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D E C I S I O N
of 10 February 2006

Case Number: T 0015/03 - 3.3.09

Application Number: 94401168.3

Publication Number: 0684132

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Language of the proceedings: EN

Title of invention:

Multi-ply tissue paper product and method for manufacturing

Patentee:

Georgia-Pacific Nederland B.V.

Opponent:

SCA Hygiene Products AB

Headword:

-

Relevant legal provisions:

EPC Art. 56

Keyword:

"Main request: inventive step (no)"

"Auxiliary request: inventive step (yes)"

Decisions cited:

-

Catchword:

-



Case Number: T 0015/03 - 3.3.09

D E C I S I O N
of the Technical Board of Appeal 3.3.09
of 10 February 2006

Appellant and Respondent: SCA Hygiene Products AB
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Decision under appeal: Interlocutory decision of the Opposition
Division of the European Patent Office posted
6 November 2002 concerning maintenance of
European patent No. 0684132 in amended form.

Composition of the Board:

Chairman: P. Kitzmantel
Members: A. T. Liu
B. Günzel

Summary of Facts and Submissions

- I. Opposition was filed against European patent No. 684 132 under Article 100(a) EPC, on the ground of lack of novelty and lack of inventive step.
- II. At the oral proceedings before the opposition division on 25 September 2002, the patentee submitted amended claims as bases for a main and an auxiliary request.

Claim 1 of the main request read as follows:

"A process for manufacturing an absorbent tissue paper product having a peripheric edge, with multiple webs attached by a bond close to said edge, characterized in that it comprises the following processing stages:

- applying glue to a first web of absorbent tissue paper according to a gluing pattern, said gluing pattern having predetermined dimensions to form a bond only along the edge of the finished paper product,
- applying a second web of absorbent tissue paper, superimposed on said first web so that a portion of said glue transferred to said second web partially sets and forms a bond between said webs, to form a laminate joined together according to said gluing pattern,
- directing said laid laminate to an embossing station,

- embossing said laminate by introducing said laminate into a nip defined by a pair of rollers of said embossing station according to an embossing pattern along the edge of the finished paper product,
- cutting said laminate into said paper product."

The sole Claim of the auxiliary request read as follows:

"A process for manufacturing an absorbent tissue paper product having a peripheric edge, with multiple webs attached by a bond close to said edge, characterized in that it comprises the following processing stages:

- applying glue to a first web of absorbent tissue paper according to a gluing pattern, said gluing pattern having predetermined dimensions to form a bond only along the edge of the finished paper product,
- applying a second web of absorbent tissue paper, superimposed on said first web so that a portion of said glue transferred to said second web partially sets and forms a bond between said webs, to form a laminate joined together according to said gluing pattern,
- directing said laminate to a printing group comprising one or more printing units, and printing on one of its surfaces,
- directing said printed laminate to an embossing station,

- embossing said laminate by introducing said laminate into a nip defined by a pair of rollers of said embossing station according to an embossing pattern along the edge of the finished paper product,

 - cutting said laminate into said paper product."
- III. At the conclusion of the oral proceedings, the opposition division announced its interlocutory decision to maintain the patent in amended form according to the auxiliary request. The subject-matter of Claim 1 of the main request was held to lack an inventive step.
- IV. The decision of the opposition division, dispatched on 6 November 2002, made particular reference to the following documents:
- D1: US-A-3 673 060
 - D2: GB-A-363 699
 - D6: US-A-3 672 949
- V. Against this interlocutory decision of the opposition division, an appeal was lodged by the opponent on 23 December 2002 and by the patentee on 6 January 2003, the Statements of the grounds of appeal being filed on 3 March 2003 and 10 March 2003, respectively.
- VI. In the course of the appeal, the appellant - opponent (hereinafter referred to as the opponent) made reference to a further prior art document D7 (GB-A-631 849) in support of its objection of lack of inventive step.

