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**D E C I S I O N**  
**of 10 March 2006**

**Case Number:** T 0842/04 - 3.3.06

**Application Number:** 96938411.4

**Publication Number:** 0864014

**IPC:** D21H 27/02

**Language of the proceedings:** EN

**Title of invention:**

Absorbent paper sheet marked with pattern simulating watermark  
and process for the marking thereof

**Patentee:**

Georgia-Pacific France

**Opponent:**

SCA Hygiene Products AB

**Headword:**

Simulated watermark/GEORGIA-PACIFIC

**Relevant legal provisions:**

EPC Art. 54, 56, 83

**Keyword:**

"Sufficiency (yes) "

"Novelty over cited documents of the prior art (yes) "

"Inventive step (no): obvious optimization of a prior art  
process"

**Decisions cited:**

T 0761/93

**Catchword:**

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Case Number: T 0842/04 - 3.3.06

**D E C I S I O N**  
of the Technical Board of Appeal 3.3.06  
of 10 March 2006

**Appellant:** SCA Hygiene Products AB  
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**Decision under appeal:** Interlocutory decision of the Opposition  
Division of the European Patent Office posted  
6 May 2004 concerning maintenance of European  
patent No. 0864014 in amended form.

**Composition of the Board:**

**Chairman:** P. Krasa  
**Members:** L. Li Voti  
J. Van Moer

## Summary of Facts and Submissions

I. The present appeal is from the decision of the Opposition Division concerning the maintenance in amended form of the European patent no. 0 864 014, relating to an absorbent paper sheet marked with a pattern simulating a watermark.

The patent in suit had been granted with a set of 17 claims, independent claims 1 and 6 thereof reading as follows:

"1. An absorbent tissue paper sheet comprising one or more plies, each having a basis weight of approximately 12 to approximately 70 g/m<sup>2</sup> and a part of the surface of which is marked, characterized in that:

- the said surface part is marked by an impressed pattern simulating a watermark, said impression being applied to one side of the sheet, the opposite side corresponding to said impression being plane,

- said marked surface being smooth, glossy and translucent, and

- said marked surface comprising at least one marked unit region wherein the ratio of the thickness of said marked unit region to the area of said marked unit region is less than 0.027 mm/mm<sup>2</sup>."

"6. A process for marking with an impressed pattern resembling a watermark a surface part of an absorbent tissue paper sheet comprising one or more plies each having a basis weight of approximately 12 to 70 g/m<sup>2</sup>, the marked surface part comprising at least one marked unit region wherein the ratio of the thickness of said marked unit region to the area of said marked unit

region is less than  $0.027 \text{ mm/mm}^2$ , said process consisting in deforming, under stress, the said sheet by at least one pass between a hard engraved roll and a receiving roll having a surface hardness of more than Shore-D 40, the specific pressure exerted on the marked surface being at least  $14.7 \text{ MPa}$  ( $150 \text{ kg/cm}^2$ ) and the linear marking speed being at least  $50 \text{ m/min}$ ."

Dependent claims 2 to 5 and 7 to 17 relate to particular embodiments of the claimed tissue paper sheet and of the process of marking, respectively.

II. In its notice of opposition the Opponent sought revocation of the patent on the grounds of Articles 100(a), because of lack of novelty and inventive step of the claimed subject-matter, and of Article 100(b) EPC.

The following document was referred to *inter alia* in support of the opposition:

(2): WO-A-9406623.

III. In its decision the Opposition Division found that

- the skilled person would have been able to carry out the claimed invention by following the teaching of the patent in suit; the claimed invention was thus sufficiently disclosed;

- the alleged prior use had not been convincingly proven and could thus not be admitted into the proceedings;

- the wording "absorbent tissue paper" did not distinguish the claimed subject-matter from the products of document (2) which were also able to absorb liquids;

- document (2) disclosed tissue paper differing from that claimed in the patent in suit only insofar as it does not mention that the ratio of the thickness of said marked unit region to the area of said marked unit region is less than  $0.027 \text{ mm/mm}^2$ ;

- since this distinguishing feature did not amount to an inventive contribution to the claimed process or product, the claimed subject-matter according to the main request (claims as granted) lacked an inventive step in the light of the teaching of document (2);

- the wording of claim 1 according to the first auxiliary request contravened the requirements of Article 123(2) EPC;

- since document (2) related to the marking of tissue paper made of long papermaking fibres, the skilled person would have not considered this document in looking for a solution to a technical problem regarding the marking of tissue paper made of short papermaking fibres;

- since document (2) was the only document cited in regard to inventive step, the subject-matter of the claims according to the second auxiliary request involved an inventive step; therefore these claims complied with the requirements of the EPC.

