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D E C I S I O N
of 26 May 1998

Case Number: T 0341/93 - 3.2.2

Application Number: 86112379.2

Publication Number: 0213642

IPC: A61F 13/15

Language of the proceedings: EN

Title of invention:

Form-fitting self-adjusting disposable garment

Patentee:

Kimberly-Clark Corporation

Opponent:

Paul Hartmann Aktiengesellschaft
The Procter & Gamble Company

Headword:

-

Relevant legal provisions:

EPC Art. 56, 84, 123

Keyword:

"Inventive step - (yes) after amendment"

Decisions cited:

-

Catchword:

-



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Boards of Appeal

Chambres de recours

Case Number: T 0341/93 - 3.2.2

D E C I S I O N
of the Technical Board of Appeal 3.2.2
of 26 May 1998

Appellant: Kimberly-Clark Corporation
(Proprietor of the patent) 401 North Lake Street
Neenah
Wisconsin 54956-0349 (US)

Representative: Diehl, Hermann O. Th., Dr.
Diehl, Glaeser, Hiltl & Partner
Patentanwälte
Postfach 19 03 65
80603 München (DE)

Respondent: Paul Hartmann Aktiengesellschaft
(Opponent 01) Paul-Hartmann-Strasse
89522 Heidenheim (DE)

Representative: Becker, Maria, Dipl.-Phys.
Postfach 10 37 62
70032 Stuttgart (DE)

Respondent: The Procter & Gamble Company
(Opponent 02) One Procter & Gamble Plaza
Cincinnati, Ohio 45202 (US)

Representative: Lawrence, Peter Robin Broughton
Gill Jennings & Every
Broadgate House
7 Eldon Street
London EC2M 7LH (GB)

Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 11 February 1993
revoking European patent No. 0 213 642 pursuant
to Article 102(1) EPC.

Composition of the Board:

Chairman: H. Seidenschwarz
Members: M. Bidet
J.-C. De Preter

Summary of Facts and Submissions

- I. On 9 April 1993 the appellant (patentee) lodged an appeal against the decision of the Opposition Division revoking patent No. 0 213 642 and paid the fee for appeal on the same day. The statement setting out the grounds of appeal including a set of new claims 1 to 38 was received on 21 June 1993.
- II. The Opposition Division held that the subject-matter of the independent claims according to the main request and the four auxiliary requests did not involve an inventive step (Article 56 EPC) with respect to the teachings derivable from documents US-A-3 757 785 (D1) and US-A-4 166 464 (D8).
- III. In response to communications from the Board, the appellant filed two sets of claims 1 to 37 (Annex A) and 1 to 36 (Annex B) as main and auxiliary requests.
- IV. Oral proceedings were held on 31 March 1998.
- (i) During the oral proceedings
- new claims 1 to 34 on the basis of the former auxiliary request (Annex B) and new pages 3 and 3a of the description were filed, and
 - respondents 01 and 02 (opponents 01 and 02) referred - in addition to document D8 - to the documents US-A-4 500 316 (D4) and US-A-4 050 462 (D7), both cited in the opposition proceedings and to document US-A-4 355 425 (D11), cited by respondent 02 in response to the new claims filed with the statement of grounds.

(ii) The appellant requested that the decision under appeal be set aside and that the patent be maintained

- on the basis of claims 1 to 34 and pages 3 and 3a of the description filed during the oral proceedings, and of pages 2, 4 to 17 of the description of the patent as granted (main request),
- or on the basis of at least one of the independent claims 1 to 3 and claims 4 to 34 filed during the oral proceedings with an adapted description (auxiliary request).

The respondents requested that the appeal be dismissed. The respondent 02 auxiliarily requested that the case be remitted to the first instance for the description to be adapted if the patent was maintained with any one of the independent claims.

