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Datasheet for the decision of 28 October 2008

Case Number: T 0333/07 - 3.2.06

Application Number: 99302361.3

Publication Number: 0945537

IPC: D04H 13/00

Language of the proceedings: EN

Title of invention:
Topsheet for body fluids absorbent article

Patentee:
UNI-CHARM CORPORATION

Opponent:
The Procter & Gamble Company

Headword:
-

Relevant legal provisions:
EPC Art. 100(b)

Relevant legal provisions (EPC 1973):
-

Keyword:
"Sufficiency of disclosure (no)"

Decisions cited:
G 0009/91, T 0198/88, T 0206/83, T 0010/86

Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 0333/07 - 3.2.06

D E C I S I O N
of the Technical Board of Appeal 3.2.06
of 28 October 2008

Appellant: (Patent Proprietor)
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Decision under appeal: **Decision of the Opposition Division of the European Patent Office posted 2 January 2007 revoking European patent No. 0945537 pursuant to Article 102(1) EPC.**

Composition of the Board:

Chairman: K. Garnett
Members: G. Pricolo
G. Kadner

Summary of Facts and Submissions

I. The appeal is from the decision of the Opposition Division posted on 2 January 2007 revoking European patent No. 0 945 537, granted in respect of European patent application No. 99 302 361.3.

II. Claim 1 of the patent as granted reads as follows:

"1. A topsheet for body fluids absorbent article comprising: an upper surface intended to be placed against a wearer's skin; a lower surface underlying said upper surface; a plurality of liquid-pervious apertures extending between said upper and lower surfaces; said topsheet having an upper part defined by a first fibrous layer and a lower part defined by a second fibrous layer having a density higher than that of said first fibrous layer, and around each of said apertures, said first and second fibrous layers being integrated together so that said topsheet has a density progressively increasing from said upper surface towards said lower surface and, at least in proximity of said lower surface, has a density higher than in said second fibrous flayer."

III. The notice of opposition was based on the opposition grounds of lack of novelty and inventive step. However, the Opposition Division admitted into the proceedings the fresh ground of opposition of lack of sufficiency (Article 100(b) EPC), which had been subsequently raised by the opponent, and revoked the patent on that basis. The Opposition Division argued essentially that the patent did not mention a method of manufacturing the claimed product and did not contain instructions

enabling the skilled person to reproduce a topsheet in which, around each aperture, the density progressively increased from the upper surface towards the lower surface.

IV. The appellant (patent proprietor) filed an appeal, received at the EPO on 27 February 2007, against this decision and paid the appeal fee on the same day. With the statement setting out the grounds of appeal, received at the EPO on 10 May 2007, the appellant filed two new documents:

D14: US-A-4 758 297; and

D15: US-A-5 567 501.

V. In a communication accompanying the summons to oral proceedings pursuant to Article 11(1) of the Rules of Procedure of the Boards of Appeal, the Board expressed doubts as to whether the invention was sufficiently disclosed, in particular in view of the fact that claim 1 was not restricted to the configuration of Fig. 2 of the patent in suit, but encompassed other configurations which a skilled person would not know how to reproduce.

VI. In response to the preliminary opinion of the Board, the appellant filed with letter dated 19 September 2008 amended claims forming the basis for first to seventh auxiliary requests.

VII. Oral proceedings, at the end of which the decision of the Board was announced, took place on 28 October 2008.

The appellant requested that the decision under appeal be set aside and that the patent be maintained as granted, alternatively on the basis of the first to seventh auxiliary requests filed with the letter dated 19 September 2008, and in the event of either its main or its first auxiliary requests being allowed, the case be remitted to the Opposition Division to consider the opposition grounds of lack of novelty and inventive step.

The respondent (opponent) requested that the appeal be dismissed.

During the oral proceedings the appellant filed a microscope photograph of an aperture in a topsheet said to be in accordance with the invention.

VIII. Claim 1 according to the first auxiliary request includes the following feature in addition to the features of claim 1 as granted:

"the apertures each having a cross-section which progressively decreases [from] the upper surface towards the lower surface". (Word in bracket added by the Board, as being obviously intended)

Claim 1 according to the second auxiliary request includes the following features in addition to the features of claim 1 as granted:

"wherein a lower surface of said first fibrous layer and an upper surface of said second fibrous layer are intermittently bonded together by means of hot melt adhesive, by mechanically entangling them or by means

of a heat sealing technique at locations other than at said apertures".

Claim 1 according to the third auxiliary request additionally states that "the apertures have a diameter in the range of 0.5 to 3 mm" and claim 1 according to the fourth auxiliary request states that "the centres of adjacent apertures are separated by between 0.7 and 10 mm".

Claim 1 according to the fifth, sixth and seventh auxiliary requests corresponds to claim 1 according to the second, third and fourth auxiliary requests, respectively, with the addition of the above feature introduced in claim 1 in accordance with the first auxiliary request.

