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D E C I S I O N
of 10 July 1997

Case Number: T 0717/96 - 3.2.4

Application Number: 87303008.4

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Language of the proceedings: EN

Title of invention:
Fabrication of laminated absorbent sheets

Patentee:
PAPER-PAK PRODUCTS, INC.

Opponent:
Papierwerke Halstrick GmbH

Headword:
-

Relevant legal provisions:
EPC Art. 54, 56

Keyword:
"Inventive step (yes)"

Decisions cited:
T 0002/83, T 0056/87, T 0005/81

Catchword:
-

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Case Number: T 0717/96 - 3.2.4

D E C I S I O N
of the Technical Board of Appeal 3.2.4
of 10 July 1997

Appellant: (Opponent)
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Respondent: (Proprietor of the patent)
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Decision under appeal: Interlocutory decision of the Opposition Division of the European Patent Office posted on 17 June 1996 concerning maintenance of European patent No. 0 241 263 in amended form.

Composition of the Board:

Chairman: C. A. J. Andries
Members: R. E. Gryc
M. Lewenton

Summary of Facts and Submissions

I. The appellant (opponent) lodged an appeal, received at the EPO on 1 August 1996, against the interlocutory decision of the Opposition Division, dispatched on 17 June 1996, which maintained the patent No. 0 241 263 in an amended form.

The appeal fee was paid simultaneously and the statement setting out the grounds of appeal was received on 9 October 1996.

II. Opposition was filed against the patent as a whole and based on Article 100(a)EPC.

The Opposition Division held that the grounds for opposition cited in Article 100(a) EPC did not prejudice the maintenance of the patent in an amended version, having regard to the following documents:

D1: DE-A-2 061 064,
D2: DE-U-7 046 539 and
D3: DE-B-1 163 491.

III. In his statement setting out the grounds of appeal, the appellant contended that D3 concerned mainly absorbent products in general and related to disposable diapers only as an example. He pointed out that the layers of the pad known from D3 were bound together in the same way as according to the invention and that the binding areas were also protected against moisture by the plastified thermoplastic adhesive which migrates into the absorbent material.

The appellant drew also attention to the teaching of D2 describing layers assembled by pressure bonded and glued spots in an absorptive pad. The appellant was of

the opinion that it was not inventive for the man skilled in the art to replace the glue used in the pad of D2 by a thermoplastic adhesive according to the invention.

IV. In a communication pursuant to Article 11(2) of the rules of procedures of the Boards of Appeal forwarded to the parties on 17 June 1997, the Board expressed the provisional opinion that the subject-matter of the independent claims was new and inventive. The Board considered that the state of the art closest to the invention was disclosed in D2.

With regard to D1, the Board clearly stated that the technical field and the problem to be solved were quite different from those according to the invention.

The board pointed also out that D3 was not concerned with the problem of the delaminating effect of the absorbed liquid since the pad was not composed with several overlaid absorbent layers.

At the end of the communication, it was clearly stated that the topic "inventive step" would be discussed in particular at the oral proceedings.

V. In a letter dated 30 June 1997 however, the appellant informed the Board that he would not attend the planned oral proceedings and that he maintained his request for revocation of the patent. With respect to the aforementioned provisional opinion of the Board, no comments were made.

VI. Oral proceedings took place on 10 July 1997.

Although he was the sole party to request an oral proceedings and although duly summoned, the appellant did not appear. In accordance with the provisions of Rule 71(2) EPC the proceedings were continued without him.

The respondent (patentee) gave some explanations in order to clarify the independent claims. In particular, he explained that in Claim 1, the sentence:

"... when using said sheet for meat packaging."

should not be interpreted as limiting the scope of the method claim to food packaging but that this particular use was only cited to indicate the preferred use of the absorptive sheet manufactured according to the invention.

The respondent contended that the layers of the pad described in D2 were bonded by a combination of pressure and a normal glue i.e. a water-soluble glue which does not seal the pressure bonded spots against the delaminating effect of the absorbed liquids.