(iii) The independent claims 1, 2 and 3 read as follows:

"1. An anatomically form-fitting, generally self-adjusting disposable garment (10) comprising:

an air permeable outer cover (20) resiliently-stretchable in at least one direction;

absorbent means, disposed within said outer cover, for absorbing and containing body fluids and other exudates;

said absorbent means comprising:

an independent absorbent structure (22)
including

a liquid permeable resiliently-stretchable
bodyside liner (42);

a liquid impermeable barrier (44) secured to
said liner (42);

an absorbent composite (38) disposed between
said barrier (44) and said liner (42);

wherein said liquid-permeable bodyside liner is
integrally retained within the outer cover, so
as to cause the absorbent structure to assume a
cupped shape, about the body of a wearer, when
the garment is worn,

said absorbent structure being obtainable by a
process comprising the step of securing said
liquid impermeable barrier to said liner (42)
while said liner is in a stretched condition,
and

attachment means for integrally disposing said
absorbent means within said resiliently-
stretchable outer cover (20) whereby the
stretchability of said resiliently-stretchable
outer cover (20) is uninhibited."

"2. An anatomically form-fitting, generally
self-adjusting disposable diaper (10)
comprising:

an air permeable outer cover (20) resiliently-
stretchable in at least one direction;

absorbent means, disposed within said outer cover, for absorbing and containing body fluids and other exudates; said absorbent means comprising:

an independent absorbent structure (22) including:

a liquid permeable bodyside liner (42);

a liquid impermeable barrier (44) secured to said liner (42) and

an absorbent composite (38) disposed between said barrier (44) and said liner (42); and

attachment means for integrally disposing said absorbent means within said resiliently-stretchable outer cover (20) whereby the stretchability of said resiliently-stretchable outer cover (20) is uninhibited, said attachment means comprising pockets formed by

waist flaps (26,28) folded over the ends of the absorbent structure (22), said pockets (29,31) maintaining said absorbent structure (22) disposed within said outer cover (20), wherein there are no direct bonds holding the ends of said absorbent structure to the outer cover or the waist flaps."

"3. An anatomically form-fitting, generally self-adjusting disposable garment (10) comprising:

an air permeable outer cover (20) resiliently-stretchable in at least one direction;

absorbent means, disposed within said outer cover, for absorbing and containing body fluids and other exudates; said absorbent means comprising:

an absorbent structure (22) fully integrated within the outer cover including:

a liquid permeable bodyside liner (42);

a liquid impermeable barrier (44);

an absorbent composite (38) disposed between said barrier (44) and said liner (42);

said garment being obtainable by a process comprising bonding said liquid permeable bodyside liner to said outer cover (20) outside of the periphery of the absorbent composite (38) while said outer cover is in a stretched condition, such that, after relaxation of the outer cover, the bodyside liner (42) is drawn under the absorbent structure (22) by the outer cover to provide attachment means for integrally disposing said absorbent means within said resiliently-stretchable outer cover (20) whereby the stretchability of said resiliently-stretchable outer cover (20) is uninhibited."

(iv) The arguments of the parties can be summarised as follows:

Appellant:

Independent claims 1 to 3 met the requirements according to Articles 123(2) and (3) EPC, since all claims 1 to 3 recited every feature of claim 1 as granted and were completed by

features of dependent claims and by features cited in the description of the patent as granted.

The feature concerning attachment means disposed within the outer cover, was cited in claim 1 of the patent as granted and was not objected to with respect to Article 84 EPC in the notices of opposition. In any case, the meaning of this feature was sufficiently clear when interpreted in the context of the description of the patent in suit and of the drawings, more particularly in Figures 2 to 9 and 27. Also the "ends" of the absorbent structure according to claim 2 may not be objectionable on the ground of lack of clarity, since they are clearly the parts of the absorbent structure on which the waist flaps are folded over according to Figures 2 and 4.

The process step added in claim 1 according to which the bodyside liner was secured to the barrier layer while the bodyside liner was in a stretched condition resulted in unique structural properties like the cupped shape disclosed in Figure 27. A similar process step was added in claim 3 with the result that the bodyside liner was drawn under the absorbent means under release of the stretched outer cover. Such a formulation was therefore clear and allowable.

