2 . The first area A_1 is bounded by the second end 66, the line 72 drawn parallel to the first end 64, and the first and second side edges 80 and 82. In essence, the first area A_1 represents the total area of the second section 70. The second area A_2 is depicted as the cross hatched area bounded by first and second lines 116 and 118, the second end 66, and the line 72 drawn parallel to the first end 64. The first and second lines 116 and 118 are drawn perpendicular to the second end 66 at points 120 and 122 where the first and second side edges 80 and 82 intersect the second end 66. The first and second lines 116 and 118

extend vertically upward and intersect the line 72 at points 124 and 126, respectively. It has been found that if one divides the first area A_1 by the second area A_2 , a ratio A_1/A_2 is established. If this ratio A_1/A_2 is maintained within a certain limited range, one can manufacture a disposable absorbent article 10 that exhibits improved body fit in the buttocks region of the wearer. Such improved body fit reduces the likelihood of fluid leakage from occurring which is of utmost importance to a consumer of such products.

The first area A_1 should be equal to or greater than about 175 cm². Preferably, for an adult size garment, the first area A_1 ranges from between about 400 cm² to about 1500 cm². More preferably, for an adult size garment, the first area A_1 ranges from between about 500 cm² to about 1200 cm². Most preferably, for an adult size garment, the first area A_1 ranges from between about 800 cm² to about 1100 cm². The second area A_2 should be equal to or greater than about 50 cm². The ratio A_1/A_2 should range from between about 1.3 to about 3.5. Preferably, the ratio A_1/A_2 should range from between about 1.7 to about 2.5, and more preferably, the ratio A_1/A_2 should range from between about 2.0 to about 2.3.

It should be noted that the first and second lines 116 and 118 are aligned parallel to one another and are spaced apart a distance denoted as W_1 . W_1 represents the width of the second area A_2 . The width W_1 should be equal to or greater than about 4 inches (about 10 cm). Preferably, the width W_1 should range from between about 5 inches (about 13 cm) to about 15 inches (about 38 cm), and more preferably, the width W_1 should range from between about 8 inches (about 15 cm) to about 11 inches (about 28 cm). The dimension W_1 can vary depending upon the type and size of the absorbent article, as well as the age and physical size of the wearer that the absorbent article is designed to be worn by. If the absorbent article is sized to be worn by an infant, the dimension W_1 will be less than if the absorbent article is designed to be worn by a toddler or by an adult. The gender of the wearer can also affect the dimension W_1 .

Referring to Fig. 9, the back portion 14 and the crotch portion 16 of the absorbent article 10 are depicted with the elastic 74 removed from the back portion 14 for clarity of discussion only. The crotch portion 16 is joined at one end to the second end 66 of the back portion 14. The crotch portion 16 has first and second side edges 84 and 86 and first and second crotch elastics 88 and 90 positioned adjacent to the first and second side edges 84 and 86, respectively. The back portion 14 has a first section 68 and a second section 70. The first section 68 has a length L_1 that is equal to or greater than about 2 inches (about 5 cm) and the second section 70 has a length L_2 that is equal to or greater

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then about 1 inch (about 2.5 cm). The second section 70 includes a first area A_3 and a second area A_4 . The first area A_3 is bounded by the second end 68, the line 72 drawn parallel to the first end 64, and the first and second side edges 80 and 82. In essence, the first area A_3 represents the total area of the second section 70. The second area A_4 is depicted as the crosshatched area bounded by first and second lines 128 and 130, the second end 68, and the line 72 drawn parallel to the first end 64. The first and second lines 128 and 130 are drawn tangential to the first and second crotch elastics 88 and 90 at points 132 and 134 where the first and second crotch elastics 88 and 90 are spaced closest together. Another way of stating this is that the first and second lines 128 and 130, respectively, are aligned tangentially to the inner most elastic strand of each of the first and second crotch elastics 88 and 90. For a symmetrically shaped article 10, this will occur on the transverse central axis Y—Y.

The first and second lines 128 and 130 extend vertically upward toward the first end 64 and intersect both the second end 68 at points 136 and 138, and the line 72 drawn parallel to the first end 64 at points 140 and 142. The crosshatched area bounded by the points 136, 138, 140 and 142 represent the second area A_4 . It has been found that if one divides the first area A_3 by the second area A_4 , that a ratio A_3/A_4 is established. If this ratio A_3/A_4 is maintained within a certain limited range, one can manufacture an absorbent article that exhibits improved body fit in the buttocks region of the wearer. Such improved body fit reduces the likelihood of fluid leakage from occurring which is of utmost importance to a disposable absorbent article.

The first area A_3 should be equal to or greater than about 175 cm². Preferably, the first area A_3 should range from between about 400 cm² to about 1500 cm². More preferably, the first area A_3 should range from between about 500 cm² to about 1200 cm², and most preferably, the first area A_3 ranges from between about 600 cm² to about 1100 cm². The second area A_4 should be equal to or greater than about 35 cm². The ratio A_3/A_4 should range from between about 1.5 to about 5.0. Preferably, the ratio A_3/A_4 should range from between about 2.5 to about 4.0, and more preferably, the ratio A_3/A_4 should range from between about 3.0 to about 3.7.

It should be noted that the first and second lines 128 and 130 are aligned parallel to one another and are spaced apart a distance denoted as W_2 . W_2 represents the width of the second area A_4 . The width W_2 should be equal to or greater than about 2 inches (about 5 cm). Preferably, the width W_2 should range from between about 3 inches (about 8 cm) to about 7 inches (about 18 cm), and more preferably, the width W_2 should range

from between about 4 inches (about 10 cm) to about 6 inches (about 15 cm). The dimension W_2 can vary depending upon the type and size of absorbent article, as well as the age and physical size of the wearer that the absorbent article is designed to be worn by. If the absorbent article is sized to be worn by an infant, the dimension W_2 will be less than if the absorbent article is designed to be worn by a toddler or by an adult. The gender of the wearer can also affect the dimension W_2 .

While the invention has been described in conjunction with several specific embodiments, it is to be understood that many alternatives, modifications and variations will be apparent to those skilled in the art in light of the foregoing description. Accordingly, this invention is intended to embrace all such alternatives, modifications and variations that fall within the spirit and scope of the appended claims.

