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**Datasheet for the decision
of 3 April 2009**

Case Number: T 1587/06 - 3.2.06

Application Number: 98906345.8

Publication Number: 0967953

IPC: A61F 13/15

Language of the proceedings: EN

Title of invention:

Absorbent article having a breathable backsheet

Patentee:

THE PROCTER & GAMBLE COMPANY

Opponent:

Paul Hartmann AG
Kimberly-Clark Corporation

Headword:

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Relevant legal provisions:

-

Relevant legal provisions (EPC 1973):

EPC Art. 56

Keyword:

"Ground of insufficiency (not admitted)"
"Inventive step (no)"

Decisions cited:

G 0009/91, G 0010/91

Catchword:

-



Case Number: T 1587/06 - 3.2.06

D E C I S I O N
of the Technical Board of Appeal 3.2.06
of 3 April 2009

Appellant: Kimberly-Clark Corporation
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Decision under appeal: Interlocutory decision of the Opposition
Division of the European Patent Office posted
8 August 2006 concerning maintenance of
European patent No. 0967953 in amended form.

Composition of the Board:

Chairman: P. Alting Van Geusau
Members: M. Harrison
R. Menapace

Summary of Facts and Submissions

I. The appellant (opponent OII) filed an appeal against the opposition division's interlocutory decision dated 8 August 2006 according to which European patent number 0 967 953 in its amended form was found to meet the requirements of the European Patent Convention, and requested revocation of the patent.

II. In reaching its decision, the opposition division refused to admit

E6: WO-A-90/04375

into the proceedings because it was considered to be both late filed and not *prima facie* relevant. In particular, the opposition division considered that a combination of E6 with

E2: EP-A-0 477 802

or vice versa, would not lead to the claimed invention.

III. With its grounds of appeal, the appellant submitted *inter alia* that E6 should be allowed into proceedings, since together with the teaching of E2, the subject matter of claim 1 lacked an inventive step. An objection of insufficiency of disclosure was also raised for the first time.

IV. The respondent (proprietor) requested dismissal of the appeal and argued that E6 should not be admitted into proceedings. The respondent's consent for consideration of the insufficiency objection was refused.

- V. The Board issued a summons to oral proceedings together with a communication stating its provisional opinion. In particular, the Board opined that E6 was highly relevant to the matter of inventive step when seen in combination with the teaching of E2.

With reference to G9/91 and G10/91, and due to the respondent's refusal to give its consent to introduction of the objection under Article 100(b) EPC, the Board stated that the objection was not to be considered.

- VI. With its facsimile letter dated 30 March 2009, opponent OI informed the Board that it would not attend the oral proceedings.

- VII. During the oral proceedings of 3 April 2009, the appellant confirmed its request for revocation of the patent and the respondent confirmed its request for dismissal of the appeal. The respondent also withdrew its objection to admittance of E6 into proceedings.

- VIII. Claim 1 of the main request reads as follows:

"A disposable absorbent article having a front waist region having a transverse width, a rear waste region having a transverse width, a crotch region having a transverse width positioned between the front waist region and the rear waist region, a pair of opposed side edges, a first end edge located in said front waist region and a second end edge located in said rear waist region, said absorbent article comprising an absorbent core having a pair of opposing longitudinal

edges, a garment facing side and a body facing side, said article having a breathable laminate adjacent said garment facing side of said absorbent core, said laminate comprising an inner layer and an outer layer joined to one another, said inner layer being positioned between said absorbent core and said outer layer, and said inner layer being longitudinally coterminous with said absorbent article and of a smaller transverse width than the transverse width of said front waist region and said rear waist region and said crotch region, so as to form a second breathable zone, which is longitudinal coterminous with said absorbent article and adjacent to each of said side edges, characterized in that:

said outer layer being relatively liquid, air and vapor pervious; and said inner layer being substantially liquid impermeable and substantially vapor pervious; said laminate has a first breathable zone where both said outer layer and inner layer are present; whereby the second zone has a mass vapor transmission rate of at least $2500 \text{ g/m}^2/24 \text{ hours}$ and said first zone has a vapor transmission rate of at least $1500 \text{ g/m}^2/24 \text{ hours}$; and said article comprises elasticized leg cuffs for providing improved containment of liquids and other body exudates."

IX. The appellant's arguments may be summarised as follows:

An objection of insufficiency arose under Article 100(b) EPC 1973. Although the respondent had refused its consent for consideration of the objection under Article 100(b) EPC 1973, the matter was relevant to inventive step since the test method described in the patent for determining the mass vapour transmission

rate (MVTR) meant that the MVTR values in the claim were unclear.

