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D E C I S I O N
of 9 June 2004

Case Number: T 0476/02 - 3.2.6

Application Number: 94107422.1

Publication Number: 0682927

IPC: A61F 13/15

Language of the proceedings: EN

Title of invention:
Shield against absorbent particle loss in absorbent products

Patentee:
THE PROCTER & GAMBLE COMPANY

Opponents:
SCA Hygiene Products AB
Paul Hartmann AG

Headword:
-

Relevant legal provisions:
EPC Art. 54, 56

Keyword:
"Novelty (main request) - no"
"Inventive step (auxiliary request) - no"

Decisions cited:
-

Catchword:
-

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Case Number: T 0476/02 - 3.2.6

D E C I S I O N
of the Technical Board of Appeal 3.2.6
of 9 June 2004

Appellant: (Proprietor of the patent)
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Decision under appeal: **Decision of the Opposition Division of the European Patent Office posted 15 March 2002 revoking European patent No. 0682927 pursuant to Article 102(1) EPC.**

Composition of the Board:

Chairman: P. Alting van Geusau
Members: H. Meinders
J. H. Van Moer

Summary of Facts and Submissions

I. European Patent No. 0 682 927, granted on application No. 94 107 422.1, was revoked by the Opposition Division by decision announced on 31 January 2002 and posted on 15 March 2002. It based the revocation on the finding that the subject-matter of claim 1 of the patent as amended in the opposition proceedings according to the main request and the second auxiliary request lacked inventive step. The first auxiliary request was not admitted under Rule 71a(1) EPC.

Of the documents cited in opposition the following are of relevance for the present decision:

D1: US-A-5 009 653

D13: EP-A-0 214 608

D14: US-A-3 967 623.

II. The Appellant (Patentee) both filed a notice of appeal against this decision and paid the appeal fee on 14 May 2002. On 23 July 2002 the grounds of appeal were filed by fax.

III. In a communication dated 12 May 2004 the Board referred to:

D15: US-A-3 929 135,

mentioned as "incorporated by reference" in D1, this document giving further details about the apertured

topsheet material used in the absorbent product disclosed in D1.

IV. Oral proceedings before the Board were held on 9 June 2004.

The Appellant requested that the decision under appeal be set aside and that the patent be maintained as amended, according to a main request or an auxiliary request, filed at the oral proceedings before the Board.

The Respondents 01 and 02 (Opponents 01 and 02) requested dismissal of the appeal.

V. Claim 1 of the patent according to the **main request** of the Appellant reads:

"An absorbent product (1) comprising a topsheet (2) having liquid passage ways; a liquid impervious backsheet (3); and an absorbent core interposed between said topsheet (2) and said backsheet (3); said core comprising dry particles (5), said particles being capable of permeating in their dry state through said topsheet along said liquid passage ways; said absorbent product further comprising a permeation blockage means (8) being joined to either or both of said topsheet (2) and said backsheet (3) of said absorbent product (1); said absorbent product being characterised in that said permeation blockage means (8) restricts permeation of said particles to said liquid passage ways; said permeation blockage means (8) being placed between said core (4) and said topsheet (2); in order to shield either said particles (5) from said liquid passage ways or said liquid passage ways from said particles (5),

and said permeation blockage means (8) extends beyond the periphery of said core (4) but not beyond the periphery of said backsheet (4) and said permeation blockage means (8) is substantially co-extensive with said backsheet (3) and said topsheet (2), and said topsheet (2) and said backsheet (3) are coextensive and enclose said core (4), said topsheet (2) and said permeation blockage means (8) and backsheet (3) being joined to each other by an endless seal (7, 9) along a common path following the periphery of said permeation blockage means (8)".

Claim 1 of the **auxiliary request** has the following additional feature when compared with claim 1 of the main request:

"and said topsheet (2) has a central region which comprises said liquid passage ways; and said topsheet (2) has an external region which is substantially impermeable to said particles (5); said permeation blockage means (8) extending beyond the periphery of said central region".

VI. In support of its request the Appellant argued essentially as follows:

Main request:

D14 could not affect the novelty of the product of claim 1 of the main request as the articles shown in figures 2 and 3 of D14 relating to two different embodiments of which the features could not simply be combined. Further, the manner in which the topsheet disclosed in D14 was produced resulted in the

perforations also being present in the base web, which thus could not prevent particles from moving through the passage ways in the topsheet. Regarding the passage ways there was, in any case, no indication given as to their size, so there was no indication that without the web the particles would normally pass through the topsheet passage ways. Finally, in D14 there was no disclosure of an endless seal joining together the topsheet, web and backsheet, as the section of figure 3 did not include the outer periphery of the product.

