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**Datasheet for the decision
of 8 April 2008**

Case Number: T 0256/07 - 3.2.06

Application Number: 01977040.3

Publication Number: 1339368

IPC: A61F 13/535

Language of the proceedings: EN

Title of invention:

Absorbing product with channels in the absorption layer and a compressed area to improve absorption

Patentee:

SCA Hygiene Products AB

Opponent:

Paul Hartmann AG

Headword:

-

Relevant legal provisions (EPC 1973):

EPC Art. 54

Keyword:

"Novelty (yes)"
"Inventive step (yes)"

Decisions cited:

-

Catchword:

-



Case Number: T 0256/07 - 3.2.06

D E C I S I O N
of the Technical Board of Appeal 3.2.06
of 8 April 2008

Appellant: Paul Hartmann AG
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 29 January 2007
rejecting the opposition filed against European
patent No. 1339368 pursuant to Article 102(2)
EPC.

Composition of the Board:

Chairman: P. Alting Van Geusau
Members: G. de Crignis
W. Sekretaruk

Summary of Facts and Submissions

- I. By decision of the opposition division announced during the oral proceedings on 12 January 2007 and posted on 29 January 2007 the opposition against the European Patent No. 1 339 368, granted on application No. 01 977 040.3 was rejected.

Claim 1 as granted reads:

" An absorbent product having two longitudinal side edges (12, 13), two transverse end edges (10, 11), a longitudinal centre line and a transverse centre line, and which comprises a liquid-permeable outer layer (2), a liquid-impermeable backing layer (3) and an absorption core (4) which is located between said outer layer (2) and said backing layer (3), with said absorption core (4) comprising a first and a second absorption layer (14, 15), with the first absorption layer (14) being arranged inside of the liquid-permeable outer layer (2) and the second absorption layer (15) being arranged between the first absorption layer (14) and the liquid-impermeable backing layer (3), with the first absorption layer (14) having two longitudinal channels (16, 17), with each of the channels having an outer edge (20) closest to the corresponding longitudinal side edge (12, 13) of the product and an inner edge (21) closest to the longitudinal centre line of the product, characterized in that the two longitudinal channels (16, 17) extend through the whole of the thickness of the first absorption layer (14), in that a compressed area (22) is arranged between the longitudinal sides (12, 13) of the absorbent product mainly between the longitudinal channels (16, 17), and in that the

distance between the side edges (24) of the compressed area (22) is smaller than or equal to the distance between the outer side edges (20) of the longitudinal channels (16, 17)."

- II. The opposition division held that the subject-matter claimed complied with the requirements of the EPC. In particular, the subject-matter of claim 1 was held to be novel and to involve an inventive step when compared in particular to the prior art disclosed in documents
- E1 EP-A-0 806 194
 - E2 EP-A-0 804 915
 - E3 US-A-5 151 091
 - E4 WO-A-95/16422
- relied upon by the opponent.
- III. On 12 February 2007 a notice of appeal against this decision was filed by the opponent. The appeal fee was paid the same day, followed by the statement of grounds of appeal filed on 22 May 2007, in which the appellant substantiated the objections in respect of novelty under Article 100(a) EPC.
- IV. On 9 November 2007, the Board summoned the parties to oral proceedings pursuant to Rule 71(1) EPC and annexed a communication setting out its preliminary opinion with regard to the four documents cited with respect to the novelty objection.
- V. Oral proceedings were held on 8 April 2008. The appellant requested that the decision under appeal be set aside and that the patent be revoked. The respondent (patentee) requested that the appeal be dismissed or, alternatively, the patent be maintained

on the basis of one of auxiliary requests I to IV submitted with letter of 27 September 2007.

VI. In support of its requests the appellant essentially relied upon the following:

Lack of novelty was still at issue because each of the documents E1, E3 and E4 disclosed the subject-matter defined in claim 1 of the main request.