E6 should be introduced into proceedings as it had been filed in reaction to an amendment made to the claim before the opposition division, which had come from the description. E6 contained this feature and essentially all other features of claim 1. It implicitly disclosed a second zone which was liquid-permeable, whereby its MVTR value exceeded the minimum value claimed. Only the MVTR value in the first zone in E6 was not inevitably above that claimed, and this was the only difference of claim 1 over E6. As regards the claim wording, the term "laminate" in claim 1 did not require a continuous connection over the surfaces of the layers, merely a connection allowing the layers to act in a unitary manner. Paragraph [0026] of the patent explained that any method of joining two layers could be used to form the laminate, amongst which were ultrasonic bonding and adhesives, each of which produced non-continuous connections. Nor was the term "laminate" normally understood in this field to imply a continuous surface-to-surface connection. This was demonstrated for example in:

E4: US 4 655 760,

which disclosed laminates formed by needle punching.

With regard to the problem/solution approach, the objective problem to be solved starting from E6 was to further improve breathability. E6 already disclosed improving breathability in the first zone by reducing the size of its barrier layer.

E2 related to a similarly constructed article with a dual-layered structure in the first zone which included a liquid impermeable barrier layer ("baffle") and a liquid permeable backsheet. Not only did E2 disclose minimising the baffle size so that the absorbent structure would lie directly against the breathable backsheet, but it also disclosed a baffle which was preferably highly vapour permeable, to a value of at least 5,000 g/m²/24 hours. When applying this teaching to E6, the result was that two layers both of very high vapour permeability would be combined, resulting in a MVTR in the first zone well above the low MVTR claimed, this value anyway being unclear due to the incomplete test method described.

E2 did not teach against using a laminate. Even if it did, this was irrelevant since the teaching obtained from E2 was the use of preferred high MVTR in the baffle layer. E2 anyway did disclose bonding layers with a grid of intersecting bond lines having a joint area of up to 30% of the mutually facing sheet areas, which was thus a laminate in terms of the patent.

Claim 1 thus lacked an inventive step.

X. The respondent's arguments may be summarised as follows:

E6 could be regarded as the closest prior art, but this did not allow a skilled person to arrive at the subject matter of claim 1 by using the teaching of E2, unless a hindsight analysis were used.

First, E6 did not disclose a laminate. It mentioned various possibilities for securing layers together, but was unspecific about which layers were being secured by which means. Nothing beyond peripheral bonding of layers could be derived from E6. A laminate required that the two layers of the laminate were joined continuously across their surfaces, as was known for laminate constructions such as laminated bank cards, ID cards or laminated wooden structures. A continuous, whole surface connection was the meaning attributed always to the term "laminate". Paragraph [0026] of the patent disclosed various possibilities of joining, but all would be understood as implying continuous bonding. Adhesives used in the connection could be continuous yet still vapour permeable if the correct adhesive was used, and if applied thinly enough the rigidity would not be too high for absorbent products. Only in paragraph [0024] were non-continuous forms of adhesives disclosed for non-laminated parts of the product, so that a distinction to paragraph [0026] would be understood. The terminology "any means known in the art" as used in paragraph [0026] to describe the method of joining, implied joining by any means which however necessarily created a continuous surface-to-surface connection. Ultrasonic bonding, if used, would thus be carried out in a manner so as to provide continuous bonding across the whole surfaces.

The objective problem to be solved starting from E6 could be regarded as further improving the breathability. However, E6 already gave a complete solution to this problem, which involved reducing the surface area of the barrier layer to give the breathability level required. The E6 barrier layer was

not vapour permeable and E6 disclosed nothing about making it permeable.

A skilled person would not look to E2 because it taught away from using a laminate. E2 was also not concerned with the problem of improved breathability; nowhere was such a problem stated. Any approach using E2 was thus hindsight-based.

E2 specifically required (see column 2, lines 52 to 58) that the two layers in the backing layer, i.e. the backsheet 14 and the baffle 16, be non-adhered and freely movable with respect to each other. This was indeed the solution to the problem underlying E2. E2 only ever disclosed peripheral bonding; the other disclosures in E2 did not teach anything else. Even the maximum disclosed 30% joined surface area, even if made with intersecting adhesive lines would not imply a laminate, and values of 1% to 15% joined surface area were anyway preferred so there was no teaching to use more bonding.