D1 could not affect the novelty of the product of claim 1 of the main request either as the web functioning as permeation blockage means was not connected to the topsheet, as claimed. According to figure 2 there was a staggered connection of the different sheets: the topsheet was connected to the backsheet and the wipe acquisition layer; the wipe acquisition layer was connected to the topsheet, backsheet and the permeation blockage means and the permeation blockage means was connected only to the backsheet and the wipe acquisition layer. Further, in D1 there was no disclosure that the seal was endless and that it went all around the periphery.

Auxiliary request:

Neither D14 nor D1 were detrimental to the novelty of the product of claim 1 according to this request as they did not show a separate central region with the passage ways.

The skilled person would not apply the teachings of D13 to the product of D1, as the former concerned a wrap-

around topsheet for a sanitary napkin, whereas the latter concerned a layered sanitary napkin with an endless seal around the periphery. The latter construction in any case was difficult to produce on the present fast production machines.

VII. The Respondents argued as follows:

Main request:

D14 was already cited in the opposition proceedings and was novelty destroying for the product of claim 1. The embodiment of figure 3 of this document was a further development of the general product shown in figures 1 and 2, thus involved also the general features of the peripheral connection between the different sheets in the product as shown in these drawings and discussed in D14. Further, the permeation blocking web 35 would be involved in the seal between the backsheet and the topsheet, which went around the periphery of the pad.

D1 would also destroy novelty of the subject-matter of this claim, as the adhesive connecting each of the topsheet, wipe acquisition sheet and permeation blockage web successively to the backsheet would form a seal connecting also the topsheet to the permeation blockage web. Further it was to be noted that in column 8, lines 1 to 13 of D1 it was clearly indicated that this seal was around the entire periphery of the product. This was also derivable from the drawings.

Auxiliary request:

D14 also disclosed the central region with the passage ways, as in figure 2 it could be seen that there was a distance between the passage way closest to the longitudinal edge and the longitudinal edge itself. The apertures were therefore concentrated in a central region. Therefore the subject-matter of claim 1 of the auxiliary request lacked novelty when compared with the disclosure of D14.

Taking D1 as closest prior art it would be obvious for the skilled person to solve the problem of receiving the concentrated flow of liquids in the center of the absorbent product by incorporating the teaching of D13. Figure 16 of D13 and the description relating to it disclosed a central perforated region in the topsheet, distanced from all sides of the product, corresponding with the location of the perineal area of the wearer. Such an obvious combination would deprive the subject-matter of claim 1 of the auxiliary request of any inventive merit.

Reasons for the Decision

1. The appeal is admissible.

2. *Consideration of D14*

2.1 In the decision under appeal it was mentioned in the facts and submissions that the Patentee objected to the admission of D14 in the opposition proceedings as its late filing constituted an abuse of procedure. The

reasons for the decision under appeal state that D14 was less relevant than D1 and D2 regarding the question of novelty and had not been taken into consideration during the oral proceedings.

The Board notes in this respect that the oral proceedings in opposition took place on 31 January 2002 and that the summons to oral proceedings had set the ultimate date pursuant to Rule 71a EPC for filing submissions at one month prior to the oral proceedings, i.e. at the latest 31 December 2001.

D14 was filed before that date, on 21 December 2001 (with letter of 20 December 2001), as a document additional to D13 showing that topsheets with a perforated central region were well known. Thus D14 would be relevant for the claimed feature of the topsheet having a central region comprising the passage ways and an external region which is substantially impermeable to the particles, which feature figured in amended independent claim 2 as filed by the patentee in response to the oppositions.

The filing of D14 must therefore be seen as a response to an amendment of the claimed subject-matter and therefore cannot be considered an abuse of the proceedings.

2.2 In the written appeal proceedings the discussion regarding this specific property of the topsheet concentrated on D13, the document which had been taken into consideration by the opposition division in the reasons of the decision under appeal regarding lack of inventive step of the auxiliary request. This request

had been submitted by opponent 02 for the first time with the above mentioned letter received on 21 December 2001.

The Board notes that claim 1 of the third and fourth auxiliary requests valid up to the oral proceedings before the Board involves that specific feature. The present single auxiliary request, filed at the oral proceedings before the Board, is based on the third auxiliary request in question and involves that feature as well.