When considering the sanitary napkin depicted in Figure 4 of E1, the combined layers (29) and (46) represented a "single" layer equivalent to the first absorption layer defined in claim 1 of the patent in suit. The layers (29) and (46) were located between the topsheet and the backsheet and thus formed part of the absorption core as set out in claim 1 of the patent in suit.

The first absorption layer was disclosed in the patent in suit as being composed of CTMP (paragraph [0012]), which represented a typical acquisition material. Therefore, no structural difference existed when compared to the acquisition layer (29) of E1.

E3 disclosed in its Figure 2 a sanitary napkin which had a fluid repellent barrier (140) which was arranged so as to provide channels. According to claim 1 of the patent in suit the channels were not further defined, so that any kind of partitioning would meet the requirements for the channels as claimed in claim 1. The skilled person would know that each phase boundary would lead to a discontinuity in the layer leading also to a preferred direction of liquid transportation in

the z-direction. Therefore, all features of claim 1 were present in this embodiment of E3.

E4 disclosed in its Figure 2 a diaper having an absorbent layer in the form of peaks, which consisted of lightly compressed absorbent material, and the channels in-between. The material possessed absorbent capacity and thus this layer belonged to the absorbent core. Again all features as claimed in claim 1 were present.

VII. With regard to the objection of lack of inventive step, the appellant relied upon its written submissions. Therein, the closest prior art was considered to be represented by the embodiment shown in Figures 4/5 of E3. Starting from this embodiment, the subject-matter of claim 1 of the patent in suit differed in the features of a two-layered absorption body and a compressed area with specific dimensions. When taking into account the features shown in Figure 2 of E3, the feature of a high density absorbent material adjacent the backsheet was provided and this feature also represented a compressed area. Therefore, the claimed subject-matter was already suggested within the disclosure of E3 and the skilled person would arrive at the subject-matter of claim 1 without any inventive activity.

VIII. The submissions of the respondent can be summarized as follows:

The subject-matter of claim 1 was novel over E1 because in E1 the acquisition layer (29) did not correspond to the first absorption layer (14) of the patent in suit.

The acquisition layer (29) had no substantial retention functionality, unlike the absorption layer (14). According to the patent in suit, CTMP was suitable as material for the first absorption layer (14). This material was capable of taking up liquid instantaneously but also had a good ability to retain liquid (col. 3, l. 46/47 of the patent in suit). Therefore, the first absorption layer (14) necessarily represented an absorption layer which was no acquisition layer comparable to the one disclosed in E1.

The subject-matter of claim 1 was novel over E3. The fluid repellent barrier (140) shown in Figure 2 of E3 provided a multiplicity of chambers with restricted lateral flow. Z-directional flow was not mentioned and was indeed not considered, as the fluid was more apt to wick along the absorbent than along the barrier material. At the very least, there was no unambiguous disclosure of channels as claimed.

The subject-matter of claim 1 was novel over the disclosure in E4. E4 consistently referred to a liner material when addressing the peak/channel construction. The peaks were present in a multiplicity of distinct peaks and thus neither a layer-form nor the number of exactly two channels was disclosed. The whole material in the peaks was lightly compressed and thus there was no limited compressed area disclosed.

IX. With regard to the objection of lack of inventive step, the respondent also relied upon its written submissions, which can be summarized as follows:

The subject-matter of claim 1 also involved an inventive step when starting from the teaching of E3. E3 taught away from the present invention because it disclosed the use of fluid-repellent walls between absorbent compartments in order to prevent lateral liquid distribution, whereas the patent in suit referred to channels contributing actively to rapid penetration and distribution. Therefore, the skilled person would not be led to create an absorbent product in accordance with claim 1 of the patent in suit when starting from E3.