Since neither E2 nor E6 disclosed a laminate, the skilled person could not arrive at the subject matter of claim 1 irrespective of how the documents were combined. Even if the layers were however combined, it was entirely unknown what MVTR value would result for the first zone when combining the baffle layer of E2 with that of E6, since the joining method and bond area would influence the MVTR to an unknown extent.

Furthermore, merely using a vapour permeable baffle layer, in particular a highly vapour permeable baffle layer was itself already a choice within E2, not a requirement; vapour impermeable layers could also be

used. Even if a highly vapour permeable baffle layer were used in E2 this would only be for the case where the baffle and backing sheet layer were co-extensive. Thus a skilled person had no incentive to use this highly permeable layer for the non-contiguous layer embodiments disclosed in E6, since sufficient breathability was present.

The subject matter of claim 1 thus involved an inventive step.

Reasons for the Decision

1. *Article 100(b) EPC 1973*

The appellant's objection in this regard was first made when filing its grounds of appeal and relates to both the granted patent and the amended form of the patent (which the opposition division found allowable). Any objection arising in this regard is thus not a result of the amendments made. As follows from G9/91 and G10/91 (OJ EPO 1993, 408, Reasons item 18), this ground is to be treated as a fresh ground of opposition and may not be considered by the Board without the consent of the proprietor. Since consent has been refused by the proprietor, the ground of opposition under Article 100(b) EPC 1973 will not be considered in this decision.

2. *Introduction of E6 into proceedings*

Although the opposition division concluded that E6 was not sufficiently relevant for it to be introduced into proceedings, the Board concludes to the contrary.

The respondent also withdrew its objection to the introduction of E6, and has submitted that E6 may be considered as the closest prior art.

In this regard it is further to be noted that E6 was filed by the appellant during opposition proceedings in response to the filing of an amended claim 1 by the proprietor, whereby the amendment came from the description. Since the relevance of the documents previously on file for use in attacking the inventive step of the subject matter of claim 1 was reduced by means of the amended claim, and since E6 contained the added feature, its introduction into proceedings should have been allowed in order to permit the opponent to provide an attack against inventive step in combination with the teaching of E2.

E6 is thus introduced into the proceedings.

3. *Inventive step*

- 3.1 E6 discloses (see e.g. Figs. 1 and 2; page 8, lines 9 to 25; page 9, lines 1 to 11; page 10, lines 6 to 10; page 11, lines 1 to 7; page 13, lines 8 to 26) an absorbent article having all the features of claim 1 with the exception of the features defining that the inner layer is substantially vapour pervious and that

the laminate has a first breathable zone with a vapour transmission rate of at least 1500 g/m²/24 hours.

In this regard it should be mentioned that although the term "moisture-pervious" is used in E6, this term is the same as "liquid pervious" as used in claim 1 of the opposed patent since the term "moisture pervious" in E6 is used to describe the properties of the facing layer 12, which by its very nature has to allow the quick transport of liquids impinging on the facing layer 12 into the absorbent core beneath; apertured non-woven fabrics (i.e. liquid permeable fabrics) are disclosed as one of several materials for use in this layer (see e.g. page 10, lines 6 to 10). The "first zone" defined in claim 1 may be considered to be the zone in E6 where liquid impervious barrier layer 18 and liquid permeable (and thus vapour permeable) backing layer 16 overlap one another, whereby the "second zone" may be regarded as the area of the backing layer 16 laterally outwardly of the first zone. Since the backing layer 16 is liquid permeable, it is self-evident that it has a MVTR vastly in excess of 2500 g/m²/24 hours, since values of above 5000 g/m²/24 hours are attributable even to layers which are not liquid permeable and only vapour permeable. The respondent did not dispute this.

- 3.1.1 The respondent however argued that, in addition to the foregoing features, E6 failed to disclose a laminate, based on its allegation that a laminate requires a whole surface continuous connection. However, the Board finds the respondent's arguments in this regard unconvincing. First, nowhere in the patent is a definition of a laminate given in such a way that a connection of one sheet to another over the whole

surface is required or implied. Further, paragraph [0026] of the patent defines that the means by which the inner and outer layers of the laminate should be joined to one another "include any means known in the art". Examples are then given which include adhesives and ultrasonic bonds. No special adhesives and no special way of ultrasonic bonding are disclosed which might permit a whole surface continuous connection, and the Board finds that a skilled person in the art of disposable absorbent articles is aware that ultrasonic bonding is a discrete location bonding process resulting, necessarily, in spacing between the bonded areas. Similarly, adhesives are typically sprayed or added in lines when adhering parts of the backsheet together; no special adhesives are indicated which might be used to join the inner layer and outer layer together in such a way that a continuous surface coverage is present whilst at the same providing the vapour permeability claimed and flexibility necessary in such products. The Board thus concludes that this passage of the patent can only be understood to imply that the laminates of the patent encompass layers which are joined together in such a way that gaps may be present between the specific joined areas of the sheet whilst still maintaining a unified sheet.

