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**D E C I S I O N**  
of 29 July 1997

**Case Number:** T 0105/94 - 3.2.2

**Application Number:** 86850253.5

**Publication Number:** 0210968

**IPC:** A61F 13/15

**Language of the proceedings:** EN

**Title of invention:**

Absorption material, preferably for use in disposable articles  
such as diapers, sanitary napkins or wound dressings

**Patentee:**

Mölnlycke AB

**Opponent:**

Paul Hartmann Aktiengesellschaft

**Headword:**

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**Relevant legal provisions:**

EPC Art. 56, 83, 114

EPC R. 55(c)

**Keyword:**

"Grounds of appeal not substantiated in notice of opposition -  
not admissible at appeal stage"

"Inventive step (yes)"

**Decisions cited:**

G 0009/91, G 0010/91, T 0222/85, T 0925/91, T 0534/89,

T 0951/91

**Catchword:**

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Boards of Appeal

Chambres de recours

Case Number: T 0105/94 - 3.2.2

**D E C I S I O N**  
of the Technical Board of Appeal 3.2.2  
of 29 July 1997

**Appellant:**  
(Opponent) Paul Hartmann Aktiengesellschaft  
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**Representative:** Becker, Maria, Dipl.-Phys  
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**Respondent:**  
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**Representative:** Harrison, Michael Charles  
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**Decision under appeal:** Interlocutory decision of the Opposition Division  
of the European Patent Office posted 3 January  
1994 concerning maintenance of European patent  
No. 0 210 968 in amended form.

**Composition of the Board:**

**Chairman:** H. Seidenschwarz  
**Members:** M. Bidet  
C. Holtz

## Summary of Facts and Submissions

- I. On 4 February 1994 an appeal was filed against the interlocutory decision of the opposition division, issued on 3 January 1994 maintaining European patent No. 0 210 968 in an amended form, the appeal fee being paid on the same date. The statement setting out the grounds of appeal was received on 4 May 1994.
- II. The opposition was against the patent as a whole and based on Article 100(a) EPC contending that the subject-matter of Claim 1 as being amended after the filing of the notice of opposition, did not involve an inventive step.

In the decision under appeal, the opposition division held that the ground of lack of inventive step invoked against the patent did not prejudice the maintenance of the patent as amended having regard to the following documents:

(D1) DE-A-2 721 511  
(D4) GB-A-2 201 604

- III. Oral proceedings was held on 29 July 1997.

- (i) The appellant (opponent) requested that the decision under appeal be set aside and the patent be revoked.

The respondent (patentee) requested that the decision under appeal be dismissed and the patent be maintained on the basis of the claims as allowed by the opposition division (main request) or on the basis of either the first or the second auxiliary requests filed at the beginning of the oral proceedings.

- (ii) Claim 1 of the patent as amended (main request) which comprises the features of Claims 1 and 3 of the patent as granted reads as follows:

"Absorption material, preferably for use in disposable articles such as diapers, sanitary napkins or wound dressings, comprising 70-95% of cellulose absorption fibers, 2-25% of a super absorbent material and 2-20% of a binder in the form of bonding fibers, which are heat fused and thus bond the absorption fibers and the super absorbent material into a coherent body, characterised in that the absorption material, by being compressed in its direction of thickness, has been given a continuous density gradient in said direction of thickness which is essentially retained in both its wet and its dry state, the absorption body formed having its lowest density in the layer facing the wearer during use of the article."

- (iii) In support of its requests, the appellant argued as follows:

The invention was insufficiently disclosed within the meaning of Article 83 EPC, (Article 100(b) EPC) in particular the feature that "the absorption material by being compressed in its direction of thickness has been given a continuous density gradient in said direction of thickness". The Board of appeal had a discretionary power under Article 114 EPC to examine this ground. The possibility that the patent might be revoked on this ground after invalidity litigation at the national level should lead the Board to consider it.

On the ground according to Article 100(a) EPC, the subject-matter of Claims 1 according to the main request and to the two auxiliary requests lacked inventive step with respect to the teachings of the above cited documents D1 and D4 considering that:

- document D1 disclosed the features of the preamble of Claims 1, namely an absorption material comprising cellulose absorption fibers, a super absorbent material and bonding fibers, in which the bonding fibers are heat fused to bond the two other components into a coherent body; this absorption material was preferably used for disposable articles such as diapers, sanitary napkins or wound dressings.
  
- document D4 illustrated, at least in the embodiment according to Figure 4 a mixture of cellulose fibres including fillers and a binder distributed in the mixture to obtain a fibrous product in which the binder concentration increased from the one surface towards the opposite surface. There was, therefore, a continuous density gradient in the direction of the thickness of this known product. Furthermore, the product according to Figure 4 related to a one-layer product and was used as a starting material for a number of products e.g. diapers, sanitary napkins and other products for the care of the human body (see page 3, lines 115 to 122; page 8, lines 17 to 19).
  