The set of claims according to this second auxiliary request differed from the set of claims as granted only insofar as claims 1 and 6 specified that the absorbent tissue paper sheet **"is based on short papermaking fibres"**.

- IV. Appeals were filed against this decision by both the Opponent (hereinafter Appellant-Opponent) and the Patent Proprietor (hereinafter Appellant-Proprietor).

The Appellant-Proprietor filed under cover of the letter dated 21 February 2006 seven sets of claims as first to seventh auxiliary request, respectively.

Oral proceedings were held before the Board on 10 March 2006.

During oral proceedings the Appellant-Proprietor maintained as first auxiliary request the second auxiliary request filed under cover of the letter of 21 February 2006, i.e. the set of claims found by the Opposition Division to comply with the requirements of the EPC, and filed an amended second auxiliary request consisting of 16 claims; all the other auxiliary requests were withdrawn.

The amended second auxiliary request differs from the main request insofar as claims 1 and 5 (former claim 6) specify that **the absorbent tissue paper sheet comprises at least two plies joined together by the impressed pattern simulating a watermark.**

V. The Appellant-Opponent submitted in writing and orally *inter alia* that

- it was not possible for the skilled person to carry out the invention without undue burden throughout its entire scope;

- moreover the description did not contain sufficient information enabling the skilled person to obtain a product as claimed after initial failure;

- the claimed invention was thus not sufficiently disclosed;

- the claimed subject-matter lacked novelty over the prior use of the products Cell-Tork Naturelle no. 74.30.00 or 74.30.10;

- the wording "absorbent tissue paper" did not distinguish the products of the patent in suit from those of document (2);

- the simulated watermark of a product obtained by following the teaching of document (2) was not distinguishable from that obtained by following the process of the patent in suit;

- the claimed subject-matter lacked thus novelty over the teaching of document (2);

- document (2) already solved the technical problem underlying the invention claimed in the patent in suit, i.e. the provision of a simulated watermark of any form or size as a decorative pattern on a tissue paper;

- the teaching of document (2) was not confined to the treatment of paper based on long papermaking fibres but encompassed the treatment of paper based on short papermaking fibres;

- moreover, it was obvious for the skilled person to obtain a simulated watermark by using bigger engraved rolls and also by not coating these rolls with a liquid as required in document (2), if a reduction of the paper strength could be accepted;

- the claimed subject-matter thus lacked an inventive step.

VI. The Appellant-Proprietor submitted in writing and orally *inter alia* that

- the claimed process and its essential features were thoroughly described in the patent in suit;

- the claimed process could be considered as an evolution of the known "press-marking" process;

- the limits of the essential features of the claimed process were known to the skilled person and were specific for this technical field; it was thus not undue burden for the skilled person to adjust these features in order to optimize the results and obtain a product as claimed;

- the claimed process was thus sufficiently disclosed;



- document (2) did not relate to absorbent tissue paper, i.e. sanitary or domestic tissue paper, but to tissue paper based on strong long papermaking fibres suitable as tea and coffee filters which had been prepared by means of papermaking machines not suitable for obtaining absorbent tissue paper;

- furthermore, the "hot embossing" process described in document (2) was a "press marking" process not leading necessarily to a watermark and limited to the formation of strips; the size of the marking obtained by the process of document (2) was also not given in this document;

- the claimed subject-matter was thus novel over the teaching of document (2);

- the alleged prior use had not been convincingly proven.