Thus the Appellant cannot have been surprised by the fact that D14 was discussed by Respondent 02 in the oral proceedings. In view of the fact that D14 is indeed relevant for the discussion of novelty of claim 1 according to the main request (see below), that it is a short document of only two and a half pages length and that the Appellant did not maintain its request for it to be left out of consideration nor argued that it required an interruption for further study, the Board has taken D14 into consideration for its decision.

3. *Amendments*

Claim 1 of the main request is based on claim 1 as granted and has been further limited in that the features of granted claims 3, 4, 5, 7, 8 and 9 have been added thereto. These claims were also present in that form in the originally filed patent application. Claim 1 of the auxiliary request is further limited by the addition of the features of granted claim 6, which corresponds to originally filed claim 6.

The fact that the topsheet, backsheet and permeation blockage means are joined to each other by an endless seal is derivable from page 4, second paragraph of the original application documents.

The requirements of Article 123(2) and (3) EPC are thus fulfilled.

4. *Main request - novelty (Article 54 EPC)*

4.1 D14 discloses an absorbent product (10) comprising a topsheet (facing sheet 13) having liquid passage ways (20, 26); a liquid impervious backsheet (backing sheet 11); and an absorbent core (panel 12) interposed between said topsheet (13) and said backsheet (11); said core comprising dry particles (column 4, lines 32, 33), said particles being capable of permeating in their dry state through said topsheet along said liquid passage ways (otherwise there would be no need for the retaining screen function of web (35) mentioned in column 4, lines 32 to 35); said absorbent product further comprising a permeation blockage means (web 35) being joined to the topsheet (13) of said absorbent product (10); the permeation blockage means (35) restricting permeation of said particles to said liquid passage ways; said permeation blockage means (35) being placed between said core (12) and said topsheet (13) (see figure 3) in order to shield either said particles from said liquid passage ways or said liquid passage ways from said particles, said permeation blockage means (35) extending beyond the periphery of said core (12) (see figure 2) but not beyond the periphery of said backsheet (11) (see column 4, lines 66 to 68) and

said permeation blockage means (35) is substantially co-extensive with said backsheet (11) and said topsheet (13) (see below, point 4.5), and said topsheet (13) and said backsheet (11) are coextensive and enclose said core (12), said topsheet (13) and said permeation blockage means (35) and backsheet (11) being joined to each other by an endless seal (see figure 1 and column 5, lines 8 to 10) along a common path following the periphery of said permeation blockage means (35).

Thus all features of the product of claim 1 of the main request are known from D14.

4.2 The Appellant argued that the absorbent pad shown in figure 3 did not necessarily comprise the constructional features of the pad shown in figures 1 and 2, as these concerned a different embodiment.

The Board comes to a different conclusion. The disclosure of D14 concerns the different ways in which a topsheet for an absorbent pad can be designed. The topsheet should be relatively soft and comfortable, should permit passage of body fluids to the central absorbent core (column 1, lines 12 to 17) and should retain relatively short fibers linters as well as superabsorbent particles, if any, within the pad (column 4, lines 27 to 33). These features are discussed in column 2, line 18 to column 4, line 40 and are illustrated with the help of figures 1 and 2 showing the entire absorbent pad and figure 2 in particular one specific arrangement of the topsheet. The rest of the disclosure of D14 (as of column 4, line 41) concerns **further** embodiments of the invention disclosed up to then (see column 2, lines 10 to 15,

column 4, line 58 and column 5, line 11) and discusses how the topsheet can be designed alternatively. In view of the features discussed these are all meant to provide the same advantages as the first discussed embodiment. The only valid conclusion is therefore that the other constructional features of the pad have remained the same.

Therefore the features concerning the seal used for connecting topsheet, backsheet and permeation blockage means together discussed for the embodiment of figure 3 apply equally for the embodiments involving the topsheet as shown in figures 1 and 2.

4.3 The Appellant further argued that in the embodiment of figure 3 the permeation blockage means 35 was used as a carrier web for the molten polymeric mass of the topsheet during its production and would be damaged and/or perforated as well when producing the slits for letting through the body fluids. Thus it would no longer retain the superabsorbent particles.

The Board, however, notes that the holes in the topsheet can also be produced by including soluble particulate material in the polymeric mass prior to web formation, which can be leached out, or by striking a plurality of random electric arcs therethrough (column 3, line 67 to column 4, line 2). In the opinion of the Board this manner of producing the liquid passage ways does not necessarily affect the web 35 used as a carrier web.

4.4 The Appellant further argued that there was no information on the porosity of the topsheet nor of the

web 35, thus one could not know whether the particles would normally go through the perforations 20, 26 and whether they would be restricted by the web 35.