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claim:

1. An absorbent article comprising:

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- a) a front portion having a first end, a second end, a first side edge and a second side edge;
- b) first and second lateral sections releasably attached to said front portion, each of said first and second lateral sections having an outer edge;
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- c) a back portion having a first end, a second end and first and second side edges, said back portion being divided into a first section and a second section, said first section having a length L_1 measured perpendicularly from said first end of said back portion to a line drawn parallel thereto, said length L_1 being equal to or greater than about 2 inches, and said second section having a length L_2 measured perpendicularly from said second end to said line drawn parallel to said first end, said length L_2 being equal to or greater than about 1 inch, said second section having a first side edge and a second side edge and a first area A_1 and a second area A_2 , said first area A_1 representing an area bounded by said first and second side edges, said second end and said line drawn parallel to said first end, said second area A_2 representing an area bounded by first and second lines, said second end and said line drawn parallel to said first end, said first and second lines being drawn perpendicular to said second end at points where said first and second side edges intersect said second end, said first and second lines intersecting said line drawn parallel to said first end, and said second section having a ratio A_1/A_2 ranging from between about 1.3 to about 3.5;
- 15
- d) a crotch portion connecting said front portion to said back portion; and
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- e) an absorbent secured to at least one of said front, back or crotch portions, and each of said outer edges of said first and second lateral sections being secured to one of said first and second side edges of said back portion to form a pant-like article having a waist opening and a pair of leg openings.
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2. The absorbent article of claim 1 wherein said first and second lateral sections are elastic.

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3. The absorbent article of claim 1 wherein said first and second lateral sections overlay said front portion.
4. The absorbent article of claim 1 wherein each of said first and second lateral sections has an inner edge and said pair of inner edges are aligned in an abutting relationship.
5. The absorbent article of claim 4 wherein said pair of inner edges are joined together by breakable bonds.
6. The absorbent article of claim 5 wherein A_1 ranges from between about 400 cm² to about 1600 cm².
7. The absorbent article of claim 1 wherein said back portion includes elastic strands that extend from said first side edge to said second side edge.
8. The absorbent article of claim 1 wherein said length L_1 ranges from between about 4 inches to about 8 inches.
9. The absorbent article of claim 1 wherein said first and second lines are parallel to one another and the spacing between said first and second lines is greater than about 4 inches.
10. An absorbent article comprising:
 - a) a front portion having a first end, a second end, a first side edge and a second side edge;
 - b) first and second lateral sections releasably attached to said front portion, each of said first and second lateral sections having an outer edge;
 - c) a back portion having a first end, a second end and first and second side edges, said back portion being divided into a first section and a second section, said first section having a length L_2 measured perpendicularly from said first end of said back portion to a line drawn parallel thereto, said length L_2 being from between about 3 inches to about 7 inches, and said second section having a length L_3 measured perpendicularly from said

second end to said line drawn parallel to said first end, said length L_2 being equal to or greater than about 3 inches, said second section having a first side edge and a second side edge and a first area A_1 and a second area A_2 , said first area A_1 representing an area bounded by said first and second side edges, said second end and said line drawn parallel to said first end, said second area A_2 representing an area bounded by first and second lines, said second end and said line drawn parallel to said first end, said first and second lines being drawn perpendicular to said second end at points where said first and second side edges intersect said second end, said first and second lines intersecting said line drawn parallel to said first end, and said second section having a ratio A_1/A_2 ranging from between about 1.7 to about 2.5;

- d) a crotch portion connecting said front portion to said back portion;
- e) a liquid permeable liner secured to at least one of said front, back or crotch portions; and
- f) an absorbent positioned below said liner, and each of said outer edges of said first and second lateral sections being secured to one of said first and second side edges of said back portion to form a pant-like article having a waist opening and a pair of leg openings.

11. The absorbent article of claim 10 wherein said first and second lateral sections are elastic.
12. The absorbent article of claim 10 wherein said first and second lateral sections overlay said front portion.
13. The absorbent article of claim 10 wherein each of said first and second lateral sections has an inner edge and said pair of inner edges are aligned in an abutting relationship.
14. The absorbent article of claim 10 wherein said pair of inner edges are joined together by breakable bonds.
15. An absorbent article comprising:



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- a) a front portion having a first end, a second end, a first side edge and a second side edge;
 - b) first and second lateral sections releasably attached to said front portion, each of said first and second lateral sections having an outer edge;
 - c) a back portion having a first end, a second end and first and second side edges, said back portion being divided into a first section and a second section, said first section having a length L_2 measured perpendicularly from said first end of said back portion to a line drawn parallel thereto, said length L_2 being equal to or greater than about 3 inches, and said second section having a length L_3 measured perpendicularly from said second end to said line drawn parallel to said first end, said length L_3 being from between about 3 inches to about 7 inches, said second section having a first side edge and a second side edge and a first area A_1 and a second area A_2 , said first area A_1 representing an area bounded by said first and second side edges, said second end and said line drawn parallel to said first end, said first area A_1 being equal to or greater than about 175 cm², said second area A_2 representing an area bounded by first and second lines, said second end and said line drawn parallel to said first end, said first and second lines being drawn perpendicular to said second end at points where said first and second side edges intersect said second end, said first and second lines intersecting said line drawn parallel to said first end, and said second section having a ratio A_1/A_2 ranging from between about 2.0 to about 2.3;
 - d) a crotch portion connecting said front portion to said back portion;
 - e) a liquid permeable liner secured to at least one of said front, back or crotch portions; and
 - f) an absorbent positioned below said liner, and each of said outer edges of said first and second lateral sections being secured to one of said first and second side edges of said back portion to form a pant-like article having a waist opening and a pair of leg openings.

18. The absorbent article of claim 15 wherein said first and second lateral sections are releasably attached to said front portion by hook and loop fasteners.

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17. The absorbent article of claim 16 wherein said front portion contains said hook fasteners.
18. The absorbent article of claim 16 said front portion contains said loop fasteners.
19. The absorbent article of claim 15 wherein each of said first and second lateral sections has an inner edge and said pair of inner edges are aligned in an abutting relationship.
20. The absorbent article of claim 15 wherein said pair of inner edges are joined together by breakable bonds.