The respondent also pointed out that the sheet described by D2 did not comprise a polyethylene outer layer, i.e. an impervious layer, but a backing layer which is permeable to moisture.

After having considered the requests of the parties, i.e. "revocation of the patent" for the appellant (see letters dated respectively 8 October 1996 and 30 June 1997) and "rejection of the appeal" for the respondent, the Board decided to dismiss the appeal, i.e. to maintain the patent in the amended version accepted by the first instance.

VII. The wordings of the independent claims 1, 9 and 10 read as follows:

- Claim 1:

"The method of bonding laminations of an absorptive sheet (10) by assembling a plurality of absorptive cellulose layers (18) and at least one polyethylene outer layer (14) in close proximity to each other as said laminations of said sheet (10) and permanently bonding said layers together at selected spots by selectively applying pressure through the thickness of the sheet against a backing member to develop a plurality of pressure bonded spots (22), characterized by the steps of applying a thermoplastic material (24) in liquid form at locations corresponding to said pressure bonded spots so that the liquid material (24) permeates the laminated layers in the immediate vicinity of said spots to render same impervious to moisture absorbed in the sheet whereby protecting same against delamination due to the absorbed moisture when using said sheet for meat packaging."

- Claim 9:

"An absorbent pad produced by the method of any one of claims 1-8."

- Claim 10:

"An absorbent sheet laminated of a plurality of individual absorbent tissue layers (18) with at least one cover layer (14) of polyethylene, the sheet having respective pluralities of pressure-bonded spots (22) arranged in juncture lines (20) extending along said sheet with each bonded spot (22) formed of the tissue layers (18) and the cover layer (14) being compressed tightly together in a localized region to form a

permanent compression bond, and characterized by the compression bond formed at an individual spot (22) being sealed against degradation from absorbed moisture by a thermoplastic compound (24) in solid form."

Reasons for the Decision

1. *Admissibility of the appeal*

After examination the appeal has been found to be admissible.

2. *Amendments (Article 123 EPC)*

The set of claims of the modified version accepted by the first instance differs from the set of claims of the patent as granted in that the granted apparatus claims 10 and 11 have been deleted and granted Claim 12 renumbered as Claim 10. The introductory part of the description as granted (see: column 1, lines 6 to 8) has also been modified accordingly.

These modifications do not add subject-matter extending beyond the content of the application as filed and do not extend the protection conferred by the claims. Therefore, they fulfill the requirements of Article 123(2) and (3) EPC and are allowable.

3. *Novelty (Article 54 EPC)*

The invention differs from the state of the art disclosed in D1 and D3 respectively in that it concerns in particular a method of bonding together a plurality of absorptive layers by pressure adhesion bonds and an absorbent pad or sheet made respectively by such a method or similar instead of either a method to connect

cardboard, paper or the like with a plastic stem (see D1) or a method for anchoring a flocky fill inside a disposable absorbent pad (see D3) and the resulting products.

The invention differs also from the state of the art described by D2 in that a cover layer of polyethylene is used and that the pressure bonded spots are not glued with an usual glue but sealed by a thermoplastic material, the function of which is in particular to preserve said pressure bond spots against degradation from the moisture absorbed by the pad.

Therefore, in comparison with the teachings of D1, D2 and D3, the subject-matter of Claims 1, 9 and 10 is new (Article 54 EPC).

4. *The closest state of the art*

In accordance with the respondent, the Board considers that D2 discloses the closest state of the art since this document describes an absorbent laminated sheet made of a plurality of individual absorbent tissue layers permanently bonded together at selected spots by, in particular, applying pressure.

The invention differs from the manufacturing process of the sheet of D2 mainly by the addition of at least one polyethylene outer layer and of a water impervious bond-preserving thermoplastic material at locations corresponding to the pressure bonded spots to protect the laminated layers against delamination due to the moisture absorbed by the pad.