In view of documents D1, D8, D11 as well as the less relevant documents D4 and D7, there was no disclosure of the provision of an anatomically form-fitting, generally self-adjusting disposable garment having absorbent means disposed within an air permeable outer cover in which the absorbent means comprised an absorbent

composite disposed between a liquid permeable bodyside liner and a liquid impermeable barrier as specified in claim 1. The structure described in document D1, in which the porous sheet 18 of the absorbent means was disposed on the impermeable outer cover could not be interchanged even if one wanted to do so, since the porous sheet was an integral part of the absorbent airlaid pad. The combination impermeable barrier layer and air permeable outer cover as claimed in the patent in suit had to be considered to involve an inventive step over the structure according to document D1. Document D11 further failed to deprive the subject-matter of claim 1 of inventive step since all superimposed elements in the crotch area of the known garment were bonded in unstretched condition. It was therefore not possible in the structure according to document D11 to obtain a cupped shape or an attachment means for the absorbent means within the outer cover by the combined effect of one stretchable element - bodyside liner or outer cover - being secured to the other element - outer cover or bodyside liner - while the stretchable element was in stretched condition.

The attachment means for the absorbent means according to the pocket means as defined in claim 2 was neither known nor suggested by Figure 9 of document D8 nor by the diaper disclosed in document D1 in its Figure 3.

The teaching of documents D4 and D7 disclosing the use of elastic members applied on the longitudinal part of the garment or of the disposable diaper, was of less relevance than the above cited documents.

Therefore, the subject-matter of the independent claims 1 to 3 did involve an inventive step.

Respondents:

The words "within" and "ends", as well as the "uninhibition" of the stretchability of the outer cover, were not clearly defined. Use of a process step for limitation of a product claim was only possible in limited cases which did not apply in the present case, so that claims 1 and 3 were not allowable.

Document D11 disclosed the use of an independent absorbent structure of the type mentioned in claim 1 which was immediately usable by the skilled person knowing the teaching of document D8 according to the structure represented in Figure 9 which disclosed a cupped shape. It was also general knowledge to use elastic members to obtain a cupped shape of garments as it was known from documents D4 and D7. The state of the art disclosed each branch of the problems cited in the patent in suit. In particular, the form-fitting and the good appearance, slim and trim and avoidance of a gap on waist, were dealt with in document D8 and the width of the crotch was dealt with in document D7. Therefore, there was no problem which had not been solved by the invention.

The subject-matter of claims 1 to 3 lacked inventive step with respect to the disclosure of document D11 combined with the teaching of document D8 as regards the provision of a cupped shape, the drawing of the bodyside liner under absorbent means and the provision of kinds of pockets.

- (v) After deliberation, the Chairman of the Board closed the discussion and announced that the decision would be issued in writing.

Reasons for the Decision

1. The appeal is admissible.
2. *Amendments*

The new independent claims 1, 2 and 3 are based on the claims 1, 2, 3, 14 and 15, the description (page 3, lines 41 to 43, 50 to 52; page 5, lines 21 to 23, 42 to 45; page 5, line 52 to page 6, line 14) and the Figures 7 and 9 of the patent as granted.

The claims 4 to 36 correspond to granted claims 2 to 34.

Therefore the requirements of Article 123 EPC are met.

3. *Clarity*
 - 3.1 The features relating to the "absorbent means disposed within the outer cover" and the "attachment means for integrally disposing the absorbent means within resilient-stretchable outer cover whereby the stretchability of the outer cover is uninhibited" are clearly mentioned in the description of the patent in suit (see page 5, lines 7, 33 and 34) as meaning that the absorbent structure is disposed "on" or "upon" the outer cover, which also infers that it is "within" the outer cover when the garment is worn.

