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D E C I S I O N
of 30 June 1999

Case Number: T 0613/95 - 3.2.3

Application Number: 85111573.3

Publication Number: 0174661

IPC: D21F 11/00

Language of the proceedings: EN

Title of invention:
Method for high density paper

Patentee:
Stone Container Inc.

Opponents:
Sulzer-Escher Wyss GmbH
Voith Sulzer Finishing GmbH
Stora Publication Paper AG, Patentabteilung

Headword:
-

Relevant legal provisions:
EPC Art. 54

Keyword:
"Novelty (no)"

Decisions cited:
-

Catchword:
-



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Boards of Appeal

Chambres de recours

Case Number: T 0613/95 - 3.2.3

D E C I S I O N
of the Technical Board of Appeal 3.2.3
of 30 June 1998

Appellant I:
(Opponent II)

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Appellant II:
(Opponent III)

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Respondent:
(Proprietor of the patent)

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Decision under appeal:

Decision of the Opposition Division of the
European Patent Office posted 3 July 1995
rejecting the oppositions filed against European
patent No. 0 174 661 pursuant to Article 102(2)
EPC.

Composition of the Board:

Chairman: C. T. Wilson
Members: J. du Pouget de Nadaillac
M. K. S. Aúz Castro

Summary of Facts and Submissions

I. With the present appeal, the Appellants (Opponents II and III) contested the decision dated 3 July 1995 of the Opposition Division rejecting their oppositions to the European patent No. 0 174 661 based on lack of novelty and/or inventive step according to Article 100(a) EPC.

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

"A method for producing paper, the method comprising the steps of

- (1) preparing a pulp furnish of fibers,
- (2) forming a wet paper web from said furnish,
- (3) removing moisture from said wet paper web to reduce the moisture content thereof to between about 55% to about 15%,
- (4) soft calendering said web to increase substantially the paper density while at said moisture content of between about 55% to about 15%, and subsequently treating said web to further reduce its moisture content to thereby produce a high quality paper suitable for multi-colour printing."

III. The following prior art documents mentioned in the proceedings were considered to be relevant:

D1: EP-A-0 169 988,

D2: DE-B-1 259 692 (or its corresponding
D11: US-A-3 124 504), and

D6: DE-A-3 201 635.

IV. Appellant I (Opponent II) lodged the appeal on 21 July 1995 paying the appeal fee the same date. On 8 November 1995 he submitted the Statement of Grounds of Appeal. Technical papers concerning paper making were joined.

Appellant II (Opponent III) lodged the appeal and paid the corresponding fee on 24 August 1995. The Statement of Grounds of Appeal together with a technical paper on paper making machines was submitted on 29 September 1995.

V. The Respondent (Patentee) replied on 23 May 1996, contesting all arguments of the other parties.

VI. In a communication dated 6 November 1997 and joined to the summons to oral proceedings, the Board of Appeal expressed doubts on the novelty of the method according to Claim 1, having in particular regard to D2.

Appellant I and the party as of right filed observations on 6 April 1998.

VII. Oral proceedings took place on 30 June 1998. Since Appellant II by a fax received on 17 October 1997 and the Respondent, also by a fax received on 26 June 1998, had indicated that they would not participate in these proceedings, Appellant I and the party as of right were the only parties represented.

VIII. Appellant I and the party of right argued as follows:

Since several technical terms often are used inaccurately, it is important to analyse the whole content of the documents. The terms "calender" and

"super-calender" (Kalender; SuperKalender; Glättwerk, in German) as well as "smoothness" (Glätte) and "gloss", glassine (Glanz) are often mixed up and used one for another, bringing considerable confusion.

Steps (1) to (3) of the method according to Claim 1 are the usual steps carried out in every paper making machine, so that the present invention is essentially to be seen in the fourth step. Within this step, a first unclear point is the **substantial** increase of paper density, no value being given. Secondly, the treating method to further reduce the moisture of the paper web is left open, so that it may consist for example in further calendering the web through subsequent nips. Finally, only the soft calendering step is really new.

Document D1 relates to soft calendering. This results from the figure of this document, which, although in some ways unclear, shows nevertheless alternate rolls of different diameters and, in the middle of the row of rolls, two adjacent rolls of large diameter, indicating the position of reversal of the paper web in order to treat both sides of the web uniformly. Moreover, the description itself, by mentioning paper rolls which are soft rolls (see, in this respect, D6), confirms this point. This citation, further, teaches that, in the range of moisture content of the paper web between 25% to 15%, a soft calendering followed by a drying step can occur and, that, by doing so, the same result is obtained as previously when using a calender for reducing thickness with a greater number of rolls. Therefore, D1 teaches to reduce the thickness of a paper web by soft calendering at a relatively high moisture content of the web, a drying step following the calendering step. Thus, step (4) is anticipated.

The last paragraph of page 2 of this document points out the high reduction of the paper thickness, which is obtained, and further the application of step (4) in a paper making machine.

Claim 1 of the patent in suit does not require that the whole soft calendering step takes place within the given moisture content range. Therefore, the indication in D1 that the paper web may have a moisture content of about 10%, when it leaves the calender, is of no importance. Furthermore, document D1 does not exclude such a calendering within the given range, since Claim 1 of this citation envisages the calendering through at least one nip. Normally the moisture content in one nip is reduced by about 0,4%; Supposing nevertheless a higher value, for example 3%, the paper web, being introduced at a moisture content of about 20%, namely the middle of the range specified in D1, will leave the calendering step after one nip at 17%, so inside the range of Claim 1 of the patent in suit. It can even continue to run through the following nips of the calender for drying reasons, as required by said claim.