- It was therefore obvious to the skilled person who intended to continuously enhance the well-known properties needed in diapers products either to apply the teaching of document D4, namely to provide a continuous density gradient in the direction of the thickness of the diaper, to the absorption material disclosed in document D1. The same conclusion would be attained starting from the teaching of document D4, as regards the continuous density gradient of the sanitary napkins and to use an absorbent structure according to document D1.

(iv) The respondent argued as follows:

In accordance with decisions G 9/91 and G 10/91 of the Enlarged Board of Appeal, the ground of insufficiency of disclosure should not be admitted into the appeal proceedings as it was a fresh ground only invoked at the appellate stage.

Concerning the ground of appeal based on Article 100(a), it was contested that the skilled person would take the teaching of document D4 into consideration, since the general teaching of this document relied on the preparation of fibrous products composed of two or more fibrous layers, particularly useful for the production of containers. (see page 1, lines 53 to 57 and page 3, lines 73 to 78). The effect of having such a high concentration of binder was more to prevent or to retain any flow of any liquid as it can be seen from all the various applications given in the description relating to roof covering elements, building material, or even disposable packing material, packaging materials for food products (page 3, line 123 to page 4, line 3; page 4, line 65 to line 106) than to enhance the absorption ability. The main property to be fulfilled by the absorption material according to Claim 1, namely the super absorption, was not that of the products mentioned in document D4, the skilled person would not find any hint in this document leading it to enhance the absorption of flow of liquid. But even if considered he it, he would not arrive at the claimed solution, since applying the teaching of document D4 to that of document D1 would lead to vary the density of the binder and not of the super

absorption material and this to a ratio up to 75%, i.e. well above the maximal claimed value of 20%. However, since the documents D1 and D4 disclose different types of binders, no combination of the teachings of these documents is possible.

### Reasons for the Decision

1. The appeal is admissible.
2. *Admissibility of the ground of insufficiency of disclosure*

While it is true that Article 114(1) EPC leaves room for any responsible organ within the EPO to consider any facts, evidence or arguments at any stage of the proceedings, under Article 114(2) EPC, such an organ is not obliged to consider anything which is not submitted in due time.

The question arising in the present appeal is whether or not the ground invoked by the opponent under Article 100(b) EPC is to be considered as a fresh or late submitted ground. The fact here is as pointed out in the decision under appeal, point 6 of the reasons for the decision, that although this ground was indicated (through a cross in the relevant box of EPO form 2300.2 for notice of opposition) it was never substantiated by the opponent. In the reasoning attached to the form for notice of opposition in the present case, the opponent merely alleged that claims 4 to 6 of the opposed patent only contained features which were part of the problem but no technical teaching, which meant that the skilled person could not work the invention as far as these claims were concerned. This ground was not discussed in the

subsequent written submissions by the parties, nor in the oral proceedings before the opposition division. No mention was made in the notice of appeal or grounds of appeal of any objection related to sufficiency of disclosure. Until the oral proceedings before this board of appeal, the appellant did not offer any reasons why these claims should be considered as insufficiently disclosed.

According to the consistent practice of the boards of appeal, a notice of opposition only meets the requirements of Rule 55(c) EPC, if the grounds of opposition are substantiated to such an extent that they can be properly understood by the parties involved in litigation. Therefore reasoning going into the merits of the opponent's case is called for (T 222/85, OJ EPO 1988, 128). This means that such a notice must contain sufficient indication of the facts, evidence and arguments related to each ground invoked (T 925/91, OJ 1995, 469). Failing this, the unsubstantiated ground must be considered as non-existent in the notice of opposition.

When the term for filing an opposition has expired, the extent of the opposition is established once and for all by the notice of opposition as filed within that term, (G 9/91 and G 10/91 OJ 1993, 408 and 420). The Enlarged Board of Appeal found that Rule 55(c) EPC only made sense if it was understood as having the double function of governing the admissibility of an opposition as well as establishing the legal and factual framework within which the substantive examination of the opposition was to be conducted (point 6 of the reasons). As regards Article 114(1) EPC, the Enlarged Board of Appeal held that it did not put anybody under the obligation to consider fresh grounds. Whereas the opposition division could go beyond the scope of the notice of opposition in



exceptional cases where there were clear reasons to believe that such grounds would prejudice the maintenance of the patent, at the appeal stage fresh grounds for opposition could only be considered with the approval of the patentee. This applied also when in the competent board's view the patent did not meet the patentability requirements related to the fresh ground in question.