3.2 The claimed structure according to claims 1 and 3 includes a process step, ie that the absorbent structure is obtainable by securing the liquid impermeable barrier to the liquid permeable resiliently-stretchable bodyside liner, while the liner is in a stretched condition. Since the description disclosing the claimed structure recites this process step for defining the obtention of a desired shape and sets out the result of this step on the absorbent structure, namely that the bodyside liner causes the absorbent structure to assume a cupped profile (see page 5, lines 21 to 35), it is immediately clear that this step infers that the cupped shape of the absorbent structure is due to the release of the prestretched bodyside liner and relates therefore to a structural feature. Therefore, there is no lack of clarity in the above formulation.

3.3 As regards the objection that the "ends" of the absorbent structure according to claim 2 (last feature) is unclear since there is no mention of its limits, attention is drawn to the description of the patent in suit. According to this description in combination with the Figures 2 and 4 for example (see page 3, lines 44 to 47; page 5, lines 6 to 10, 36 and 37), it is clear that both ends of the absorbent structure are disposed within pockets formed by both ends of the outer cover in order to permit floating of the absorbent cover on the front waist flap as well as on the back waist flap of the outer cover.

3.4 The claims 1 to 3 therefore fulfil the requirements of Article 84 EPC.

4. *State of the art*

4.1 Document D11 discloses an anatomically form-fitting, generally self-adjusting disposable garment comprising:

an air permeable outer cover (10) resiliently-stretchable in at least one direction; absorbent means (20) disposed within the outer cover and comprising an independent absorbent structure including:

- a liquid permeable resiliently-stretchable bodyside liner (23),
- a liquid impermeable barrier (25),
- an absorbent composite (24) disposed between the barrier and the bodyside liner;
- wherein the bodyside liner (23) is integrally retained within the outer cover (10).

The outer cover or panty fabric is made of elasticised fabric panels and the crotch section of the outer cover receives the absorbent structure (crotch element) which is attached by an elastic member (11) made of the same material as the panty fabric. The bodyside liner (23) and the liquid impermeable barrier (25) are made of the same elastic material (column 8, lines 49 to 58). The attachment means for disposing the absorbent structure within the outer cover are formed by the crotch bridges (32, 33) and crotch elastic members (34, 35) of the elastic member (11) and have therefore elastic properties (see column 7, lines 4 to 10). Due to the elasticity of the outer cover, the attachment means, the bodyside liner and the barrier, it is inferred that

the attachment means for integrally disposing said absorbent means within the resiliently-stretchable outer cover do not inhibit the stretchability of the outer cover.

It is an object of the known garment to provide a panty having a fit that lies flat against the body, which is comfortable to wear and adapted to fit a range of sizes comfortably (see column 1, lines 9 to 20).

The known garment differs from the subject-matter of the independent claims 1 to 3 of the patent in suit in that

- the liquid impermeable barrier of the absorbent structure is not secured to the bodyside liner of this structure (cf. claims 1 and 2 of the patent in suit);
- the absorbent structure does not assume a cupped shape about the body of the wearer when the garment is worn (cf. claim 1 of the patent in suit);
- the liquid impermeable barrier is not secured to the bodyside liner while this liner is in a stretched condition (cf. claim 1 of the patent in suit);
- the attachment means does not comprise pockets formed by waist flaps folded over the ends of the absorbent structure (cf. claim 2 of the patent in suit), and
- the garment is not obtainable by a process comprising bonding said liquid permeable bodyside liner to said outer cover outside of the periphery of the absorbent composite while the outer cover

is in a stretched condition, such that, after relaxation of the outer cover, the bodyside liner is drawn under the absorbent structure by the outer cover to provide attachment means for integrally disposing the absorbent means within the resiliently-stretchable outer cover whereby the stretchability of the resiliently-stretchable outer cover is uninhibited (cf. claim 3 of the patent in suit).

- 4.2 Document D8 relates to an absorbent dressing including napkins, diapers and the like which comprise an absorbent means having an absorbent structure including a liquid permeable resiliently-stretchable bodyside liner (14, 33, 36), a liquid impermeable barrier (13, 32) secured to the bodyside liner and an absorbent composite (12, 32) disposed between the barrier and the liner.