Therefore, the method according to Claim 1 of the patent in suit is not novel.

IX. In their written submissions, Appellant I and the party as of right further argued that the subject-matter of this claim is not new vis-à-vis the disclosure of document D2, since all the conditions disclosed in the description of the patent in suit for soft calendering, such as the moisture content, the pressures and temperatures used, correspond to those described in the citation D2, so that the same result, namely a substantial reduction of the paper thickness, is necessarily reached.

X. In its response the Respondent argued as follows:

Document D1 does not teach increasing the paper web density but, indeed, teaches exactly the opposite. This prior art relates to glass calendering, see in this respect the title of this document, and the method taught therein concerns a glass calendering which provides a glassine finish, that is to say a paper surface not suitable for printing and inking. This is contrary to the purpose of the present invention. This prior art D1 indeed corresponds to the previous common knowledge in the paper making industry that it was not possible to soft calender a paper web having a moisture content in excess of 15% without creating a galvanized surface on the paper, such galvanized surface suffering the disadvantage that it cannot take ink evenly. The present invention on the contrary discloses a new step of soft calendering so as to increase the density of the paper web and to yield a paper which possesses an improved printing surface.

XI. Appellant I and the party as of right requested that the decision under appeal be set aside and that the European patent be revoked. Also Appellant II had requested in its statement of grounds of appeal that the decision under appeal be set aside and that the patent be revoked.

The Respondent had requested by fax of 29 June 1998 that the appeal be dismissed.

Reasons for the Decision

1. The appeal is admissible.
2. Document D1 is a European patent application published in the priority interval of the patent in suit, thus constituting state of the art under Article 54(3) EPC.
3. This prior art relates to a method for improving a paper with the object of compacting said paper to a high density level, said method requiring a calender with high pressures and a high moisture content of the paper web to be treated. This calender is a soft calender, at least in the meaning of the patent in suit since it comprises paper rolls. The fact that this prior art citation makes a distinction between a compression calender having paper rolls and a supercalender, which is an identical calender, however with a lower number of rolls, cannot lead to another conclusion.

In this prior art, the object is to avoid having to effect the whole drying of the paper within the calender, i.e. from the high moisture content at the entry to the calender to the required low moisture content at the output, since such a method impedes the efficiency of the calender. This problem is solved in that the paper leaves the calender before having the required low moisture content and is dried by a dryer to this low value. Therefore, a soft calender with a lower number of rolls is sufficient. It is indicated that such a method can take place inside a paper making machine, and in the detailed part of the description it is more specifically set out that the paper web is

introduced having a moisture content between 25% to 15% and leaves with a moisture content of about 10%. A drying process follows immediately. The paper obtained has a high reduction in the thickness and a good smoothness ("Glätte" in German).

4. All the steps of the method according to Claim 1 of the patent in suit are therefore found in this prior art and solve the same problem, namely to have a high quality paper. Multi-colour printing is not mentioned, but, the steps being identical, the same final result is obtained. Moreover, the whole content of the citation is directed to a soft calender for compaction, thus for increasing substantially the paper density. A line pressure of 500 kNm is also mentioned, corresponding to the pressures disclosed in the patent in suit.

5. The Opposition Division in its decision held that a moisture of at least 15% is not disclosed at the end of the calendering step and that, when a supercalender replaces a calender, no moisture content is given. These two arguments are not pertinent, since there is no requirement - even implicit - in Claim 1 to have a given moisture **at the end** of the calender and, as seen above, the terminology used in this document as to a supercalender is to be interpreted in the light of the whole disclosure.

Even if it were to be assumed that step (4) of Claim 1 requires a soft calendering totally conducted inside the given range, then Claim 1 of D1, which specifies a soft calendering through **at least one nip**, would comply with this step, since the reduction of moisture content inside a single nip usually is about 0,4%. Assuming

nevertheless 3% as a maximum value and soft calendering at 25% as given in D1, then at the output of the single nip according to the claim of this document a moisture content of 22% is reached, which is still within the range of Claim 1 of the patent in suit.

6. The Respondent has argued that the method according to D1 relates to a glass calendering which provides a glassine (or galvanized) finish. This type of finish is not suitable for receiving ink, print or graphics. Moreover, D1 does not teach to increase the paper density.

As to the increase of the paper density, the term "Verdichtung" (compression, compaction) is clear and page 1 of D1 clearly states that the object of the paper improvement disclosed in this prior art is to obtain a compression, that is to say a reduction in thickness, with a high density (auf ein hohes spezifisches Gewicht). In the last paragraph of page 2, a **highly compressed** paper is mentioned and on page 5, the wished high thickness reduction is said to be obtained. Contrary to the Respondent's assertion, the main object of this document corresponds to the object of the soft calendering step of Claim 1.

There is no mention in D1 of glassine or galvanized finish. Only the term "Glätte", which corresponds to smoothness, appears. Smoothness is a property desired for most papers, and in particular for newsprint. The Respondent has not mentioned one single passage of D1, which should suggest a glassine finish. Moreover, should this argument be right, it would not be relevant, since Claim 1 and the description of the patent in suit do not indicate for which reasons the

steps of Claim 1, which are all disclosed in document D1 as seen above, should not provide a glassine finish. The argument of the Respondent would imply a lack of disclosure of the patent in suit.

7. Therefore, the method according to Claim 1 of the patent in suit is not new having regard to this prior art D1 (Article 52 and 54 EPC). Under these circumstances, there is no need to decide whether or not it is also not new having regard to the disclosure of D2.

In result, the patent cannot be maintained.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The European patent No. 0 174 661 is revoked.

The Registrar:



N. Maslin

The Chairman:



C. T. Wilson