As regards inventive step, the Appellant-Proprietor submitted that document (2) related to tissue paper made of strong long papermaking fibres which were not suitable for absorbent tissue paper;

- therefore, document (2) related to a different technical field and was not relevant for the evaluation of inventive step;

- moreover, document (2) did not contain any suggestion that a process as claimed in the patent in suit could be useful for obtaining a watermark on tissue paper;

- furthermore, the prior art did not contain any information that the watermark images could bind together different plies and the quality of the product obtained by following the teaching of the patent in suit was better than one obtained by a conventional "press-marking" process since, e.g., the points of the marking binding several plies of the tissue paper were wider apart;

- the claimed subject-matter thus involved an inventive step.

VII. The Appellant-Proprietor requests that the decision under appeal be set aside and the patent be maintained as granted or, in the alternative, on the basis of the first auxiliary request, labelled second auxiliary request in the letter of 21 February 2006, or of the second auxiliary request submitted during the oral proceedings.

The Appellant-Opponent requests that the decision under appeal be set aside and that the patent be revoked.

## **Reasons for the Decision**

1. *Appellant-Proprietor's main request (claims as granted)*

1.1 Article 83 EPC

Claim 1 relates to an absorbent tissue paper sheet comprising one or more plies, a part of the surface of which is marked by an impressed pattern simulating a watermark, said impression being applied to one side of

the sheet, the opposite side corresponding to said impression being plane, said marked surface comprising at least one marked unit region wherein the ratio of the thickness of said marked unit region to the area of said marked unit region is less than  $0.027 \text{ mm/mm}^2$ .

Such a product can be prepared, according to the teaching of the patent in suit, by the process of claim 6, i.e. by deforming, under stress, a tissue paper sheet by at least one pass between a hard engraved roll and a receiving roll having a surface hardness of more than Shore-D 40, the specific pressure exerted on the marked surface being at least 14.7 MPa and the linear marking speed being at least 50 m/min.

As explained by the Appellant-Proprietor during oral proceedings, this process of preparation is distinguished from the known "embossing" process insofar as the opposite side of the marked tissue paper is maintained plane and does not deform thus increasing the thickness of the paper. Furthermore, it is distinguished from the known "press-marking" process insofar as the hard engraved rolls used for marking the tissue surface are bigger and lead to a ratio of the thickness of said marked unit region to the area of said marked unit region of less than  $0.027 \text{ mm/mm}^2$  (see also the patent in suit, page 2, lines 12 to 15 and 40 to 49; page 6, lines 35 to 37).

As can be seen in the table on page 6 of the patent in suit, the depth of the marking in all these three processes is similar and the area marked by following the process of the patent in suit 3C is greater than that obtained by the "press-marking" process 3A, the

ratio of the thickness of said marked unit region to the area of said marked unit region being conversely smaller than by press-marking (see page 6, lines 16 to 33).

As confirmed by the Appellant-Proprietor, the hardness of the receiving rolls used in the claimed process, as well as the specific pressure and the linear marking speed used during the process, are conventional in this technical field and do not distinguish the claimed process from the known marking processes.

Moreover, the receiving rolls, which can possess some elasticity, must necessarily have such hardness that the paper does not deform permanently as in the "embossing" process.

Since the essential features of the described process were specific for this technical field and thus known to the skilled person in the technical field of marking, the skilled person would have been aware, in the Board's judgement, of the limits to be selected for the rolls hardness in order to obtain a sufficient marking without deformation of the paper as in an "embossing" process as well as of the limits to be selected for the specific pressure and the linear marking speed.

Furthermore, the Board finds that the information given in the patent in suit suggests how to modify the claimed process in case of occasional failures, i.e. in case the resulting product does not comply with all the features of claim 1. The description suggests, for example, to use elevated temperatures or to humidify the tissue paper sheet or to control the linear marking

speed (page 9, lines 17 to 21 and 51 to 52; page 10, lines 28 to 34).

Therefore, the Board finds that the skilled person, by following the teaching of the patent in suit and using his common general knowledge in the technical field of paper marking at the priority date of the patent in suit, could carry out the claimed invention in its entire scope without undue burden.

Therefore, the Board agrees with the first instance decision that the claimed invention is sufficiently disclosed.

#### 1.2 Novelty

As regards the novelty of the claimed subject-matter over document (2), the Board finds that this document fails to indicate if the marking obtained by following the process described therein has the required ratio of the thickness of said marked unit region to the area of said marked unit region.