IX. The arguments of the appellant in support of its requests can be summarized as follows:

It was common general knowledge that if fibres were heated to beyond their melting point, they would then melt and fuse together, whilst if they were heated to a temperature somewhat lower than the melting point, the fibres would soften. If the fibres were deformed in the softened state, then they would retain the deformation upon cooling. Furthermore, the skilled person was familiar with methods and apparatuses for making apertures in fibrous sheets, in particular by the use of hot needles or punches as shown by the documents

D2: JP-A-2 251 654;

D5: EP-A-214 608;

D11: EP-A-80 383;

which had been cited in the proceedings before the Opposition Division, and by the newly cited documents D14, D15. The skilled person, having read the patent in suit and with particular reference to Figure 2, would thus immediately realise that pushing a tapered needle, or punch, through first and second fibrous layers could produce a topsheet as shown in Figure 2. Furthermore he would realise that if those needles, or punches, were heated such as to soften the fibres, the fibres would be inclined to retain their displaced shape on retraction of the needles. Accordingly, the skilled person would be able to produce a sheet in accordance with the present invention by placing a low density fibre layer upon a high density fibre layer and inserting heated tapered needles or punches to produce the apertures shown in Figure 2. The vertical displacement would displace the fibres vertically downwards and laterally inwards and thus, because of the tapering shape of the apertures, would compress the fibres downwardly into the inclined wall of the aperture. This would inherently produce apertures in which the density increased progressively from the upper surface towards the lower surface.

X. In response to these submissions, the respondent essentially argued as follows:

The patent in suit was silent about how to make apertures having a density gradient as required by claim 1 of the patent in suit. The prior art documents cited by the appellant did not mention apertures with a

density gradient and thus did not give any useful indication to a skilled person in that respect. The patent in suit was silent about any operating parameters for making the apertures. In particular there was no mention that the temperature, which according to the appellant's submission had to be carefully selected, would play a role. Furthermore, the temperature might only play a role in a case where thermoplastic fibres were used, but the claim was not restricted to such fibres. It also encompassed topsheets with apertures having a configuration different from the tapered configuration shown in Fig. 2, e.g. cylindrical apertures for which it was even more obscure how a density gradient could be obtained. Finally, in order to reproduce the invention, the skilled person would need to know how to measure the density along the aperture for determining whether there was a progressive increase of density. The patent in suit contained no indication in that respect. The microphotograph filed by the appellant during the oral proceedings showed a confused mass of fibres and confirmed that in the absence of instructions about how to measure the density, it was not possible to determine whether there was a progressive increase of density around the aperture.

Reasons for the Decision

1. The appeal is admissible.

2. In the statement of grounds of appeal, the appellant contested the admissibility of the late ground of opposition under Article 100(b) EPC in view of the fact

that lack of sufficiency had already been overcome during examination. This objection was no longer pursued during the oral proceedings before the Board.

2.1 As already explained in the communication of the Board accompanying the summons to oral proceedings, the Opposition Division has a discretionary power (Article 114(1) EPC) to consider a ground raised by the opponent after the expiry of the time limit laid down in Article 99(1) EPC (see G 9/91, point 6), irrespective of whether the corresponding objection has already been overcome during examination, because opposition is an independent procedure following the grant procedure (see e.g. T 198/88, point 2.1). Since in the Board's view the Opposition Division correctly exercised its discretion by introducing the late ground of opposition in view of its relevance (and indeed the patent was revoked on that basis), there is no reason to overrule the discretionary decision of the Opposition Division.

3. It is not disputed that the patent in suit is silent about any method for producing a topsheet for body fluids in accordance with claim 1. As regards the issue of sufficiency of disclosure (Articles 100(b) and 83 EPC) it has thus to be assessed whether the skilled person would be capable, using his common general knowledge to supplement the information contained in the application (see e.g. T 206/83), of reproducing the claimed topsheet without any inventive effort over and above his ordinary skills (see e.g. T 10/86).

4. Claim 1 of all requests requires that around each aperture the first and second fibrous layers be integrated together so that the topsheet has a density progressively increasing from the upper surface towards the lower surface and, at least in the proximity of the lower surface, has a density higher than in the second fibrous flayer. As acknowledged by the appellant during the oral proceedings, this feature requires that the progressive increase of the density takes place along the walls of the apertures (see also col. 3, lines 38 to 44, of the patent in suit).

5. The patent in suit discloses a single embodiment of the topsheet according to the invention. Fig. 2 shows a sectional view of this topsheet. The tapered shape of the apertures shown in Fig. 2 suggests that, upon producing the apertures, fibres have been displaced both vertically and laterally.

5.1 The appellant essentially submitted that the skilled person would recognize that such apertures were produced by means of a tapered needle or punch, heated to a temperature sufficient to soften, but not melt, the fibres, such that the aperture would retain its shape on retraction of the needle or punch.