The Board finds, however, that the indication in column 4, lines 27 to 33 regarding the fibrous surfaces on one **or both** sides helping in retaining e.g. particulate superabsorbent material is equally valid for the embodiment of figure 3 involving a fibrous outer surface of the topsheet combined with the thin web 35 of absorbent tissue between the topsheet and the core. Thus it will be apparent to the skilled person that the web must be capable of retaining the particulate material.

4.5 The Appellant finally argued that D14 did not disclose the topsheet, backsheet and the permeation blockage means as being joined to each other by an endless seal along a common path.

In this respect the Board notes that the embodiment of figure 3 involves a perforated topsheet which is produced using the web 35 as a carrier sheet for the polymeric mass of the topsheet, thus if the backsheet 27 is fused to the perforate topsheet according to column 5, lines 8 to 10, i.e. about the periphery of the pad, this must involve all three materials and thus according to figure 1 would necessarily be an endless seal along a common path.

4.6 For the above reasons the subject-matter of claim 1 of the main request is not novel in view of D14 (Article 54 EPC). This request is therefore to be refused.

5. *Auxiliary request - Novelty (Article 54 EPC)*

5.1 The Respondents argued that the product of claim 1 of the auxiliary request was not novel in view of D14. From figure 2 showing a section of the absorbent pad it could be derived that there were no apertures in the topsheet up to the fused seal of the topsheet, backsheet and permeation blockage means. Thus these perforations were concentrated in a central region as claimed.

5.2 The Board cannot concur with this opinion. According to claim 1 the "central region" has a "periphery" (beyond which extends the permeation blockage means 31), thus it is to be understood as a region which has a certain distance from its periphery to the entire periphery of the absorbent product. From figure 2 of D14 that aspect is not derivable. In view of the fact that the apertures in the web are produced by leaching out soluble particulate material or by striking a plurality of **random** electric arcs therethrough (see column 3, line 68 to column 4, line 2) it would have required specifically mentioned production steps to provide this material or these arcs only in the central regions of the individual products later produced with this web as a topsheet. Such indications are not present, thus it must be assumed that the apertures are not limited to a central region as defined above.

5.3 The product of claim 1 of the main request is also not novel in view of D1.

Considering D1, this document discloses a sanitary napkin (10), which is an absorbent product, comprising a topsheet (25) having liquid passage ways (83); a liquid impervious backsheet (16); and an absorbent core (34) interposed between said topsheet (25) and said backsheet (16); said core comprising dry particles (37), said particles being capable of permeating in their dry state through said topsheet along said liquid passage ways (the tissue 31 is preventing the particles 37 from coming into contact with the skin, thus the apertures in the topsheet must be large enough to let the particles through, see column 8, lines 9 to 13); said absorbent product further comprising a permeation blockage means (31) being joined to either or both of said topsheet (25) and said backsheet (16) of said absorbent product (10); wherein said permeation blockage means (31) restricts permeation of said particles to said liquid passage ways (see column 8, lines 9 to 13); said permeation blockage means (31) being placed between said core (34) and said topsheet (25) (see figure 2) in order to shield either said particles (37) from said liquid passage ways or said liquid passage ways from said particles (37), and said permeation blockage means (31) extends beyond the periphery of said core (34) but not beyond the periphery of said backsheet (16) and said permeation blockage means (31) is substantially co-extensive with said backsheet (16) and said topsheet (25), and said topsheet (25) and said backsheet (16) are coextensive and enclose said core (34), said topsheet (25) and said permeation blockage means (31) and backsheet (3) being joined to each other by an endless seal in the form of a glue line (see the outer dotted lines in figures 4

and 5) along a common path following the periphery of said permeation blockage means (31).

5.4 The Appellant argued that the connection between the topsheet, backsheet and permeation blockage means was not a single endless seal, but a staggered seal: the permeation blockage means (31) was glued to the backsheet (16), but not to the topsheet (25) as there was another layer of material (wipe acquisition sheet 28) between the topsheet (25) and the permeation blockage means (31).

The Board considers that D1 refers to the connections between the topsheet and the backsheet, between the permeation blockage means and the backsheet and between the topsheet and the wipe acquisition layer as being made by lines of adhesive or by spray-gluing (see column 8, lines 1 to 13, 34 to 36 and 62 to 66 and column 10, lines 12 to 34). However, in view of the thickness of the materials used and the pressure exerted on these connections during the production process this adhesive will not stop short of the edges of the wet-laid tissue or the wipe acquisition layer, but will form a layer of adhesive having a width on the backsheet spanning from the outer edge of the topsheet to the point where the backsheet and the wet-laid tissue diverge, when seen in the sectional drawing of figure 2 of D1.