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ABSTRACT OF THE DISCLOSURE

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An absorbent article is disclosed having a refastenable mechanism. The absorbent article has a front portion, a back portion and a crotch portion. The crotch portion connects the front portion to the back portion. The front portion has a first end, a second end, a first side edge and a second side edge. First and second lateral sections are releasably attached to the front portion and each of the first and second lateral sections has an outer edge. The back portion has first and second side edges and first and second ends. The back portion is divided into a first section and a second section. The first section has a length L_1 measured perpendicularly from the first end of the back portion to a line drawn parallel thereto. The second section has a length L_2 measured perpendicularly from the second end of the back portion to the line drawn parallel to the first end whereby a ratio L_1/L_2 is established which ranges from between about 0.1 to about 2. The absorbent article further includes an absorbent secured to at least one of the front, back or crotch portions. Each of the outer edges of the first and second lateral sections of are secured to one of the first and second side edges of the back portion to form a pant-like article having a waist opening and a pair of leg openings.

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In the United States Patent and Trademark Office

Applicants: Sarah Jane Marie Freiburger et al. Docket No.: 16102
Serial No.: Unknown Group: Unknown
Filed: Herewith Examiner: Unknown
For: **ABSORBENT ARTICLE HAVING A REFASTENABLE MECHANISM**

--Express Mail-----EK563977343US

**Combined Declaration and Power of Attorney
Original U.S. Patent Application
Joint Inventors**

**ASSISTANT COMMISSIONER FOR PATENTS
Washington, D.C. 20231**

Sir:

As the below-named inventors, we hereby declare that:

Our respective residence addresses, post office addresses and citizenship designations are as stated below, next to our names.

We believe that we are the original, first and joint inventors of the subject matter which is claimed and for which a patent is sought in the patent application entitled:

ABSORBENT ARTICLE HAVING A REFASTENABLE MECHANISM

the specification of which is attached hereto.

We hereby state that each of us has reviewed and understands the contents of the above-identified specification, including the claims and any accompanying drawings as amended by any amendment specifically referred to in the oath or declaration.

We acknowledge our duty to disclose all information which is material to the patentability of this application as defined by 37, C.F.R. 1.56.

As the named inventors, we hereby appoint the following attorneys and/or agents to prosecute this application and transact all business in the U.S. Patent and Trademark Office connected herewith:

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Our representative may be reached at (920) 721-2455.

We hereby declare that:

1. All statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true; and
2. 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 Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of this application or any patent issued thereon.

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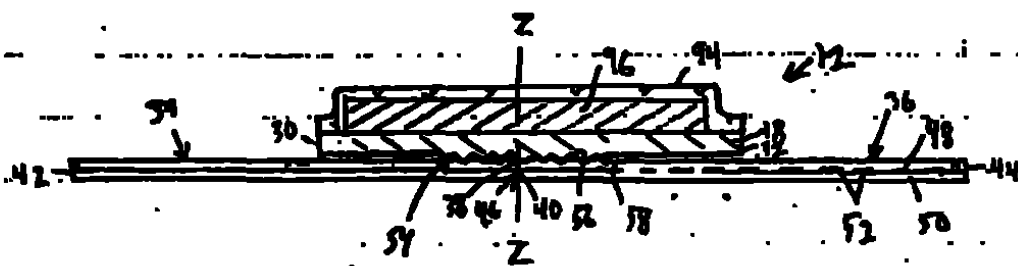
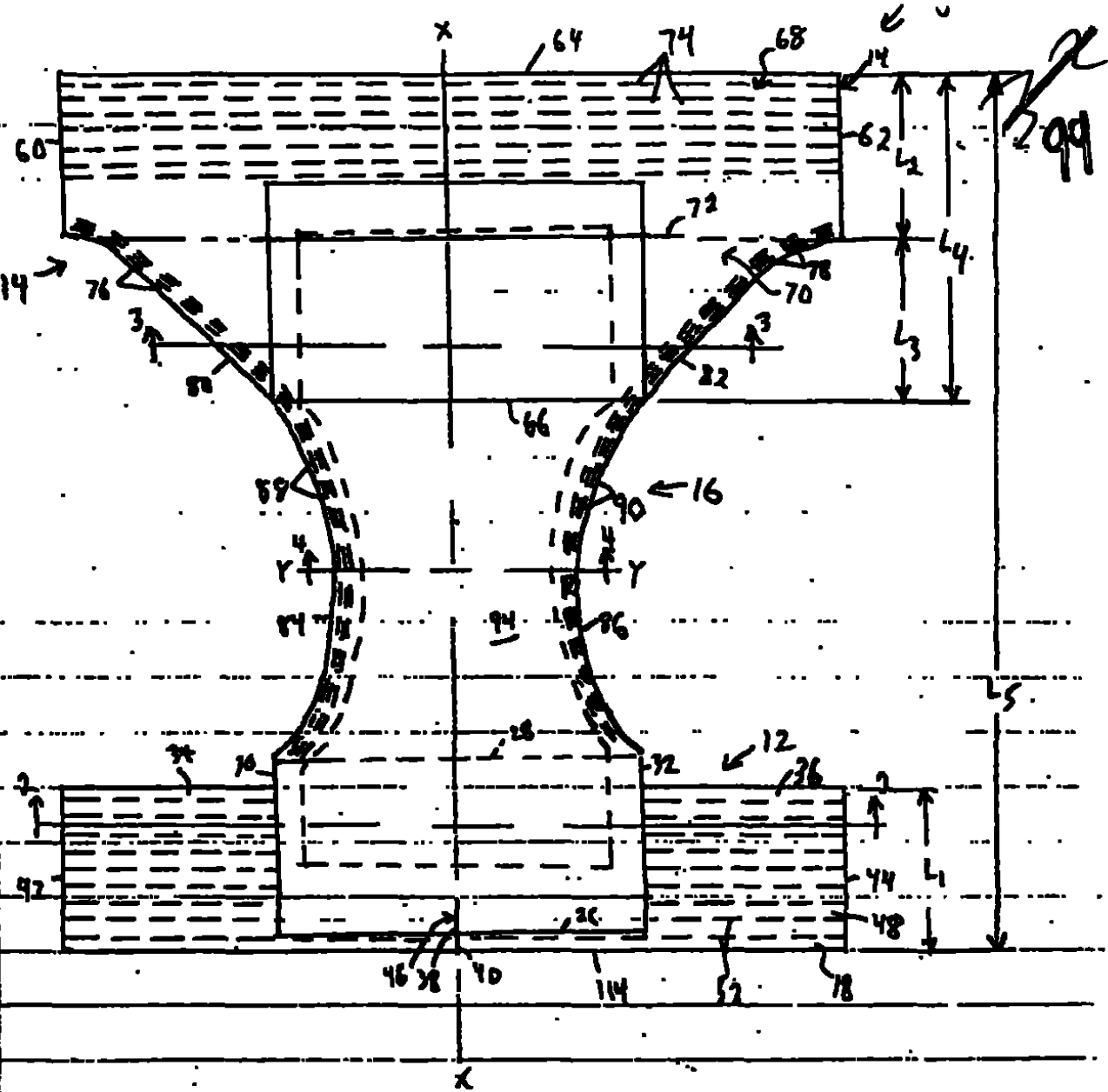
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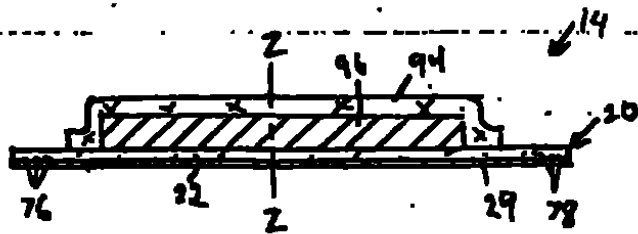