VII. Oral proceedings before the board took place on 10 February 2006 in the absence of the opponent.

VIII. The arguments of the appellant - patentee (hereinafter referred to as the patentee) can be summarised as follows:

- Concerning the main request, the technical problem to be solved with respect to the closest prior art teaching, D1, was to keep the strength of the tissue while improving its suppleness.
- The solution proposed in Claim 1 involved the use of adhesive for making ply-bonding only along the edge of the finished paper product.
- In D1, the core of the invention was the differential stretching between the webs/plies in association with spot bonding throughout the whole surface of the webs whereby on relaxation of the tension the lesser-stretched web buckled slightly. There was no incentive for the skilled person to suppress this feature from the process of D1 when solving the present technical problem.
- The teaching of D2 was to form a pressure bond along the margin. It did not teach the application of adhesive along the margin.
- Concerning the auxiliary request, the technical problem was additionally to avoid shadow-printing. This would happen when during the printing process the ink migrated through the first ply to reach the

underlying ply and the webs then became displaced with respect to each other.

- To solve this technical problem, it was essential to first form a laminate, then direct the laminate to a printing unit, before directing the printed laminate to an embossing station.

- D6 only mentioned printing as one of the last optional stages. Moreover, when implemented last, it would damage the structure of the embossed laminate.

- D7 was directed to machines for printing and embossing wall papers or the like. In contrast to tissue paper, such heavy materials were not affected by the problem of shadow-printing.

IX. The arguments of the opponent can be summarised as follows:

- With respect to D1, the process of Claim 1 according to the main request only solved the technical problem of providing a further process for manufacturing soft paper products.

- In D2, this problem was solved by ply-bonding only along the edge of the finished paper product, either by mechanical pressure or by using an adhesive.

- The additional step of printing according to the sole Claim of the auxiliary request was obvious in view of D6 or D7.

X. The patentee requested that the decision under appeal be set aside and that the patent be maintained on the basis of the main request filed on 25 September 2002. As an auxiliary request, the patentee requested that the opponent's appeal be dismissed.

The opponent requested that the patentee's appeal be dismissed, that the decision under appeal be set aside and that the patent be revoked.

Reasons for the Decision

Main request

1. Inventive step

1.1 Claim 1 according to the patentee's main request is directed to a method for manufacturing a multi-ply, border embossed paper product such as a napkin (patent specification, paragraphs [0001] and [0002]). This method essentially comprises the steps of:

- (i) applying glue to a first web of absorbent tissue paper according to a gluing pattern,
- (ii) said gluing pattern having predetermined dimensions to **form a bond only along the edge** (emphasis added) of the finished paper product,
- (iii) superimposing this web with a second web of absorbent tissue paper to transfer a portion

of the glue, letting it partially set and form a bond between the webs,

- (iv) embossing the resulting laminate along the edge of the finished product, and
- (v) cutting the laminate into the finished product.

1.2 Closest prior art

1.2.1 The board agrees with the parties that D1 comprises the closest prior art teaching. D1 is directed to the manufacture of paper napkins from adhesively laminated crêped tissue products (column 1, lines 3 to 7). In this process, adhesive is deposited on a first web, which is then overlaid with a second web. A portion of the adhesive is thereby transferred to the second web. After the adhesive has partially set, pressure is applied on the adhesive-bearing region to bond the two webs. Finally, the laminated webs are embossed about their periphery and may ultimately be severed into individual napkins (column 1, lines 45 to 49; column 4, lines 13 to 67 and Example). It is thus undisputed that D1 discloses a process comprising steps corresponding to features i) and iii) to v) of Claim 1.

1.3 Technical problem

In the Statement of the grounds of appeal, the patentee first argued that "starting from the teaching of D1, the problem to be solved would be how to improve suppleness of the product of D1, and keep strength" (see item 3). The opponent, however, expressed strong

doubts that this technical problem (requiring the achievement of said improvements) was indeed solved by the method of Claim 1 (see letter of reply dated 25 June 2003, item 2). The patentee did not file any comments let alone proof to refute these legitimate doubts. Thus, in agreement with the patentee's statement submitted at the oral proceedings, the board considers that the technical problem to be solved with respect to D1 is just to provide a further method for making napkins as supple as those according to D1.