In fact, this feature depends, inter alia, on the particular dimension of the engraved rolls, which are not disclosed in document (2).

The Board thus agrees with the first instance decision that the claimed subject-matter is novel over this document (see point III above).

Since the patent has to be revoked on other grounds there is no need to examine the admissibility of the alleged prior use.

1.3 Inventive step

1.3.1 The claimed invention and, in particular, the subject-matter of claim 6, relates to a marking process for finished absorbent tissue paper wherein certain parts of one side of a tissue paper sheet are compressed, thus forming compact areas and significantly reducing the thickness of the sheet in these areas without forming a corresponding relief on the opposite side. The pattern marked on the tissue paper simulates a watermark, i.e. a pattern visible when viewed against a contrasting background, the marked area being smooth, glossy and translucent (page 2, lines 3 to 11; page 3, lines 5 to 6 and 30 to 33; page 4, lines 34 to 37; page 6, lines 49 to 50).

The technical problem addressed to in the description of the patent in suit regards the production on a finished tissue paper of an aesthetic pattern and, precisely, of a simulated watermark of any desired size and form by mechanical means and without modifying the thickness of the sheet by removal of material and without using synthetic components (page 4, lines 22 to 45; page 6, lines 45 to 48).

1.3.2 The Board notes that document (2) relates to the production of an aesthetic pattern by mechanical means on a finished tissue paper without removal of material (see page 1, lines 1 to 3 and 11 to 20 as well as page 10, lines 1 to 7).

The obtained aesthetic patterns are smooth, translucent, with reduced opacity and thus glossy and visible as a contrast against a contrasting dark background. Thus they are simulated watermarks as defined in the patent in suit (page 1, lines 26 to 32; page 3, line 1 to first full paragraph below table 2; page 5, lines 18 to 22; page 10, lines 1 to 7).

Document (2) deals thus, at least in part, with the same technical problem addressed to in the patent in suit.

The Board finds also that the teaching of document (2) is not confined to the marking of tissue paper made of long papermaking fibres such as that used for tea bags and coffee filters (which, however, also must absorb liquids to a certain extent as found in the first instance decision), but describes a process applicable to tissue paper having any desired fibre composition and which have been prepared by any known means (claim 1, page 3, last full paragraph; page 5, first and third full paragraphs).

In fact, the teaching of a document cannot be considered to be confined only to the embodiments indicated as preferred or specifically exemplified but extends to all the subject-matter that a skilled person would understand the teaching refers to.

Therefore, in the present case, document (2), referring generally to tissue paper of any desired composition, concerns also absorbent tissue paper based on short papermaking fibres such as sanitary and domestic paper, as specifically addressed to in the patent in suit.

The Board thus takes document (2) as the most reasonable starting point for the evaluation of inventive step.

- 1.3.3 The process of document (2) is a development of the so-called "hot embossing" process. This process, as accepted by the Patent Proprietor during oral proceedings, is not the properly called "embossing" process forming a relief on the opposite side of the tissue paper but is a "press-marking" process carried out at elevated temperatures.

As taught in document (2), it was well known within the paper industry that the combined action of heat and pressure on a uniform tissue paper web results in a compaction of the fibres and a reduction in thickness. By using engraved rolls, the compressed area is smooth, translucent, with reduced opacity and thus glossy and visible against a contrasting dark background, i.e. it is a simulated watermark (page 1, line 26 to 32; page 2, third full paragraph below table 1 to page 3, second full paragraph below table 2).

According to document (2) this process could lead to the reduction of the paper strength which reduction could however be acceptable depending on the basis weight of the tissue paper and on the desired use of the final product.

Document (2) suggests thus that the reduction in strength of the paper obtained by this "hot embossing" process could be overcome by coating the rolls with an



organic liquid which enhances the strength of the paper in the marked area (page 4, second full paragraph).

The known "hot embossing" process referred to in document (2) distinguishes thus from that claimed in the patent in suit only insofar as the specific pressure, the hardness of the receiving rolls, the linear marking speed and the ratio of the thickness of said marked unit region to the area of said marked unit region are not mentioned.

The technical problem underlying the claimed invention can thus be defined as the adjustment and optimisation of the known "hot embossing" process without use of chemical means for obtaining a simulated watermark of any desirable size and form.