Fig. 3

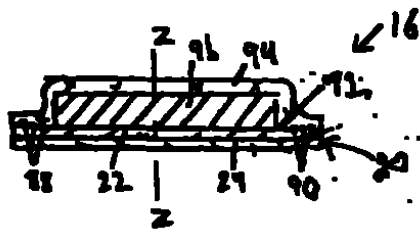


Fig. 4

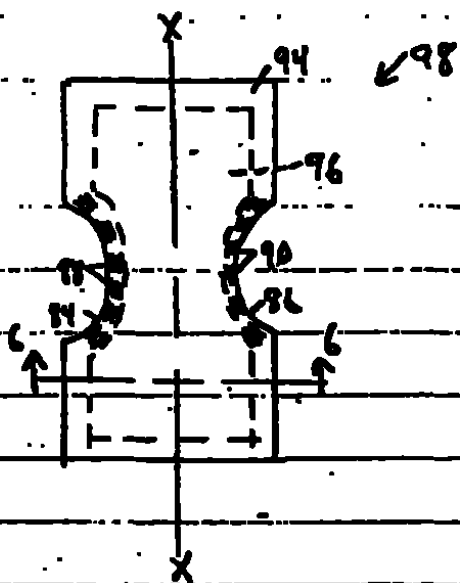


Fig. 5

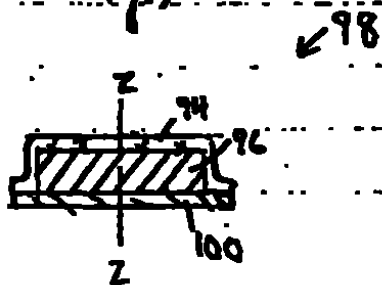


Fig. 6

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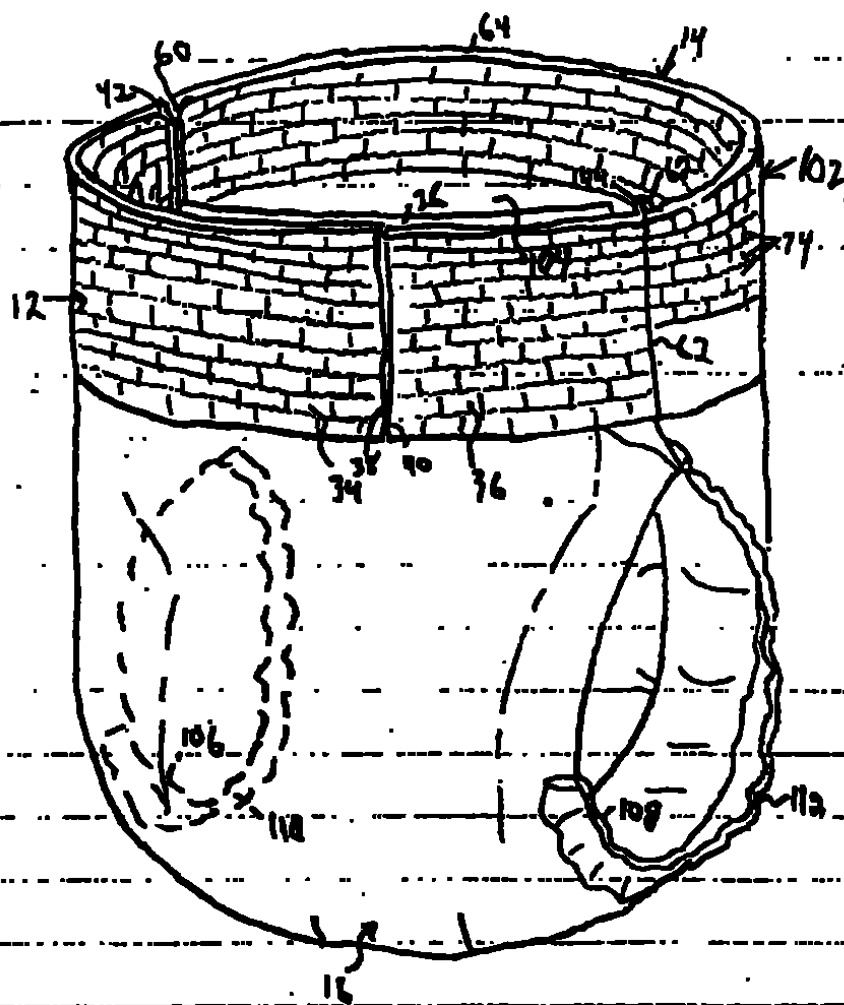


