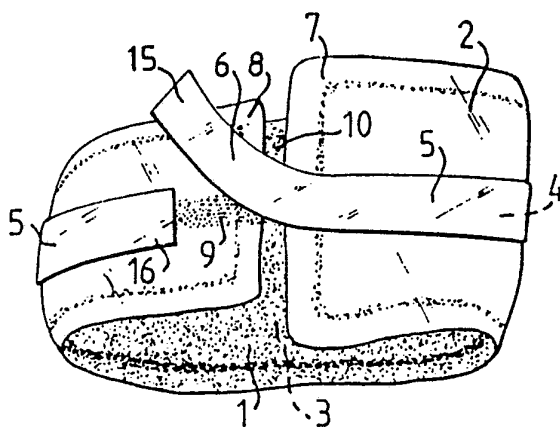




## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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(54) Title: INDIVIDUALLY PACKAGED ABSORBENT PRODUCTS



## (57) Abstract

The present invention relates to an individually packaged absorbent product, such as a sanitary towel, an incontinence protector or like product, which comprises a first, liquid permeable outer layer (1), which is intended to be turned to face the wearer, a second, liquid impermeable outer layer (2) which is intended to be turned to face away from the wearer, and an absorbent body (3) which is enclosed between said first and second outer layers (1, 2). The inventive product is characterized in that in the packaged state of the product the two end portions (7, 8) of the product are folded in towards one another with the liquid impermeable layer (2) turned outwards in a manner such that the edges of the end portions abut one another; in that the end portions (7, 8) are mutually held together by means of a strip of material (6, 13) which bridges the join (10) between the end portions (7, 8) and is secured to the portions (7, 8) on both sides of the join (10), whereby the product, prior to being used, forms itself a package and the liquid impermeable layer (2) forms a protective envelope for the liquid permeable layer (1) and the absorbent body (3); and in that the package can be opened, by loosening the strip (6, 13) or by dividing the strip in two.

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Individually packaged absorbent products

The present invention relates to an individually packaged absorbent product, such as a sanitary towel, an incontinence protector or like product, which product includes a first, liquid permeable outer layer which when the product is worn is intended to face the wearer, a second, liquid impermeable outer layer which when the product is worn is intended to face away from the wearer, and an absorbent body or pad which is enclosed between the first and second layers.

Hitherto, articles of hygiene, such as sanitary towels, have normally been packaged in packs containing a plurality of such articles. In more recent times, however, there has been a progressive trend towards packaging each item separately in individual packs. This enables a user to carry one or more such articles on or about his/her person in a practical and hygienic fashion, for instance in a handbag. Thus, such individually packaged articles afford important advantages on the part of the user. However, large quantities of packaging material are consumed when packaging such articles individually, which increases manufacturing costs and thereby necessitates a relatively high retail price.

The present invention provides an individually packaged article of hygiene which is both simple and inexpensive to produce.

A package produced in accordance with the invention is primarily characterized in that in the packaged state of the article both end portions of the article are folded in

towards one another with the liquid impermeable layer facing outwards such that the edges of the end portions abut one another; and in that said end portions are mutually connected by a strip of material which bridges the join or region of abutment between the end portions and is secured thereto on respective sides of the join, whereby the unused article constitutes a package in itself and the liquid impermeable layer forms a protective envelope for the liquid permeable layer and the absorbent body, and the join between said end portions can be broken by loosening or dividing the strip in two.

In the case of a preferred embodiment, the liquid impermeable layer is provided with a coating of pressure-responsive adhesive, which is preferably applied in the form of at least one length or string and which functions to secure the article to the leg underwear of the user, and the strip is secured to the adhesive coating at the end portions of the article.

In the case of another embodiment, the adhesive coating is covered with a protective foil strip which has been treated with a release agent and which shall be removed prior to using the article, said foil also forming the holding strip which joins together the two end portions of the article in its packaged state.

By using the liquid impermeable layer of the article as a protective covering, the article can be packaged in an individual pack form with the minimum consumption of packaging material.