5.2 The Board concurs with the appellant's view that hot needling and punching are well-known processes for producing apertures in fibrous sheets and that the skilled person knows that fibres can be either softened or melted by the application of heat. This is in fact confirmed by the documents cited by the appellant. However, even with this knowledge at hand, the recognition that apertures such as shown in Fig. 2 of

the patent in suit, where the density progressively increases along the walls of the apertures, can only be produced by a specific tool having a specific temperature would require efforts beyond the ordinary skills in the art. There is in particular no indication, either in the patent documents or from common general knowledge, that the progressive increase of density along the walls of these apertures would require any heating of the fibres. In fact, looking at the tapered shape of the apertures in Fig. 2, the skilled person would consider that the progressive increase of density is due to a progressive increase of the degree of compression of the fibres around the apertures. Thus, he would concentrate essentially on finding a suitable perforating tool, and in particular on determining a suitable shape and suitable operating parameters thereof (e.g. a cylindrical rather than conical tool, a punch or a needle or an embossed roll, a suitable retraction speed, etc.), allowing a progressive increase of the degree of compression to be obtained. He would however not immediately consider applying heat, as heat is normally applied for fusing, rather than compressing, fibres.

5.3 Moreover, the prior art documents cited by the appellant do not disclose apertures in which the density increases along their walls. These documents however confirm the above assertion that heat is normally used for fusing fibres.

D2, see Fig. 2, discloses tapered pores obtained by hot needling, whereby thermally fused areas (4) on the inside surface of the pores are produced by the heat of the needle (see page 5 of the English translation,

first full paragraph). The presence of thermally fused areas speaks against a progressive increase of the density on the inside surface of the pores. In fact, by the appellant's own admission, thermally fused areas should be avoided when producing the topsheet according to the invention, by means of a careful selection of the temperature of the needle or punch.

D5 relates to a method of perforating a fibrous web by means of heated pins (see claim 18). The pins may have a tapered point (see Figs. 6-10); however, it is the diameter of the shaft which determines the diameter of the aperture formed (page 16, last paragraph). The pin penetrates the web and enters a matching hole of larger diameter (see Fig. 12), thereby producing an aperture of generally cylindrical shape and apparently uniform density along its wall.

D11 relates to perforating a fibrous web by hot roll calendering or hot needling (see the paragraph bridging pages 13 and 14). D11 discloses that apertures formed by hot needling have walls generally much less fused than those of apertures made by hot roll calendering (see page 14, lines 1,2). However, D11 positively teaches that the walls should be fused also in case of hot needling, whereby a progressive increase of density is not obtained. The microscope photograph of Fig. 5, referred to by the appellant, does not give any indication about the density along the walls of the apertures as it is a top view.

D14 discloses a method of making a laminated product using hot pins (see claim 1), wherein the hot pin melts at least a film of material provided in face-to-face

contact with a fibrous layer (see col. 3, l. 25-30 and l. 23, 24; 61, 62). A progressive increase of the density along the apertures in D14 is thereby excluded.

D15 mentions known processes for making apertures (col. 1, line 19 ff.) but is wholly silent about the density along the walls of apertures.

6. Furthermore, the Board agrees with the respondent that a premise for reproducing the invention is that the skilled person is capable of ascertaining the progressive increase of density along the walls of the aperture.

6.1 In the decision under appeal (see the paragraph bridging pages 3 and 4), the opposition Division stated that "since *claim 1 relates to relative density, there is no need for a specific method*" for measuring the density. This is in principle correct. However, the claim does not merely relate to a difference of density between two discrete zones but requires a progressive increase of density, i.e. the density must be seen to increase progressively along the walls of the apertures.

6.2 During the oral proceedings the appellant submitted a microscope photograph of an aperture in a topsheet said to be in accordance with the invention. In the photograph, the single fibres are clearly visible. They extend mainly horizontally but also vertically (up and down) to form a confused mass of interlaced fibres. Although an upper layer (first fibrous layer) less dense than the lower layer (second fibrous layer) can be vaguely discerned, the thickness of the two layers is not for example of an order of magnitude greater

than the thickness of the fibres such as to allow it to be clearly determined whether or not there is a progressive increase of density in each of the layers. Moreover, it is not apparent how it can be determined whether, for the shown topsheet, the requirement of claim 1 that the topsheet has, at least in proximity of the lower surface thereof, a density higher than in the second fibrous layer (lower layer), is met.

6.3 Therefore, the Board takes the view that, in the absence of any instructions in the patent in suit about how to determine whether the density progressively increases from the upper surface towards the lower surface around each aperture, the skilled person is not capable of ascertaining whether a given topsheet meets the requirements of claim 1. Accordingly, even if the skilled person would consider finding a suitable process for reproducing the claimed topsheet by trial and error, with the aim of arriving at success through the evaluation of initial failures, he would not be capable of making any evaluation and thus would not be capable of arriving at a suitable process. Therefore for this reason also he would not be capable of reproducing a topsheet according to claim 1.

7. In view of the above the Board comes to the conclusion that the skilled person is not capable of reproducing the invention. As the proprietor acknowledged, this finding applies to all requests, since the feature concerning a progressive increase of the density is present in the independent claim of each request.

8. Therefore, the decision of the Opposition Division to revoke the patent for lack of sufficient disclosure (Article 100(b) EPC) was well-founded, and is hereby confirmed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

M. Patin K. Garnett