- 3.1.2 Nor is the Board convinced by the respondent's argument that laminates are understood by a skilled person, always, to require a continuous connection. Whilst it is agreed that many laminates do have such a connection, the technical field to which the laminate belongs must be considered. In the field of absorbent articles it is known that laminates do not require whole surface continuous connection. E4 (see e.g. column 1, lines 16

to 21) discloses for instance a laminate formed by needle punching, which necessarily implies a spacing between the connections. More importantly, as explained above, the patent itself discloses joining methods (e.g. ultrasonic bonding) which by their nature do not provide a whole surface connection between the layers, so that irrespective of whether a laminate might sometimes mean whole surface coverage, the patent itself teaches something different. The respondent's further reliance in part on paragraph [0024] in this regard does not change the Board's conclusions, since paragraph [0026] does not provide any reference to, or distinction from, the joining methods given in paragraph [0024]; paragraph [0024] simply gives several forms of adhesive that may be used to attach the backsheet to the absorbent core including both a continuous layer or a patterned layer. At the end of the paragraph [0024] ultrasonic bonds as well as "any other suitable attachment means" known in the art are disclosed.

- 3.1.3 The respondent further argued that it was not disclosed how the barrier layer 18 and the backing layer 16 in E6 were connected, such that nothing beyond a mere peripheral connection of the layers was anyway implied, in particular since the methods for securing the various layers were not specific for any particular layers, and a peripheral bonding would not provide a laminate even when giving a broad meaning to the term "laminate".

However, the Board also finds this argument unconvincing. E6, page 13, lines 16 to 23, describes methods of securing the multiple layers of the diaper

together. Specifically, securing of the barrier layer 18 to backing layer 16 is mentioned. The methods of securing the layers together are those normally applicable in the art and a skilled person would regard these as applicable to any of the layers. The fact that adhesive in the form of sprays is to be used, makes it clear that, for the diaper product in question, mere peripheral bonding is not intended, even if such bonding could be understood to be something different from the term "laminate" used in claim 1.

3.1.4 The Board thus concludes that the only features of claim 1 not disclosed in E6 are that the inner layer is substantially vapour pervious, and that the laminate has a first breathable zone with a vapour transmission rate of at least $1500 \text{ g/m}^2/24$ hours.

3.2 In view of its relevance to the objective problem to be solved and in view of the large number of features which has in common with claim 1, E6 is also to be regarded as the closest prior art. This is also not disputed by any party.

3.3 Turning to the objective problem to be solved starting from E6, it is first noted that the problems given in the patent at paragraphs [0006] to [0008] are not objective in the light of E6, since no features of claim 1 define any structural aspect related to these problems which would clearly distinguish the claimed article from that disclosed in E6.

Since the features defined in claim 1 do however relate to aspects of vapour permeability not present in E6, the Board concludes that the objective problem to be

solved over E6 is to further improve the breathability of the absorbent article.

- 3.4 E6 already gives the skilled person the indication that breathability is affected by the liquid impermeable barrier layer 18 and goes some way to improving breathability by limiting the surface area of the barrier layer compared to that of the pervious backing layer (see e.g. page 4, lines 5 to 9 and page 9, lines 1 to 11). When wishing to further improve the breathability of the article, i.e. a disposable absorbent article with leg cuffs, the skilled person is taught by E2 (see e.g. column 3, lines 52 to 56), which also relates to a disposable absorbent article with leg cuffs, that by making the baffle layer 16 of E2 smaller, selected portions of the absorbent core lie "directly adjacent the breathable backsheet 14". Further, the skilled person is then taught in column 4, lines 42 to 52, that the baffle layer 16 which is attached to the liquid permeable backsheet 14 may be vapour permeable and that the baffle layer 16 should be highly breathable with an MVTR value preferably "of at least about 4,000 g/m²/24 hours" but "more preferably a value of at least about 5,000 g/m²/24 hours". These statements, in particular the preference for greater breathability, together teach a skilled person that improved breathability is desirable and can be achieved by using both a smaller impermeable layer and by making this layer vapour-permeable.