Fig. 7

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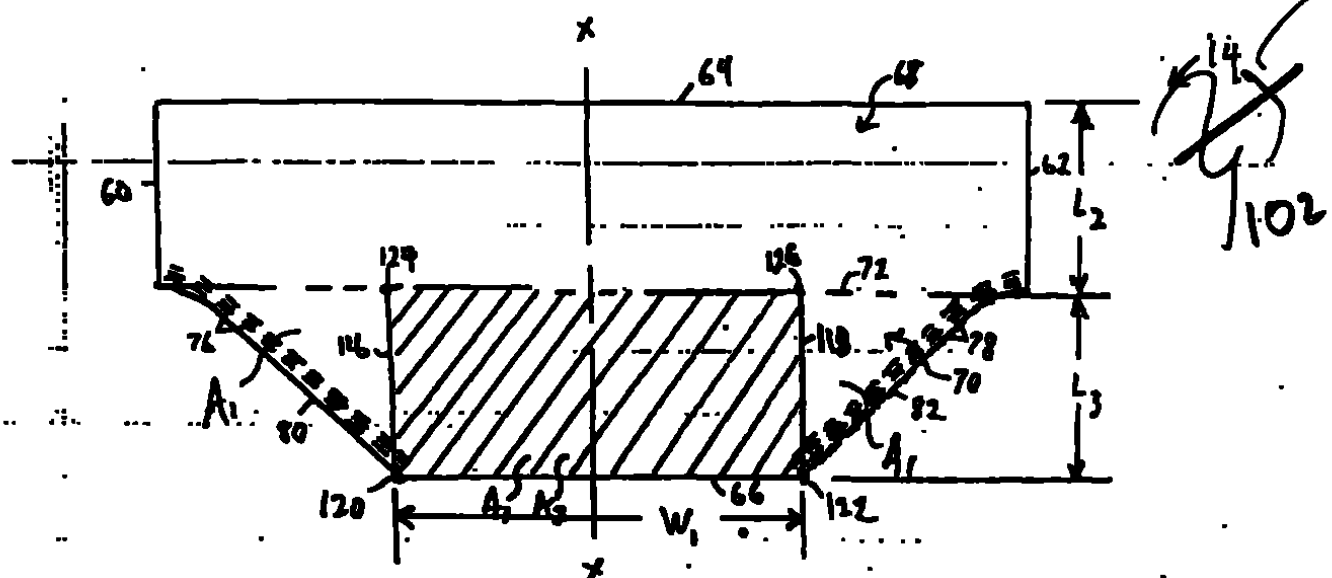


Fig. 8

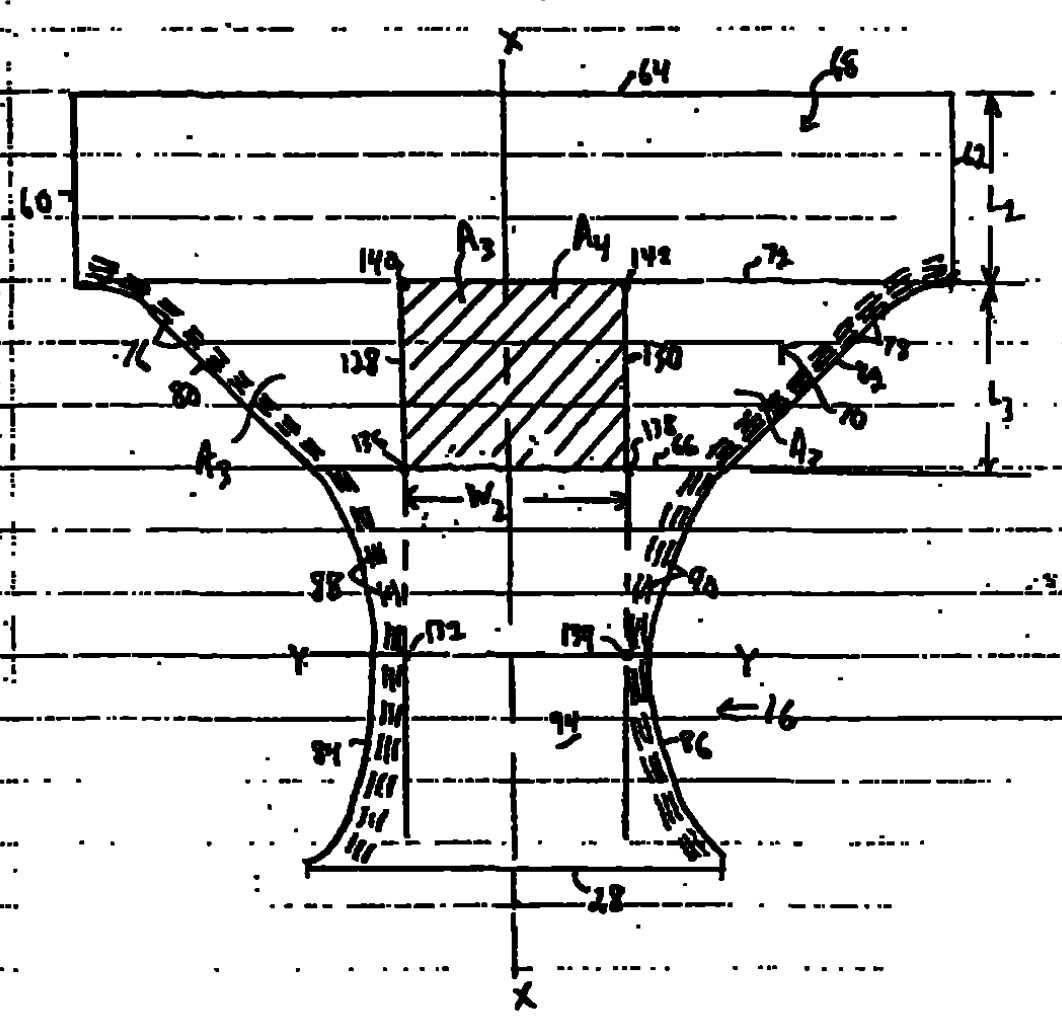


Fig. 9

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(TRADUCCION DEL INGLES AL ESPAÑOL)**Caso #16102****COLOMBIA****CERTIFICACION****ESTADO DE WISCONSIN****CONDADO DE WINNEBAGO**

Por medio del presente certifico que los papeles adjuntos constituyen una copia idéntica de la original de la Solicitud de Patente de los E.U. correspondiente a la Serie No. 09/637,428 para **ARTICULO ABSORBENTE QUE TIENE UN MECANISMO REAMARRABLE** presentada en Agosto 11 del año 2000, asignada a Kimberly-Clark Worldwide, Inc. y además certifico que Kimberly-Clark Worldwide, Inc. es una compañía organizada y existente bajo las leyes del Estado de Delaware, Estados Unidos de América.