In decision T 534/89 (OJ EPO 1994, 464) this board decided to refrain from examining the relevance of facts and evidence offered, as in the circumstances the late filing constituted abuse of proceedings. In decision T 951/91 (OJ EPO 1995, 202) the board refused to take account of late filed evidence even before it was actually submitted, for the main reason that Article 114(2) EPC served to enable the departments of the EPO to conduct proceedings efficiently and to forestall tactical abuse. These two decisions also serve, beside the Enlarged Board of Appeal decisions cited above, to clarify the extent of applicability of Article 114(1) EPC.

Applying the above case law to the circumstances at hand, the board concludes that the ground in dispute was not satisfactorily substantiated in the notice of opposition and not reverted to again until the oral proceedings before the board, so that this ground must be regarded as a fresh ground invoked only at the appellate stage. As the patentee has objected to the admission of this ground into the proceedings, it has to be rejected.

3. *State of the art*

3.1 Document D1 discloses an absorption material in the form of non-woven webs comprising a mixture of cellulose absorption fibres, a super absorbent material and heat-fusible fibres, the latter component bonding the cellulose absorption fibres and the super absorbent material into a coherent body as specified in the pre-characterising part of Claim 1 according to the main request.

An object of the teaching of document D1 is to provide an absorbing non-woven web for use as filters for absorbing components from gases or liquids, for example from water or air (see page 8, lines 1 to 10 and page 11, lines 1 to 5).

The absorption material according to Claim 1 as amended differs from that disclosed in document D1 in that it has been given a continuous density gradient in the direction of thickness by compression in that direction, so that it is essentially retained in both its wet and its dry state, the absorption body formed having its lowest density in the layer facing the wearer during use of the article.

3.2 Document D4 relates to the method of preparing a bonded fibre structure comprising cellulose fibres and a polyethylene binder which is subjected to compression and temperature, so that the binder is caused to flow and to fix the fibres relative to one another forming a solid skeleton (see page 2, lines 35 to 38 and lines 80 to 85).

It is an object of this bonded fibre structure to obtain predetermined binder concentration in any portion of the fibrous layer and to obtain a uniform distribution of the binder within the fibrous layer so

as to reduce or eliminate the tendency of the delamination as well as to allow the introduction of substantial amounts of filler in a fibrous product (see page 1, lines 34 to 45).

However, the known structure does not include a super absorbent material, and the binder being a powder does not take the form of fibres (see page 1, lines 73 to 75).

This fibrous material has a very wide range of applications such as for products having a long life time, used as building material in order to insulate temperature or noise, or to prevent flow of liquid when used as roof covering elements, or for the production of containers. Conversely it is also applicable when making short life articles such as starting material for diapers, sanitary napkins and other products for the care of human body (see page 2, line 58, line 102, line 118; page 3, lines 119 to 122).

The density of the structure used to form these final products can be varied by varying the amount of binder and by subjecting different areas of the structure to different degrees of compression and the density of a final product can be varied by placing together individual structures having different densities to form the final product (see page 1, lines 37 to 40; lines 62 to 72). However, there is no disclosure of a continuous density gradient in the direction of thickness of a structure.

- 3.3 The other documents cited in the proceedings are less relevant than the two above cited documents D1 and D4.

4. *Novelty*

None of the documents of the state of the art referred to during the opposition and appeal proceedings discloses in combination all the features specified in Claim 1 according to the main request.

The subject-matter of Claim 1 according to the main request is therefore considered to be new within the meaning of Article 54(1) EPC.

5. *Inventive step*

5.1 From the above point 3, it follows that the absorption material according to document D1 represents the state of the art nearest to the subject-matter of Claim 1 since it has the structure provided to absorb liquids.

5.2 According to the description of the patent as amended (see column 2, part A and lines 3 to 7), the webs disclosed in document D1 do not make it possible to provide an absorption body for diapers having excellent liquid-retaining capacity as well as liquid-transmitting capacity in order to keep the side of the absorbent article facing the wearer as dry as possible. It is therefore an object of the present invention to develop a high absorption material having proved superior to previous known articles of this type, i.e. having excellent liquid-retaining capacity and liquid-transmitting capacity.

5.3 This object is achieved according to the characterising portion of Claim 1 by the features cited in the last paragraph of point 3.1 above.