An article of hygiene constructed in accordance with the invention will now be described in more detail with reference to an exemplifying embodiment thereof illustrated in the accompanying drawings, in which

Fig. 1 illustrates an extended sanitary towel constructed in accordance with the invention; and  
Fig. 2 illustrates the same sanitary towel when folded;  
Fig. 3 illustrates a folded sanitary towel constructed in accordance with a second embodiment; and  
Figs. 4 and 5 illustrate two different ways of opening a package formed with an article constructed in accordance with the invention.

The sanitary towel illustrated in Figs. 1 and 2 includes a first layer 1 of liquid permeable material, such as non-woven fabric, a second layer 2 of liquid impermeable material, such as plastic, and an absorbent body or pad 3, e.g. made of cellulose fluff, enclosed between the first and second layers 1, 2.

The liquid permeable layer 2 is attached to the outside of the towel, this layer facing away from the wearer when the towel is in use and thus forming the underside of the towel. Applied along the full length of the towel is a string 4 of pressure-responsive adhesive, e.g. melt glue, which functions to hold the towel firmly in position on the panties or knickers of the wearer.

The adhesive coating is covered by a protective strip 5 coated with a release agent, until the towel is to be used. This strip is slightly displaced axially in relation to the towel, so that a part 6 of the strip 5 projects beyond one end 7 of the towel. That region 9 of the other end 8 of the towel which lies closest to the edge of said end is left free of adhesive.

In its packaged state, the towel is folded with the two end parts 7,8 folded in towards one another and with the liquid impermeable layer 2 turned outwards, as illustrated in Fig. 2. The strip part 6 projecting beyond said one end

7 of the towel therewith bridges the join or abutment line 10 between the end portions 7,8 and is secured to the adhesive-free region 9 of the other end 8 of the towel. The towel is thus secured in its folded state and itself forms a compact "package". Soiling of the liquid permeable layer 1 and the absorbent body 3 is prevented by the liquid impermeable layer 2, e.g. when the towel is carried in a handbag prior to use.

In the case of the illustrated embodiment, both enveloping layers 1, 2 of the towel are mutually joined around the absorbent body 3, either by gluing or by heat welding processes. The liquid impermeable layer 2 will therewith only cover the underside of the absorbent body 3. In the case of an alternative embodiment, not shown, the liquid impermeable layer 2 is folded up over the long sides of the towel and is optionally also caused to cover the edge parts of the upper side of the towel, i.e. the side of the towel which faces towards the wearer. In the case of this embodiment, the liquid permeable layer is suitably attached to form a bag-like casing which encloses both the absorbent body and the liquid impermeable layer. When the towel is folded in accordance with the invention, all of the outwardly facing surfaces of the absorbent body will be protected by the liquid impermeable layer.

In the case of the Fig. 3 embodiment, the protective strip 5 coated with release agent is somewhat shorter than the towel itself. The pressure-sensitive glue string 4, however, extends along the whole length of the towel, therewith leaving an uncovered region of adhesive 11, 12 at respective ends 7,8 of the towel. These regions of adhesive 11, 12 are utilized to hold the towel folded, by serving as attachment means for a strip of material 13 which bridges the join 10 between the ends 7,8 of the towel. This strip 13 is only intended to hold the ends 7,8

of the towel together in its folded state and need not necessarily be treated with a release agent. When the towel is to be used, the towel ends 7,8 are separated, simply by tearing the holding strip 13 in two, as illustrated in Fig. 4.

In the case of the embodiment illustrated in Figs. 1 and 2, the outwardly extending part 6 of the strip 5 is preferably treated with a release agent, similarly to the strip 5 in general. The towel ends 7,8 can then be separated by loosening the outwardly extending strip part 6 from the adhesive coating 9, which is simplest to effect when the strip 5 is slightly longer than the towel, as illustrated in Fig. 5, so as to form a freely projecting grip flap 14 at the point where the ends 15, 16 of the protective strip meet.

The invention shall not be considered to be restricted to the described examples thereof, since various modifications are conceivable within the scope of the following claims.