The object of the disposable absorbent dressing is to be stretchable and to have elasticity and conformability to the body members to which it is applied (see column 1, lines 12 to 28).

This known disposable absorbent dressing differs from the subject-matter of the independent claims 1 to 3 of the patent in suit in that

- it does not concern a form-fitting self-adjusting disposable garment (cf. claims 1 and 3 of the patent in suit);
- it does not have an air permeable outer cover resiliently-stretchable in at least one direction (cf. claims 1 to 3 of the patent in suit) with the

result that there is no possibility for retaining the bodyside liner and for disposing the absorbent means within the outer cover (cf. claims 1 and 2 of the patent in suit);

- the absorbent structure is not obtained by securing the liquid impermeable barrier to the bodyside liner while this liner is in a stretched condition (cf. claim 1 of the patent in suit), and
- attachment means are not provided in relation to an outer cover (cf. claims 1, 2 and 3 of the patent in suit).

4.3 Document D1 relates to a diaper which comprises an airlaid absorbent body (13) supported by a receiving media (18), a porous top sheet (14) overlying the absorbent body and a back sheet (17). This back sheet can be optionally waterproof or can be used in conjunction with a separate pair of waterproof pants. The porous top sheet and the back sheet are directly bound together (see column 3, line 57 to column 2, line 8; column 6, lines 45 to 50).

It is an object of the subject-matter according to document D1 to provide a disposable diaper which is easy to pin having an absorbent body without tensile properties and the absorbent body extending throughout the pinning areas (see column 2, lines 50 to 53).

The documents D4 and D7 concern disposable garments and diapers comprising fluid pervious inner sheets, fluid impervious outer sheets and absorbent means disposed between the inner and outer sheets, which are joined to

each other. Elastic means are provided along the longitudinal margins of the front and back portions and of the crotch sections for increasing the containment and comfort features of the garments or the fitting features of the diapers.

These garments and diapers do not comprise an additional air permeable outer cover, in which the absorbent means could be disposed and secured in the way required by the subject-matter of the independent claims of the patent in suit.

4.4 It follows from the above, that none of the cited documents discloses all the features of any of the independent claims 1 to 3 of the patent in suit. Therefore, the subject-matter of these claims is new, which was not contested by the respondents.

5. On the question whether or not the cited prior art could suggest the subject-matter of any one of the independent claims the following should be observed:

5.1 The object of the subject-matter of the patent in suit is to provide a disposable garment or diaper which is anatomically form-fitting and anatomically self-adjusting for the person to wear.

This object is achieved by the garment and diaper as specified in the independent claims, in particular by those features in which the subject-matter of these claims differs from the prior art (see above point 4):

Claim 1:

With the resiliently-stretchable bodyside liner which has been secured to the liquid impermeable barrier while the liner was in a **stretched condition**, the liner, which is thereafter no longer submitted to the

stretched condition, retracts so that the ends or the edges of the absorbent structure cause it to assume a cupped profile (see page 5 of the description of the patent in suit lines 21 to 35). Thus, the absorbent structure naturally takes a more fitted form when the garment is worn and there is minimum appearance of the edges of the absorbent structure on the outer cover.

Claim 2:

Folding over the waist flaps of the outer cover on the ends of the absorbent structure forms a kind of pocket in which these ends are inserted in a floating relation to the pockets and therefore to the outer cover. Since there are no bonds holding the ends of the absorbent structure to the outer cover, the waist portion of the outer cover extends freely without being hindered by the non extendable absorbent structure. Consequently the outer cover is stretchable and retractable independently of the absorbent structure maintained thereon and the garment has improved form-fitting and self-adjusting properties.

Claim 3:

With the liquid bodyside liner bonded to the outer cover outside the periphery of the absorbent composite while the outer cover is in a **stretched condition**, this composite is surrounded by the bodyside liner and the stretchable outer cover. As the outer cover is relaxed, it retracts and draws the non stretchable bodyside liner under the outer cover as explained in the description of the patent in suit (page 6, lines 1 to

14, Figure 6 to 9). Again the outer cover is stretchable independently of the absorbent structure which is maintained within the outer cover and the bodyside liner and the garment and its outer cover have improved form-fitting and self-adjusting properties.