Reasons for the Decision

1. The appeal is admissible.
2. *Novelty*
3. *Novelty over E1*
 - 3.1 The feature at issue in this respect is whether the absorbent core part (60) and (acquisition) layers (29) shown in Figures 4 and 5 of E1 correspond to the first absorption layer (14) of the patent in suit.
 - 3.2 The first absorption layer (14) is disclosed in the description of the patent in suit either as consisting of CTMP (chemical thermomechanical pulp), which according to col. 3, l. 46 and col. 8, l. 14 - 19 also has a "good ability to retain liquid", or as consisting of CP (chemical pulp, see col. 3, l. 55/56). Absorption into the layer only takes place slowly (col. 3, l. 53/54) and thus the first possibility would appear

to be preferred. However, both options provide an absorbent capacity in the first absorption layer (14). Both absorption layers (14 and 15) form part of the absorption core.

3.3 In E1 the appellant considered the combination of the acquisition layer (29) with the expanding layer (46) as representing an equivalent to the first absorption layer 14 of the patent in suit.

3.4 E1 discloses that the material of the acquisition layer (29) is different from that of the expanding layer (46). The acquisition layer (29) is disclosed as preferably comprising materials that are capable of "acquiring liquid very fast and subsequently releasing it to contiguous layers with substantially **no retention capacity**" (col. 16, l. 17 to 20, emphasis added). Furthermore, the acquisition layer (29) is disclosed as being a layer **in addition to** the absorbent core (col. 15, l. 46 - 48, col. 16, l. 32/33).

3.5 Accordingly, the acquisition layer (29) of E1 represents

- a layer additionally to the absorbent core;
- a layer with substantially no retention capacity.

Both these features are different from the features of the first absorption layer (14) of the patent in suit. This absorption layer forms part of the absorption core and accordingly has to have an absorbent capacity. Thus, the subject-matter of claim 1 of the patent in suit is novel over E1.

4. *Novelty over E3*

4.1 The points in dispute are whether in E3 a feature is disclosed which corresponds to "the first absorption layer (14) having two longitudinal channels (16, 17)" and whether a compressed area is arranged in the area defined in claim 1 of the patent in suit (see also point 5.1 below).

4.2 E3 discloses in the embodiment shown in Figure 2 a number of absorbent chambers (115) which are filled with high and low density absorbent material (160, 165). The low density absorbent material (165) can be considered as equivalent to the first absorption layer (14) according to the patent in suit and the high density absorbent material (160) can be considered as equivalent to the second absorption layer (15) according to the patent in suit. Both absorbent materials are evenly distributed in all the absorbent chambers (115). The partitioning of the absorbent chambers is achieved by inserting fluid repellent barrier material (140) between the chambers (115). The partitioning elements (140) extend longitudinally of the article. However, these elements (140) do not form "channels". They are themselves neither suitable for the promotion of longitudinal flow nor for the promotion of z-directional flow since their function is limited to forming a barrier to lateral flow. Hence, the disclosure of E3 refers to partitioning elements but not to "channels" in the sense that they are disclosed in the patent in suit.

The appellant argued that the discontinuity of the layer caused by the barriers 140 gave rise to "slits"

adjacent to the barriers 140, which "slits" would function as channels for the vertical and longitudinal distribution of fluids. However, no clear and unambiguous disclosure is present in E3 that in the area between the barriers 140 and absorbent material "slits" are formed, because this depends on the lateral compression of the article, about which no information is derivable from E3.

4.3 Moreover, in E3 the high density absorbent material (160) is distributed evenly at the bottom of each chamber (115) and thus there is no limited area comprising compressed material such as claimed in claim 1 of the patent in suit. Thus, the claimed subject-matter is also novel over the disclosure of E3.

5. *Novelty over E4*

5.1 The feature at issue in this regard concerns the feature of claim 1 of the patent in suit which refers to "said absorption core (4) comprising a first and a second absorption layer (14, 15)" in combination with "the first absorption layer (14) having two longitudinal channels (16, 17)", which channels "extend through the whole of the thickness of the first absorption layer (14), in that a compressed area (22) is arranged between the longitudinal sides (12, 13) of the absorbent product mainly between the longitudinal channels (16, 17), and in that the distance between the side edges (24) of the compressed area (22) is smaller than or equal to the distance between the outer side edges (20) of the longitudinal channels (16, 17)."