It is further mentioned in column 8, lines 2 to 5 that "those parts of the wet-laid tissue 31 which extend beyond the edges 52 and 55 of the absorbent core 34 are associated with the barrier sheet 16". In view of the (dotted) line 32 in figures 4 and 5 designating the

edge of this tissue and going around the whole periphery of the absorbent core the connection between the wet-laid tissue 31 as permeation blockage means and the backsheet will thus form an endless peripheral seam of adhesive, connecting topsheet, wipe acquisition layer, permeation blockage means and backsheet together. Thus, contrary to what is stated in the patent in suit (column 1, lines 44 to 51), there is a shield at the edge of the wet-laid tissue 31 which prevents the superabsorbent particles from migrating from the absorbent core 34 towards the passage ways in the topsheet 25, around that edge.

5.5 In view of the above conclusion D1 is also novelty destroying for the subject-matter of claim 1 of the main request. However it is not so for claim 1 of the auxiliary request as the absorbent product disclosed therein does not have a central region comprising the liquid passage ways, nor the external region which is substantially impermeable to the particles, nor the permeation blockage means extending beyond the periphery of the central region.

6. *Inventive step (Article 56 EPC)*

6.1 For the discussion of inventive step of the product of claim 1 of the auxiliary request the Board considers D1 to constitute the closest prior art, being mentioned in the patent in suit as relevant prior art, relating to a sanitary napkin and solving already some of the problems mentioned in the patent in suit: shielding at the edge of the wet-laid tissue and preventing particle migration (patent in suit, column 1, lines 44 to 51).

6.2 The sanitary napkins as disclosed in D1 have a topsheet consisting preferably of an apertured formed film. Suitable is e.g. the film disclosed in D15, "incorporated by reference" in D1 (see column 9, lines 8 to 28). According to D15 such apertured formed films are produced by perforating the film with a pin mould (column 6, lines 57 to 63).

6.3 A apparent disadvantage with such films which are perforated as a whole, i.e. the apertures are distributed over the whole surface of the sanitary napkin, is that rewetting of the skin may occur in areas where this constitutes a nuisance. This in turn may lead to leakage along the (longitudinal) edges of the napkin.

This problem is solved by providing the sanitary napkin with the passage ways in a central region and an external region which is impermeable to liquids, the permeation blockage means extending beyond the periphery of the central region, according to claim 1 of the auxiliary request.

6.4 However, the skilled person faced with the problems discussed above finds the solution thereto in D13. There it is disclosed that for solving this problem the apertures in the topsheet of a sanitary napkin can be provided in a central region, not extending the full length of the napkin and staying clear from its longitudinal sides (see figure 16). The advantages of such an arrangement are clearly explained (see page 22, lines 1 and 2), thus providing the skilled person with sufficient incentive to apply it to the napkin disclosed in D1.

6.5 The Appellant argued that the skilled person would not apply the teaching of D13, as it would necessitate larger passage ways on this reduced surface to accommodate the same flow of liquids.

The Board cannot subscribe to this argumentation, as the skilled person is expected to be aware of the necessity to maintain sufficient flow capacity and not reduce it. It does not require inventive skills to calculate the necessary increase in diameter of the passage ways. As there is in any case a permeation blockage means, increasing the diameter of the passage ways will not create an additional problem of letting through more of the superabsorbent particles.

6.6 The Appellant further argued that the product with the seams as disclosed in D1 was difficult to produce on the present fast production machines and therefore the skilled person would be dissuaded to apply the teaching of D13 to it.

The Board wishes to note that the speed of production limiting the practicality of sealing the sheets constituting the product of D1 does not play a role in the present discussion of inventive step as claim 1 relates to a product and not to a method of production. Thus the technical features of the product itself count, which, according to the Board are all derivable from D1, except the feature of the apertured central region, etc. as discussed above.

D13 neither contains indications that would discourage the skilled person of applying its teaching. In the

production line he would merely have to replace the roll with apertured film topsheet as disclosed in D1 by a roll with the topsheet perforated in regions according to the teaching of D13.

6.7 Thus the subject-matter of claim 1 of the auxiliary request results from the obvious application of the teaching of D13 to the napkin known from D1. It therefore does not involve inventive step (Article 56 EPC). The auxiliary request is therefore also to be refused.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

G. Nachtigall P. Alting van Geusau