CLAIMS

1. An individually packaged absorbent product, such as a sanitary towel, an incontinence protector or like product, which comprises a first, liquid permeable outer layer (1), which is intended to be turned to face towards the wearer, a second, liquid impermeable outer layer (2) which is intended to be turned to face away from the wearer, and an absorbent body (3) which is enclosed between said first and second outer layers (1,2), characterized in that in the packaged state of the product the two end portions (7,8) of the product are folded in towards one another with the liquid impermeable layer (2) turned outwards in a manner such that the edges of said end portions abut one another; in that said end portions (7,8) are mutually joined by means of a strip of material (6,13) which bridges the join (10) between the end portions (7,8) and is secured to said portions on both sides of said join (10), whereby the product, prior to being used forms itself a package and the liquid impermeable layer (2) forms a protective envelope for the liquid permeable layer (1) and the absorbent body (3); and in that the join between the end portions can be broken, by loosening the strip (6,13) or by dividing the strip in two.

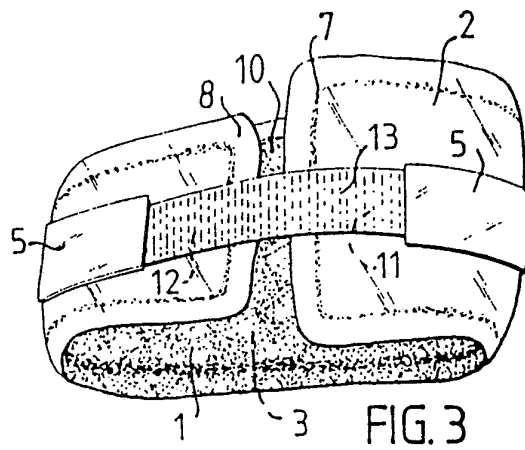
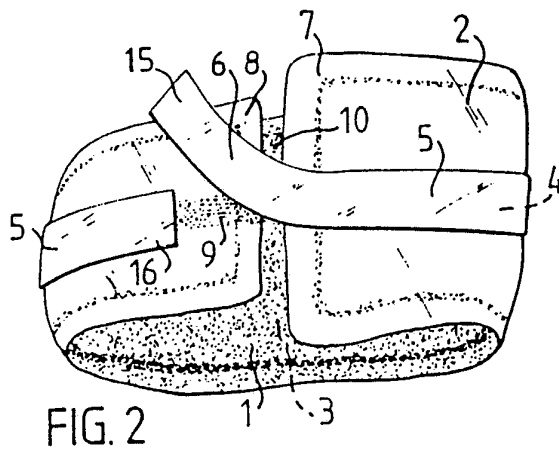
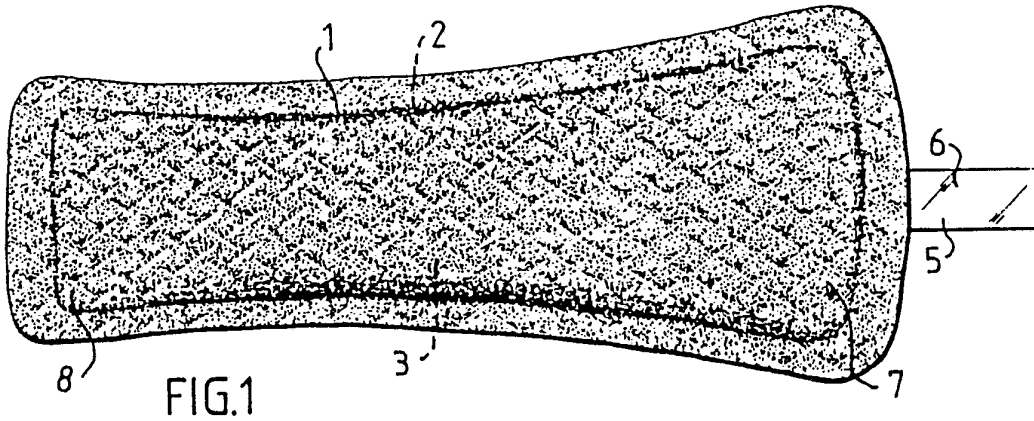
2. A product according to Claim 1, characterized in that the liquid impermeable layer (2) has a coating of pressure-responsive adhesive which is preferably applied in at least one adhesive length or string (4) and which functions to secure the product to the leg underwear of the user; and in that the strip (6,13) is attached to the adhesive coating (4) at the end portions (7,8) of the product.