1.4 Solution

- 1.4.1 In order to obtain a strong, yet soft and flexible laminated product, D1 teaches differential stretching of the webs prior to bonding them into the laminate and relaxing the webs after bonding (column 1, lines 65 to 74 and column 3, lines 33 to 53). As an alternative, Claim 1 proposes a method essentially characterised in that glue is applied to form a bond only along the edge of the finished paper product (see Claim 1: item II and point 1.1, feature ii)). The board accepts that the above indicated technical problem is effectively solved by the method as claimed. This is not in dispute (see letter of opponent's reply dated 25 June 2003, item 3).

At this point, the board also wishes to remark that the patentee has not submitted and the board has no reason to presume that the application of adhesive as taught in D2 interacts with the remaining features of Claim 1 in any particular way.

1.5 Obviousness

1.5.1 As is apparent from the cited prior art (cf D2) the production of paper napkins having a soft "feel" has been a concern in the art since at least the 1930's. In those days, this technical problem was solved by superposing continuous strips of soft tissue and pressing them in a narrow strip along their edges and transversely across the strips at intervals. As a result, the strips are caused to adhere along the pressed portions but allowed elsewhere to move on each other (see D2, page 1, lines 19 to 29 and lines 52 to 61). Thus, D2 teaches that the soft feel of the napkins is obtained by pressure bonding the sheets only around the edges, leaving the centre part open.

In addition, D2 explicitly mentions that "no adhesive need be used as the pressure alone will cause the sheets to adhere sufficiently" (page 2, lines 7 to 9). In the board's judgment, the skilled person will infer the following pieces of information from this statement:

(vi) that the use of adhesive was common practice at the filing date of D2 and

(vii) that its use was at least implicitly contemplated in D2, should for some reason or another the pressure bonding turn out to be insufficient.

In consequence, the board holds that the skilled person has an incentive for applying the teaching of D2 to solving the technical problem of manufacturing a soft feel paper product. By doing so, he would form a bond

along only the edge portions of the finished paper product. To secure the bond, he would consider the option of applying glue as also suggested in D2. It is self-evident that, in this case, the glue must be deposited in a pattern such that the bond will be formed along the edge only. As a consequence, the board finds that the subject-matter of Claim 1 lacks an inventive step, being a direct and obvious combination of the teaching according to D2 with that of D1.

1.5.2 The board cannot accept the patentee's argument that "there is no information on how D2 could teach the application of adhesive along the margin" (see statement of the grounds of appeal, item 2). As observed above, D2 expressly teaches that the superposed sheets should be caused to adhere in a narrow strip only around the edges. The portions of the sheets within the pressure-bonded areas are not fastened together but left so that they may move slightly one upon the other to give the soft feel of a well-used fabric handkerchief (page 1, lines 43 to 51 and page 2, lines 24 to 29). Thus, the teaching of D2 as a whole clearly implies that, if adhesive is needed, it should be applied only at the edge portions, otherwise the sheets can no longer be moved against each other.

1.5.3 The board does not ignore the patentee's argument that the softness is obtained in D1 by differential stretching during bonding to give a quilted effect to the resulting napkin (column 1, line 62 to column 2, line 1). In the board's judgment, however, D1 teaches differential stretching only in connection with the adhesive pattern extending intermittently over the

entire surface of the first web (column 1, lines 67 to 72 and column 2, lines 19 to 20), because it is this pattern that, after relaxation of the differential stretching, leads to the formation of the cushion-like quilted appearance. In the absence of differential stretching there is no need for such an adhesive pattern requiring bonded areas within the web laminate; in fact, such a pattern would be undesirable because adhesive in the centre portions would impart harshness to the tissue. Conversely, where the adhesive is only applied around the edges, leaving the centre surface open, there is no reason to resort to the differential stretching for imparting bulk to the laminate.