With this knowledge a skilled person would apply the teaching of E2 to E6 and would solve the problem of providing improved breathability by replacing the material of barrier layer 18 in E6 by a vapour

permeable baffle material as known for the baffle of E2. In taking this obvious step, the Board concludes that the MVTR of the first zone (i.e. an area of the backsheet including the combined layers) would implicitly be in excess of $1500 \text{ g/m}^2/24$ hours, since this value itself is already below the lowest MVTR value given for the baffle layer in E2 and vastly below the preferred value. When combined with the backing layer 16 in E6, which is itself of a much higher MVTR value, this would result in a MVTR value clearly in excess of that claimed. In this regard, it is obvious for a skilled person wishing to improve breathability of the E6 article by adaptation of the barrier layer by means of a vapour permeable material, to use a connection type between the layers which would minimise any loss of vapour permeability due to the joining itself. Additionally it should be noted that no critical significance has been attached to the specific MVTR value of $1500 \text{ g/m}^2/24$ in the patent (see paragraph [0036]), but merely that it should be above that level so as to provide an entire absorbent article with a high average MVTR.

- 3.5 The respondent argued that E6 itself gave a complete solution to the problem of improving breathability and that merely making the barrier layer smaller would improve breathability. However the Board concludes that a skilled person is not limited to one way of improving breathability when he is taught by the prior art that other ways are possible, in particular when the prior art mentions both reducing the size and providing a high level of vapour permeability. Further, it is evident that the barrier layer in E6 cannot simply be reduced in size without further consequence, otherwise

liquid exudates in the absorbent core would not be satisfactorily prevented from passing out through the backing layer onto the wearer's clothing. Thus, a skilled person aware of this restriction concerning the reduction in size of the barrier layer would indeed be prompted to seek further solutions, thus providing a further incentive to consult E2.

- 3.6 The respondent submitted additionally that E2 taught away from the claimed subject matter since it necessitated non-adherence and free movement between the baffle layer and the backsheet, which was the opposite of a laminate. The Board finds first that this argument lacks relevance when considering the objective problem to be solved, since the skilled person already starts from a laminate in E6 and is seeking to further improve an article already having that laminate. The teaching obtained from E2 is concerned with the vapour permeability and also the size of the barrier layer. Even if the structure in E2 were not considered to be a laminate, the teaching given to a skilled person would not prevent this from being transferred to E6. However, the Board also concludes that E2 does disclose a laminate in the broad sense used to describe the possible means for connection of layers in the laminate in the patent (see paragraph [0026]). In particular, whilst E2, column 2, line 52 to column 3, line 10, indeed discloses a large non-connected area between the backsheet and the barrier layer (for the purpose of providing an article having a more clothlike texture while maintaining liquid impermeability), column 4, lines 10 to 30 of E2 on the other hand relates to various configurations for attaching the baffle layer 16 to the backsheet 14 and discloses the use of

intersecting bond lines in a grid-like design and a joined surface area up to 30% of the mutually facing area. The Board concludes that at least this latter disclosure goes far beyond mere peripheral bonding and would indeed provide a unified sheet structure as present in a laminate.

3.7 The respondent's further submission that E2 does not necessitate the use of a vapour permeable baffle layer is agreed as such. However, when considering the objective problem to be solved of improving breathability, a skilled person reading E2 takes the teaching therefrom that higher vapour permeability is preferred and therefore would positively make this selection when wishing to improve breathability of the E6 article.

3.8 Likewise, although the respondent argued that the preferred higher vapour permeability would be used only where the barrier layer and backsheet were co-extensive, as shown in the Figures, and thus not in the case of barrier layers of reduced size, this is not found convincing by the Board.

The disclosure in column 3, lines 52 to 56 of reducing the baffle size in order that selected portions can lie adjacent the liquid-permeable and thus highly vapour-permeable backsheet 14 already indicates a desire to achieve breathability improvement. The disclosure in column 4, line 44 *et seq* concerning the preference for higher vapour permeability in the baffle layer is not linked to any specific embodiment at all, but is equally applicable to all embodiments. Whilst it may therefore be correct that high vapour permeability is

to be favoured where the baffle layer is co-extensive with the backsheet, this does not detract from the disclosure of E2 to a skilled person with regard to the baffle and its relationship to the backsheet, teaching that a high vapour permeability is indeed preferred.

- 3.9 Thus starting from E6 and given the objective problem to be solved, the skilled person would arrive at the subject matter of claim by applying the teaching of E2 without requiring inventive skill. The subject matter of claim 1 thus lacks an inventive step and the requirement of Article 56 EPC 1973 is not fulfilled. Claim 1 is therefore not allowable.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The patent is revoked.

The Registrar:

The Chairman:

M. Patin

P. Alting van Geusau