5. *Problem and solution*

Taking into account the above-mentioned differences between the closest state of the art and the subject-matter of Claim 1, 9 and 10, the problem to be solved as objectively determined appears to be to prevent a direct access of the liquids to the absorbent layers, to reinforce the pressure adhesion bonds of the absorptive sheet of D2 (see the patent specification: column 2, lines 41 to 44) and to avoid delamination of its laminated layers when the layers become wet (see column 3, lines 3 to 5) without having to materially change the construction of the pad or the overall production process (see column 3, lines 31 to 36). The Board is satisfied that the invention as claimed in Claims 1, 9 and 10 brings effectively a solution to this problem.

6. *Inventive step (Article 56 EPC)*

6.1 The questions to be answered as regards the inventive step are not only whether the skilled person examining the prior art in the light of his general common knowledge would be provided with enough indications so that he could arrive at the solution claimed in Claim 1, but moreover whether, starting from the closest state of the art (i.e. the absorbent sheet of D2 and the method to manufacture it), he would follow the teachings of the prior art to modify said known sheet in the direction of the invention in expectation of the improvement he was searching (see Decision T 2/83, OJ EPO 1984, 265).

It should also be kept in mind that the assessment of inventive step must consider solely the limited teaching of the prior art documents. An interpretation of the documents as influenced by the problem solved by

the invention while the problem was neither mentioned or even suggested must be avoided, such an approach being merely the result of an a posteriori analysis (see decision T 05/81, OJ EPO 1982, 249).

Moreover, in line with the established case law of the Boards of Appeal (see in particular decision T 56/87, OJ EPO 1990, 188), when investigating inventive step it should also be borne in mind that the technical disclosure in a prior art document should be considered in its entirety, as it would be done by a person skilled in the art and that it is not justified arbitrarily to isolate parts of such document from their context in order to derive therefrom a technical information, which would be distinct from the integral teaching of the document.

6.2 D1 concerns a method for connecting parts of cardboard, paper or the like, by means of a flowable plastic material forced through compressed overlaid parts to form when hardened a plastic stem.

Moreover the overlaid layers are not bonded together by the compressed spots where the plastic is injected but by the plastic stems forced through the layers, the function of the plastic material being to constitute the bonds themselves when hardened and not to reinforce and seal pressure bonds as according to the invention.

D3 concerns a method for anchoring a flocky fill inside a disposable absorbent pad which is composed with a flocky material such as fluffed woodpulp. In the absence of laminated overlaid layers, D3 is not concerned with the problem of the delaminating effect of the absorbed liquids. In the pad of D3, the function of the adhesive which has migrated into the absorbent material is to anchor the flocky fill to the facing sheet and not to seal the compressed strips. Contrary

to the pressure bonds of the sheet according to the invention which are sealed to be kept out of contact with moisture, the compressed strips of the pad of D3 have a greater moisture conducting power than the rest of the layers and are used to distribute moisture throughout the pad.

6.3 Starting from the absorbent sheet of D2 where the overlaid absorbent layers are assembled together in particular by compression bonds, the skilled person faced with the problem of delamination of the layers due to the delaminating effect of the absorbed liquids would not be inclined to consult D1 which concerns a quite different technical field and where moistening of the assembled layers is not even contemplated.

The skilled person would also not be inclined to consult D3 which discloses an absorbent pad that has no laminated structure and is, therefore, not faced with the problem of delamination.

If, in spite of all, the skilled person would nevertheless take into consideration the teachings of these two prior art documents, he would find neither an indication about a water impervious bond-preserving medium nor clues to use a sealing medium to preserve the pressure bonded spots against degradation due to the effect of moisture.

6.4 The above argumentation was already communicated to the parties as the Board's provisional opinion (see above section IV: the communication of 17 June 1997). Since the appellant did not give any counterarguments or even comments, the Board sees no reason to change its mind.

Consequently, the Board considers that to improve the sheet and the process to obtain it known from D2 according to the teaching of claims 1 and 10 does not follow plainly and logically either from the prior art or from the general knowledge of a skilled person and implies an inventive step within the meaning of Article 56 EPC.

7. Therefore the invention as described and claimed in the version accepted by the first instance meets the requirements of the EPC and the patent can be maintained on this basis as requested by the respondent.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

N. Maslin C. Andries

R.G.

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