Thus according to the claimed subject-matter, there has to be an uncompressed area at least between the outer side edges of the longitudinal channels and the longitudinal end edges of the absorbent article since otherwise no compressed area could be arranged between the longitudinal sides of the absorbent product mainly between the longitudinal channels. The restriction to "mainly" between the longitudinal channels can only be interpreted to mean that the compressed area is certainly arranged between the longitudinal channels, and can possibly extend a bit further, but certainly not such that the compressed area covers the whole remaining end edge area.

- 5.2 E4 refers to the concept of providing a particular liner composite for a disposable absorbent article. This liner material is liquid absorbent and is disposed in a multitude of distinct peaks which are separated from one another by a plurality of channels. The absorbent material disposed within the peaks of the liner material can be lightly compressed (page 11, l. 33/34) and can either hold the liquid and/or transfer all or a portion of the liquid to the absorbent core (page 9, l. 27 to 33). Hence, firstly, this peak "layer" does not form part of the absorbent core. Furthermore, all of these peaks are identical and thus, secondly, there is no disclosure regarding an uncompressed area at the outer side edges of the longitudinal channels. For these reasons, the subject-matter of claim 1 of the patent in suit is novel over the disclosure of E4.

6. Accordingly, the subject-matter defined in claim 1 is novel over the subject-matter disclosed in each one of E1, E3 and E4 (Article 54 EPC).

7. *Inventive step*

7.1 Starting from the embodiment shown in Figures 4/5 of E3 as the closest prior art, the subject-matter of claim 1 of the patent in suit differs by the features of a two-layered absorption body and a compressed area with specific dimensions.

Furthermore, while E3 discloses the use of fluid-repellent barriers between the absorbent compartments in order to prevent lateral liquid distribution, according to the patent in suit the channels should contribute to longitudinal distribution and penetration of the fluid.

7.2 In accordance with the object cited in the patent in suit [0006], the objective technical problem to be solved is to be seen in the avoidance of lateral leakage and the improvement of instantaneous liquid absorption characteristics of the article.

7.3 As far as the disclosure of E3 is concerned, no incentive for improvement of the instantaneous absorption characteristics of the article is anywhere hinted at in this prior art. Even when, more generally, trying to improve the absorbent capacity, the skilled person would, at the most, add high density absorbent material consistently with the embodiment shown in Figure 2 of E3 and place it at the bottom of **each** chamber in order to provide more storage capacity (see column 4, lines 53 to 55).

- 7.4 However, such an application would lead to high density absorbent material (equivalent to the compressed area of the patent in suit) being placed at the bottom of **each** chamber and thus the resultant article would not have a limited compressed area such as claimed in claim 1 of the patent in suit. Furthermore, as explained above, the fluid-repellent partitioning elements in E3 do not represent channels as defined in claim 1 of the patent in suit. According to the embodiment shown in Figures 4/5 of E3, the partitioning elements provide at the most a channel having a fluid transportation functionality only in the upper region and thus such a functionality does not extend through the whole of the thickness of the first absorbent layer as required according to claim 1 of the patent in suit. Further, according to the embodiment shown in Figure 2 of E3, the partitioning elements do not provide any channels having a liquid transportation function at all.
- 7.5 Thus, there is no suggestion available in E3 or any of the other cited documents for the claimed combination of features. Thus, the subject-matter of claim 1 of the patent in suit involves an inventive step (Article 56 EPC).
- 7.6 In conclusion, the grounds of opposition under Article 100(a) EPC do not prejudice the maintenance of the patent as granted. Hence, it has not been necessary to consider the auxiliary requests.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar

The Chairman

M. Patin

P. Alting van Geusau