3. A product according to Claim 2, characterized in that prior to using the product the adhesive coating (4) is covered by a protective foil (5) which has been treated with a release agent and which also forms the strip (13) for holding the two ends (7,8) of the product together.

4. A product according to Claim 3, with which the adhesive coating (4) extends along the whole length of said product and with a protective foil strip (5) which has the same length as the product, characterized in that the protective foil strip is slightly displaced axially in relation to the product so that a part (6) extends beyond one end edge (7) of the product; and in that in the packaged state of the product said foil strip part (6) forms the strip (6,13) which holds the respective end portions of the product together.

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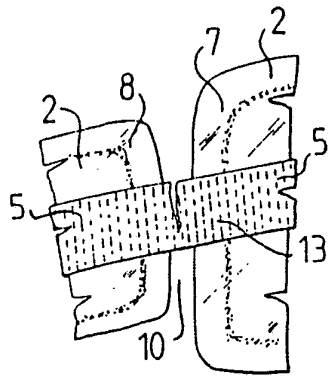


FIG. 4

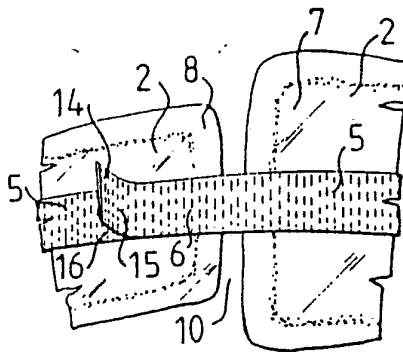


FIG. 5

# INTERNATIONAL SEARCH REPORT

International Application No PCT/SE88/00504

<b>I. CLASSIFICATION OF SUBJECT MATTER</b> (if several classification symbols apply, indicate all) <sup>6</sup>		
According to International Patent Classification (IPC) or to both National Classification and IPC <sup>4</sup>		
A 61 F 13/16, B 65 D 85/16		
<b>II. FIELDS SEARCHED</b>		
Minimum Documentation Searched <sup>7</sup>		
<b>Classification System</b>	<b>Classification Symbols</b>	
IPC 4	A 61 F; A 41 B; B 65 D	
Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched <sup>8</sup>		
SE, NO, DK, FI classes as above.		
<b>III. DOCUMENTS CONSIDERED TO BE RELEVANT <sup>9</sup></b>		
<b>Category <sup>10</sup></b>	<b>Citation of Document, <sup>11</sup> with indication, where appropriate, of the relevant passages <sup>12</sup></b>	<b>Relevant to Claim No. <sup>13</sup></b>
X	US, A, 3 963 029 (W.V.H. BROOKS) 15 June 1976	1
X	DE, C2, 2 450 699 (COLGATE-PALMOLIVE CO) 29 March 1984 & BE, 821629 US, 3869761 NL, 7414145 FR, 2248797 CH, 579356 GB, 1481238 AU, 497000 JP, 50072747 SE, 400700	1
A	US, A, 4 556 146 (J.L. SWANSON) 3 December 1985 & GB, 2153779	2-4
A	US, A, 3 973 567 (S. SRINIVASAN et al) 10 August 1971 & DE, 2622109	1
.../...		
<p><sup>10</sup> Special categories of cited documents:</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> <p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.</p> <p>"&amp;" document member of the same patent family</p>		
<b>IV. CERTIFICATION</b>		
Date of the Actual Completion of the International Search	Date of Mailing of this International Search Report	
1988-11-10	1988-12-21	
International Searching Authority	Signature of Authorized Officer	
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III. DOCUMENTS CONSIDERED TO BE RELEVANT (CONTINUED FROM THE SECOND SHEET)		
Category *	Citation of Document, with indication, where appropriate, of the relevant passages	Relevant to Claim No
	CA, 1043503 AU, 499603	
A	US, A, 4 380 450 (J.W. REICH) 19 April 1983	2-4
A	US, A, 4 551 145 (L.L. RYAN) 5 November 1985 & WO, 85/05266 EP, 0180627	2-4