With the **continuous** density gradient of the absorption material associated to the fact that this material has its lowest density in the layer facing the wearer in use of the article, the density of the absorption material **increases gradually** in the direction from the side face facing the wearer and towards the opposed side surface, so that the value of the density within the region closest to the surface layer facing the wearer is so low that the liquid is substantially spread in the direction towards the opposed surface layer. The surface facing the wearer thus remains essentially dry. As liquid penetrates into the gradually denser compressed absorbent material the lateral distribution of the distribution of absorbed liquid accelerates. Thus, the super absorbent material and the gradually increasing density in the thickness direction provide for a high capacity of transporting liquid away from the wetting point and only once the surface layer opposed to the wearer has been saturated with the liquid, the spread liquid will be reversed towards the side facing the layer (see patent specification, column 3, lines 8 to 12 and 29 to 48; column 4, lines 5 to 13). Consequently the absorption material according to Claim 1 has higher liquid retaining capacity as well as better liquid transmitting capacity. This is quantitatively supported by the example and comparative example shown in column 4, lines 20 to 36.

- 5.4 According to the teaching of document D1, the super absorbent material is **homogeneously** distributed in order to secure the absorbent material to the cellulose absorbent fibres (see page 11, last paragraph). There is therefore no reason of leaving this teaching and to provide a non homogeneous density of the absorbent material.

Consequently, this document cannot suggest any solution according to which the density of the absorbent material would gradually increase in its thickness.

- 5.5 From the high diversity of the products which are obtainable according to the description of document D4, very different properties are required, sometimes to the point of being opposites, for example: flexibility as opposed to rigidity or high flexural strength (see page 2, lines 25 to 27; page 7, lines 7 to 9); uniform binder distribution as opposed to variable amount of binder (see page 1, lines 37 to 40; lines 57 to 59); large amount of binder as opposed to low amount of binder (see page 3, lines 24 to 27 and 32 to 34); absorbent ability as opposed to repellent ability or reduction of absorbency (see page 4, lines 17 to 26; page 2, lines 109 to 115 or page 3, lines 123 to 126); porous material as opposed to no porous material (page 2, lines 109 to 122).

The dry-laid fibrous product may in this respect have to be completed by various binders in order to attain these different properties. In these circumstances the content of this document should be interpreted with caution, particularly when combining various parts of the description.

According to the teaching of document D4, the density of a final product is varied by varying the binder concentration across the width, breadth and thickness of the structure forming the final product or by compressing two or more individual structures having different densities for the composition of a final product. This result in a stepwise change in density between the different structures in order to meet the requirements of the various applications of the known material.

When the known material is used for the manufacture of diapers and other products for the care of the human body, in which material the fibres are fixed relative to one another in open structure having a large volume thus allowing considerable amounts of liquid to be stored, these products have a high binder concentration in their edge zones which prevents any leakage of the stored liquid.

Therefore, in the light of the above teaching of document D4, the embodiment according to Figure 4, which shows a fibrous structure in which the binder concentration increases from the upper surface towards the lower surface, does not suggest to the person skilled on the art to obtain a fibrous product being compressed in such a manner that it has been given a continuous density in the direction of its thickness. Furthermore, it is nowhere suggested in document D4 that the embodiment of Figure 4 could be suitable for use as absorption material, the thickness of which is essentially retained in both its wet and its dry state.

Except for the indication that the fibres are fixed relative to one another in an open structure allowing considerable amount of liquid to be absorbed, no further information about the use of super absorbent material or the problem as set out in the present description of the patent in suit can be taken from this document.

Concerning the aspect of the general teaching of document D4 as regards the container for material or liquid, the main concern is to prevent or to reduce any water absorption in the fibrous material (see page 2, lines 92 to 115). Even in the parts of the description dealing with diapers the same concern is to be seen, since the liquid is prevented from penetrating such material (see page 3, lines 115 to 126).

From the teaching of document D4 the skilled person cannot find any suggestion or hint relating to the problem of improving the liquid transmission and retaining capacities as specified under point 5.2 above and therefore no further detailed investigation on another distinguishing feature of Claim 1 such as use of fibres as binder instead of powder according to document D1 or the lower range of binder (20% instead of 75%) is necessary.

5.6 Therefore none of the documents D1 and D4 gives, alone or in combination with one another, any hint to the skilled person of changing the density of the absorbent material in the direction of its thickness, so that it gradually increases the density from one surface to the opposed surface in order to increase the absorbent qualities of the article according to the teaching of Claim 1 of the main request.

5.7\_ It follows from the above that it was not obvious to arrive at the claimed absorption material in view of the cited prior art. Therefore, the subject-matter of Claim 1 according to the main request is considered to involve an inventive step as is required by Articles 52(1) and 56 EPC.

6. Claim 1 being allowable, the same applies to the dependent claims 2 to 5 whose patentability is supported by that of Claim 1 according to the main request.



Order

For these reasons it is decided that:

1. The fresh ground of insufficiency of disclosure is not admitted into the proceedings
2. The appeal is dismissed.

The Registrar:



S. Fabiani

The Chairman:



H. Seidenschwarz

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