- 1.5.4 The patentee's arguments are thus not sufficient to reverse the finding of lack of inventive step (see item 1.5.1 above). The main request is thus refused since the subject-matter of Claim 1 does not meet the requirements of Articles 52 and 56 EPC.

Auxiliary request

2. Amendment

As compared to Claim 1 of the main request, Claim 1 of this request additionally stipulates "directing said laminate to a printing group comprising one or more printing units, and printing on one of its surfaces" before the laminate is directed to the embossing station (see point II above). It is common ground that the amended claim complies with the requirements of Article 123(2) and (3) EPC (see minutes of the oral proceedings before the opposition division of

25 September 2002, page 2, item 5 and decision under appeal, page 3, item 2).

3. Novelty

The novelty of the process of present Claim 1 is also not in dispute. The reasons for this will be clear from the discussion of inventive step below.

4. Inventive step

4.1 Technical problem

The board can accept the patentee's submission that, with respect to the closest prior art teaching according to D1, the technical problem to be solved is to avoid shadow-printing in the manufacture of a paper product with desired printed and embossed patterns (see also patent in suit, column 1, lines 40 to 44).

4.2 Solution

To solve the above technical problem, it is proposed in the sole Claim to incorporate the printing step between the bonding stage and the embossing stage (see item II above). The board finds it plausible that, when the webs are bonded, the plies are prevented from displacement against each other during the subsequent printing step. Furthermore, it is also plausible that the embossed structure is better retained when the embossing stage takes place after the printing stage, since it is then no longer possible for a subsequent printing to damage the embossed structure. The board therefore accepts that the present technical problem,

namely to avoid shadow-printing while maintaining the desired print and embossed patterns of the paper products, is effectively solved with the essential characterising feature of the present Claim.

4.3 Obviousness

It is undisputed that, of the documents cited in opposition proceedings, only D6 mentions the use of a printing unit. In this process, the webs are first embossed then laminated with the use of adhesive. It is important that the webs be embossed separately in a particular way so as to ensure non-nesting of the webs, thereby imparting bulk to the individual webs and increasing the absorbency of the resulting laminate (column 2, line 27 to column 3, line 3). After the webs are glued, the finished laminate may be wound on a conventional winder. In addition thereto, it is stated in D6 that the laminate may be "passed to other process stations as desired, such as a printing unit for printing a design on the product" (column 6, lines 53 to 56). Thus, the skilled person can infer from D6 that printing is envisaged as an option, but only after the webs are first embossed then glued together.

Moreover, for the production of crêped tissue products, both D6 and D1 use similar equipment in which the embossing and gluing stations are linked in a particular way. The difference is that in D6, embossing takes place before gluing whereas in D1, it is afterwards (compare Figure 2 of D6 and Figure 2 of D1 and the corresponding parts of the description). Consequently, if the skilled person would consider printing the tissue products of D1, and turn to D6 for

a suggestion, he would also implement the printing step last, after the laminate is embossed. The skilled person would have no incentive to incorporate the printing step between the embossing and gluing stages, as proposed in the present Claim.

- 4.3.1 D7 is a document directed to machines for embossing and printing, applicable to wall paper, textiles, plastics and other materials in web-form (page 1, lines 7 to 19 and Claim 1). As observed by the patentee in the letter dated 18 July 2003, such webs as envisaged in D7 are heavy and strong materials, in contrast to a web of absorbent tissue paper as used in the patent in suit. Therefore, the skilled has no reason to take into consideration the teaching of D7 for solving the present problem of avoiding shadow-printing.

The opponent has refrained from making submissions to refute the patentee's arguments. Under these circumstances and given the state of the art and its evaluation outlined above, the board concludes that the opponent has failed to establish that the subject-matter of the sole Claim of the auxiliary request is an obvious combination of prior art teachings, including that of D7.

Order

For these reasons it is decided that:

The appeals are dismissed.

The Registrar:

The Chairman:

G. Röhn

P. Kitzmantel