Fecha este día 10 de Noviembre del año 2000, en Neenah, Wisconsin, Estados Unidos de América.

Melissa A. Blob (Firmado)**Melissa A. Blob, Notario Público****MI Comisión Expira: Agosto 1 del año 2004****SELLO NOTARIAL EN RELIEVE.**

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LOS ESTADOS UNIDOS DE AMERICA**A TODOS A QUIENES ESTAS PRESENTES LLEGAREN:****DEPARTAMENTO DE COMERCIO DE LOS ESTADOS UNIDOS****Oficina de Patentes y Marcas Comerciales de los Estados Unidos****Octubre 16 del año 2000**

ESTA ES PARA CERTIFICAR QUE ANEXA A LA PRESENTE ESTA UNA FIEL COPIA DE LOS REGISTROS DE LA OFICINA DE PATENTES Y MARCAS COMERCIALES DE LOS ESTADOS UNIDOS DE AQUELOS PAPELES DE LA SOLICITUD DE PATENTE ABAJO IDENTIFICADA QUE LOGRA LOS REQUERIMIENTOS PARA QUE LE SEA OTORGADA UNA FECHA DE PRESENTACIÓN BAJO 35 USC 111.

SOLICITUD NUMERO: 09/637,428

FECHA DE PRESENTACION: Agosto 11 del año 2000

Por Autorización del
**COMISIONADO DE PATENTES Y MARCAS
COMERCIALES**

H. L. Jackson (Firmado)

H. L. JACKSON

Funcionario de Certificaciones

SELLO EN RELIEVE.

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REIVINDICACIONES

Reivindicamos:

- 1 Un artículo absorbente comprende:**
 - a) una parte frontal que tiene un primero extremo, y un segundo extremo, un primer borde lateral y un segundo borde lateral;**
 - b) primera y segunda secciones laterales unidas soltablemente a dicha parte frontal, cada una de dichas primera y segunda secciones laterales tiene un borde exterior;**
 - c) una parte trasera tiene un primer extremo, un segundo extremo y primero y segundo bordes laterales, dicha**

parte trasera estando dividida en una primera sección y una segunda sección, dicha primera sección tiene una longitud L_2 medida perpendicularmente desde dicho primer extremo de dicha parte trasera hasta una línea dirigida paralela a ésta, dicha longitud L_2 siendo igual a o mayor de cerca de 2 pulgadas, y dicha segunda sección tiene una longitud L_3 medida perpendicularmente desde dicho segundo extremo hasta dicha línea dirigida paralela a dicho primer extremo, dicha longitud L_3 siendo igual a o mayor cerca de 1 pulgada, dicha segunda sección tiene un primer borde lateral y un segundo borde lateral y una primera área A_1 y una segunda área A_2 , dicha primera área A_1 representa un área limitada por dichos primero y segundo bordes laterales, dicho segundo extremo y dicha línea dirigida paralela a dicho primer extremo, dicha segunda área A_2 representa un área limitada por primera y segunda líneas, dicho segundo extremo y dicha línea dirigida paralela a dicho primer extremo, dichas primera y segunda líneas estando dirigidas perpendiculares a dicho segundo extremo en puntos en donde dichos primero y segundo bordes laterales interceptan dicho segundo extremo, dichas primera y segunda líneas interceptan dicha línea dirigida paralela a dicho primer extremo, y dicha segunda sección tiene un promedio A_3/A_4 en el rango desde entre cerca de 1.3 hasta cerca de 3.5;

- d) una parte de entrepierna que conecta dicha parte frontal a dicha parte trasera; y
- e) un absorbente asegurado a por lo menos una de dichas partes frontal, trasera o de entrepierna, y cada uno de dichos bordes de dichas primera y segunda secciones laterales estando asegurados a uno de dichos primero y segundo bordes laterales de dicha parte trasera para formar un artículo similar a pantalón que tiene una abertura de cintura y un par de abertura de pierna.

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2. El artículo absorbente de la reivindicación 1 en el cual dicha primera y segunda secciones laterales son elásticas.
3. El artículo absorbente de la reivindicación 1 en el cual dichas primera y segunda secciones laterales cubren dicha parte frontal.
4. El artículo absorbente de la reivindicación 3 en el cual cada una de dichas primera y segunda secciones laterales tiene un borde interior y dicho par de bordes interiores están alineados en una relación sobresaliente.
5. El artículo absorbente de la reivindicación 4 en el cual dicho par de bordes interiores están unidos juntos por uniones rompibles.
6. El artículo absorbente de la reivindicación 5 en el cual A_1 está en el rango de entre cerca de 400 cm^2 hasta cerca de 1600 cm^2 .
7. El artículo absorbente de la reivindicación 1 en el cual parte trasera incluye hebras elásticas que se extienden desde dicho primer borde lateral hasta dicho segundo borde lateral.
8. El artículo absorbente de la reivindicación 1 en el cual dicha longitud L_3 tiene el rango de entre cerca de 4 pulgadas hasta cerca de 8 pulgadas.
9. El artículo absorbente de la reivindicación 1 en el cual dichas primera y segunda líneas están paralelas una a otra y el espacio entre dicha primera y segunda líneas es mayor de cerca de 4 pulgadas.