The Board is convinced that the underlying technical problem has been solved by a process as claimed in the patent in suit.

- 1.3.4 As admitted by the Appellant-Proprietor, all the above mentioned process features, the hardness of the receiving rolls, the specific pressure and linear marking speed, are conventional and specific for this technical field. Thus, these features cannot be considered to contribute to an inventive step (Case Law of the Boards of Appeal of the EPO 4th ed. 2001, I.D.6.5, pages 121 to 122).

The process of document (2) leads to the provision not only of small marks typical for the "press-marking" process but of markings having any desired size and

form (page 4, last full paragraph; page 5, lines 18 to 26).

Since this process, apart from the use of a synthetic liquid for coating the engraved rolls, is identical to the "hot embossing" process of the prior art described on page 2, third full paragraph below table 1 to page 3, second full paragraph below table 2 of the same document, it was the teaching of document (2) that the known "hot embossing" process could be also carried out for obtaining forming a simulating watermark of any desired size and form on tissue paper.

Document (2) was also not confined to the formation of strips containing markings which was only a particular embodiment of the invention described in this document (page 10, lines 7 to 9).

The use of engraved rolls of such a size to obtain a ratio of the thickness of a marked unit region to the area of a marked unit region of less than  $0.027 \text{ mm/mm}^2$ , was thus obvious for the skilled person in the light of the teaching of document (2) which did not contain any limit for the size of the used rolls and also did not limit the marking to the border area of the tissue paper.

Moreover, it was obvious for the skilled person not to coat the engraved rolls with a synthetic liquid if the reduction of strength was acceptable depending on the basis weight of the tissue paper and on the desired use of the final product.

The strength of the tissue paper was also not a requirement of the products of the patent in suit.

It was thus obvious for the skilled person, by following the entire teaching of document (2), to modify the specific process of this document by not coating the engraved rolls with a liquid and to adjust the size of the engraved rolls as well as the specific pressure, the hardness of the receiving rolls and the linear marking speed in the attempt to optimize the known process of the prior art (see T 761/93, point 5.4 of the reasons for the decision).

Therefore the subject-matter of claim 1 does not involve an inventive step.

2. *Appellant-Proprietor's first auxiliary request*

- 2.1 The set of claims according to said first auxiliary request differed from the set of claims as granted only insofar as claims 1 and 6 specified that the absorbent tissue paper sheet **is based on short papermaking fibres.**

Since the teaching of document (2), as explained above, extends in the Board's view to the marking of tissue paper made of any composition and thus also to tissue paper based on short papermaking fibres, the arguments put forward above with regard to the claims of the main request apply, *mutatis mutandis*, to this request.

The Board concludes thus that the subject-matter of claim 6 according to the second auxiliary request does not involve an inventive step for the same reasons put forward above.

3. *Appellant-Proprietor's second auxiliary request*

The second auxiliary request differs from the main request, *inter alia*, insofar as claim 5 (former claim 6) specifies that **the absorbent tissue paper sheet comprises at least two plies joined together by the impressed pattern simulating a watermark.**

It is undisputed that it was known to the skilled person that tissue paper products could be made of multiple plies. The fact that the products specifically exemplified in document (2) contain only one ply cannot thus be considered to lead the skilled person away from applying the teaching of this document to tissue paper made of multiple plies.

The joining together of at least two plies by the impressed pattern is a feature common in a "press marking" process, as conceded by the Appellant-Proprietor during oral proceedings.

Since the "hot embossing" process described in document (2) is a development of a "press marking" process, the skilled person would have been aware that this feature is a consequence of the pressing together of various plies and of the compacting of the fibres which occurs in the process of document (2).

Therefore this feature would be a direct consequence of the application of the teaching of document (2) to multiple plies.

The Board thus concludes that the arguments put forward above apply *mutatis mutandis* to the claims according to the second auxiliary request.

Therefore, also the subject-matter of claim 5 according to this request does not involve an inventive step.

## **Order**

### **For these reasons it is decided that:**

1. The decision under appeal is set aside.
2. The patent is revoked.

The Registrar:

The Chairman:

G. Rauh

P. Krasa