5.2 It follows from the analysis of the state of the art that document D11 discloses a garment which comes closest to the subject-matter of the claims 1 and 3 and that the diaper known from document D8 represents the prior art which comes next to the subject-matter of claim 2.

5.2.1 According to the teaching of document D11, the independent absorbent structure (20) is assembled by superimposing the liquid permeable bodyside liner (23), the absorbent composite (24) and the liquid impermeable barrier (25), and then bound with the elastic member (11) and the outer cover (10) together in an **unstretched condition**, thus binding the three elements of the absorbent structure together (see column 3, lines 1 and 2; column 9, lines 57 to 59; column 10, lines 61 to 68).

Since in assembling the known garment, an **unstretched condition** is required, the absorbent structure must also have an **unstretched flat configuration**. Therefore, there is no reason for departing from the teaching of document D11 in order to assemble the absorbent structure while the body side liner is in a **stretched condition** in such a way that a **cupped shape** of this structure is obtained as specified in claim 1, or to bind the liquid permeable bodyside liner to the outer cover outside of the absorbent composite while the outer cover is in a **stretched condition**, such that after relaxation of the outer cover attachment means for the absorbent means are provided as specified in claim 3.

5.2.2 According to the teaching of document D8, the liquid impermeable barrier at least is elastic and easily deformable, which barrier is heat sealed to the underside of the absorbent means as well as to the liquid permeable bodyside liner (see column 5 lines 40, 41, 49 to 53, column 7, lines 26 to 33; 44 to 47; column 8, lines 34 to 46).

Since, however, the known absorbent dressing is not disposed within an additional air permeable outer cover, document D8 can also give no hint of retaining the absorbent structure in such an outer cover, such that the absorbent structure assumes a **cupped shape** about the wearer when the absorbent structure is worn, or of providing attachment means which would allow the absorbent structure to be disposed within the outer cover in such a manner that the stretchability of the outer cover is uninhibited as specified in the independent claims.

The lack of any attachment means within the meaning of the subject-matter according to the independent claims of the patent in suit also excludes the possibility of the attachment means comprising pockets joined by flaps folded over the ends of the absorbent structure.

5.2.3 Therefore none of the documents D11 and D8 gives, alone or in combination with one another, any hint to the skilled person of securing the bodyside liner to the barrier while the liner is in a **stretched condition** so that a **cupped shape** of the absorbent structure is achieved, or of bonding the bodyside liner to the outer cover while the latter is in a **stretched condition** so that the bodyside liner is drawn under the outer cover or of forming pockets in the outer cover in order to increase the anatomically form-fitting and anatomically self-adjusting of the garment according to the teachings of the independent claims.

5.3 Since the devices according to the documents D1, D4 and D7, which documents D4 and D7 have been cited only in relation to the use of elastic means in disposable garments and diapers, do not comprise the features in which the subject-matter of the independent claims differs from the garment and diaper according to documents D11 and D8, their teachings could therefore neither per se nor in combination with the teachings of the other documents lead the person skilled in the art to the subject-matter of said independent claims.

5.4 It follows from the above that it was not obvious to arrive at the claimed disposable garment or diaper in view of the cited prior art. Therefore, the subject-matter of claims 1, 2 and 3 is considered to involve an inventive step as required by Article 52(1) and 56 EPC.

6. Consequently, the patent can be maintained with the claims according to the main request and with a description and figures still to be adapted accordingly, ie with a description indicating the relevant background art (documents D8 and D11) and restricted to the examples covered by the subject-matter of the claims.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the first instance with the order to maintain the patent with the claims 1 to 34 filed during the oral proceedings and a description to be adapted.

The Registrar:



S. Fabiani

The Chairman:



H. Seidenschwarz