10. Un artículo absorbente comprende:

- a) una parte frontal que tiene un primero extremo, y un segundo extremo, un primer borde lateral y un segundo borde lateral;
- b) primera y segunda secciones laterales unidas soltablemente a dicha parte frontal, cada una de dichas primera y segunda secciones laterales tiene un borde exterior;
- c) una parte trasera tiene un primer extremo, un segundo extremo y primero y segundo bordes laterales, dicha parte trasera estando dividida en una primera sección y una segunda sección, dicha primera sección tiene una longitud L_2 medida perpendicularmente desde dicho primer extremo de dicha parte trasera hasta una línea dirigida paralela a ésta, dicha longitud L_2 estando desde entre cerca de 3 pulgadas hasta cerca de 7 pulgadas, y dicha segunda sección tiene una longitud L_3 medida perpendicularmente desde dicho segundo extremo hasta dicha línea dirigida paralela a dicho primer extremo, dicha longitud L_3 siendo igual a o mayor que cerca de 3 pulgada, dicha segunda sección tiene un primer borde lateral y un segundo borde lateral y una primera área A_1 lateral y un segundo borde lateral y una primera área A_1 ,, y una segunda área A_2 , dicha primera área A_1 representa un área limitada por dichos primero y segundo bordes laterales, dicho segundo extremo y dicha línea dirigida paralela a dicho primer extremo, dicha segunda área A_2 representa un área limitada por primera y segunda líneas, dicho segundo extremo y dicha línea dirigida paralela a dicho primer extremo, dichas primera y segunda líneas estando dirigidas perpendiculares a dicho segundo extremo en puntos en donde dichos primer y segundo bordes laterales interceptan dicho segundo extremo, dichas primera y segunda líneas interceptan dicha línea dirigida paralela a dicho primer extremo, y dicha segunda sección tiene un promedio

A_3/A_4 en el rango desde entre cerca de 1.7 hasta cerca
 A_3/A_4 en el rango desde entre cerca de 1.7 hasta cerca
 de 2.5;

- d) una parte de entrepierna que conecta dicha parte frontal a dicha parte trasera;
 - e) un forro permeable al líquido asegurado a por lo menos una de dichas partes frontal, trasera o de entrepierna; y
 - f) un absorbente colocado debajo de dicho forro, y cada uno de dichos bordes exteriores de dichas primera y segunda secciones laterales estando asegurados a uno de dichos primero y segundo bordes laterales de dicha parte trasera para formar un artículo similar a pantalón que tiene una abertura de cintura y un par de aberturas de pierna.
11. El artículo absorbente de la reivindicación 10 en el cual dichas primera y segunda secciones laterales son elásticas.
 12. El artículo absorbente de la reivindicación 10 en el cual dicha primera y segunda secciones laterales cubren dicha parte frontal.
 13. El artículo absorbente de la reivindicación 10 en el cual cada una de dichas primera y segunda secciones laterales tiene un borde interior y dicho par de bordes interiores están alineados en una relación sobresaliente.
 14. El artículo absorbente de la reivindicación 10 en el cual dicho par de bordes interiores están unidos juntos por uniones rompibles.
 15. Un artículo absorbente comprende:
 - a) una parte frontal que tiene un primero extremo, y un segundo extremo, un primer borde lateral y un segundo borde lateral;

- b) primera y segunda secciones laterales unidas soltablemente a dicha parte frontal, cada una de dichas primera y segunda secciones laterales tiene un borde exterior;
- c) una parte trasera que tiene un primer extremo, un segundo extremo y primero y segundo bordes laterales, dicha parte trasera estando dividida en una primera sección y una segunda sección, dicha primera sección tiene una longitud L_2 medida perpendicularmente desde dicho primer extremo de dicha parte trasera hasta una línea dirigida paralela a ésta, dicha longitud L_2 siendo igual a o mayor de cerca de 3 pulgadas, y dicha segunda sección tiene una longitud L_3 medida perpendicularmente desde dicho segundo extremo hasta dicha línea dirigida paralela a dicho primer extremo, dicha longitud L_3 estando desde entre cerca de 3 pulgadas hasta cerca de 7 pulgadas, dicha segunda sección tiene un primer borde lateral y un segundo borde lateral y una primera área A_1 y una segunda área A_2 , dicha primera área A_1 representa un área limitada por dicho primero y segundo bordes laterales, dicho segundo extremo y dicha línea dirigida paralela a dicho primer extremo, dicha segunda área A_1 siendo igual a o mayor de cerca de 175 cm^2 , dicha segunda área A_2 representa un área limitada por primera y segunda líneas, dicho segundo extremo y dicha línea dirigida paralela a dicho primer extremo, dichas primera y segunda líneas estando dirigidas perpendiculares a dicho segundo extremo en puntos en donde dichos primer y segundo bordes laterales interceptan dicho segundo extremo, dichas primera y segunda líneas interceptan dicha línea dirigida paralela a dicho primer extremo, y dicha segunda sección tiene un promedio $\bar{A}_1/\bar{A}_2$ en el rango desde entre cerca de 2.0 hasta cerca de 2.3;

- d) una parte de entrepierna que conecta dicha parte frontal a dicha parte trasera;
- e) un forro permeable al líquidos asegurado a por lo menos una de dichas partes frontal, trasera o de entrepierna; y
- f) un absorbente colocado debajo de dicho forro, y cada uno de dichos bordes exteriores de dichas primera y segunda secciones laterales estando asegurados a uno de dichos primero y segundo bordes laterales de dicha parte trasera para formar un artículo similar a pantalón que tiene una abertura de cintura y un par de aberturas de pierna.

16. El artículo absorbente de la reivindicación 15 en el cual A₂ dichas primera y segunda secciones laterales están soltamente unidas a dicha parte frontal por sujetadores de gancho y lazo.

17. El artículo absorbente de la reivindicación 16 en el cual dicha parte frontal contiene dichos sujetadores de gancho.

18. El artículo absorbente de la reivindicación 16 dicha parte frontal contiene dichos sujetadores de lazo.

19. El artículo absorbente de la reivindicación 15 en el cual cada uno de dichas primera y segunda secciones laterales tiene un borde interior y dicho par de bordes interiores están alineados en una relación sobresaliente.

20. El artículo absorbente de la reivindicación 15 en el cual dicho par de bordes interiores están unidos juntos por uniones rompibles.

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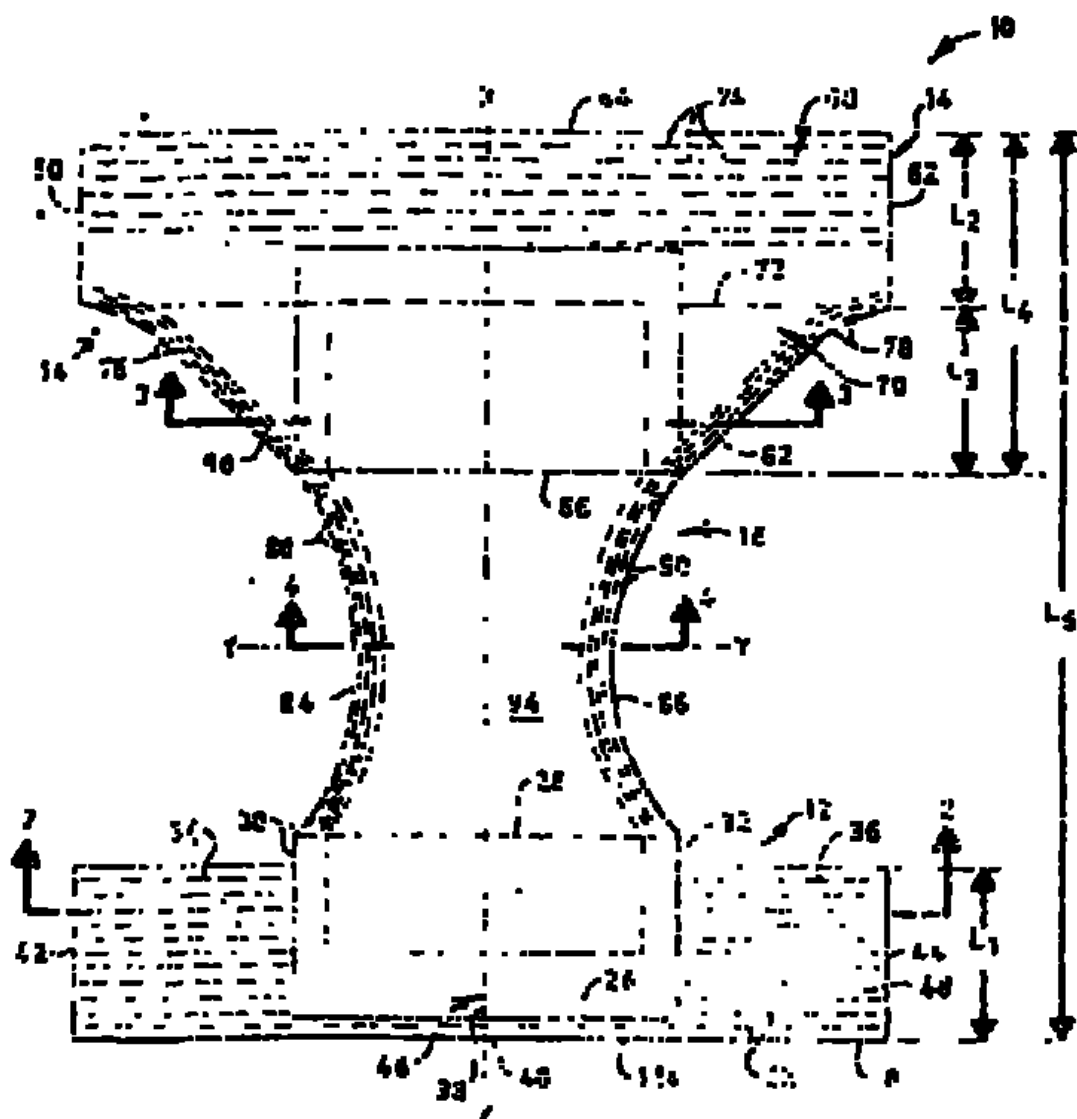


FIG. 1

RESUMEN DE LA REVELACIÓN

Un artículo absorbente está revelado que tiene un mecanismo reamarrable. El artículo absorbente tiene una parte frontal, una parte trasera y una parte de entrepierna. La parte de entrepierna conecta la parte frontal a la parte trasera. La parte frontal tiene un primer extremo, un segundo extremo, un primer borde lateral y un segundo borde lateral. La primera y segunda secciones laterales están soltablemente unidas a la parte frontal de cada uno de dichas primera y segunda secciones laterales que tienen un borde exterior. La parte trasera tiene primero y segundo bordes laterales y primero y segundo extremos. La parte trasera está dividida en una primera sección y una segunda sección. La primera sección tiene una longitud L_2 medida perpendicularmente desde el primer extremo de la parte trasera hasta una línea dirigida paralela a ésta. La segunda sección tiene una longitud L_3 medida perpendicularmente desde el segundo extremo de la parte trasera a la línea dirigida paralela al primer extremo por medio del cual un promedio L_2/L_3 es establecido el cual está en el rango de entre cerca de 0.1 hasta cerca de 2. El artículo absorbente además incluye un absorbente asegurado a por lo menos una de las partes frontal, trasera o de entrepierna. Cada uno de dichos bordes exteriores de las primera y segunda secciones laterales de están aseguradas a uno de los primero y segundo bordes laterales de la parte trasera para formar un artículo similar a pantalón que tiene una abertura de cintura y un par de aberturas de pierna.

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ES TRADUCCIÓN FIEL Y COMPLETA DE LOS DOCUMENT S
ADJUNTOS.

2do. EXAMEN DE FORMA PATENTE DE INVENCION

Folio 122

Radicación no 0093916

Concepto Técnico no 633

Clasificación Internacional de Patentes A 61 F 13/15

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

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

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

EXAMINADOR TÉCNICO

202042

Bogotá D. C., 4 ABR 02

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2020
Bogotá DC

Doctor
RAMIRO CASTRO DUQUE
Apoderado

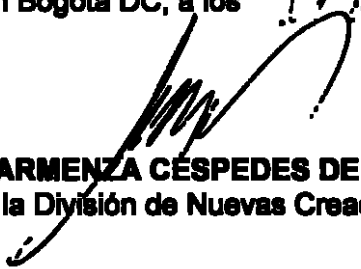
REFERENCIA:	Radicación No.	00-73418
	Trámite	002
	Evento	001
	Actuación	418
	Oficio No.	745
	Folios	001

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

No obstante lo anterior, no se tendrá en cuenta la prioridad reivindicada No. 09/637.428 del 11 de agosto del 2000, ya que no reivindicó prioridad según lo establecido en el folio 48.

Cúmplase

Dado en Bogotá DC, a los 17 de Julio de 2002


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

Bogotá, DC, 13-06-02 El extracto de esta solicitud fue publicado en el número 517 de la Gaceta de Propiedad Industrial, de fecha 27-06-02. El término hábil señalado por la ley expiró el 24-09-02 y SI ☐ NO ☒ se presentaron oposiciones por parte de terceros.

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