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D E C I S I O N
of 21 March 2001

Case Number: T 0420/98 - 3.2.3

Application Number: 91850096.8

Publication Number: 0453427

IPC: B05C 1/08, B05C 11/02, B05C 1/16

Language of the proceedings: EN

Title of invention:
Method for limitation of the width of coating in coating of paper or board and a device for carrying out the method

Patentee:
Metso Paper, Inc.

Opponent:
Voith Sulzer Papiermaschinen GmbH

Headword:
-

Relevant legal provisions:
EPC Art. 56

Keyword:
"Inventive step - known process"

Decisions cited:
-

Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 0420/98 - 3.2.3

D E C I S I O N
of the Technical Board of Appeal 3.2.3
of 21 March 2001

Appellant: (Opponent)
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Decision under appeal: **Decision of the Opposition Division of the European Patent Office dated 16 February 1998, posted on 2 March 1998, rejecting the opposition filed against European patent No. 0 453 427 pursuant to Article 102(2) EPC.**

Composition of the Board:

Chairman: C. T. Wilson
Members: F. Brösamle
J. P. Seitz

Summary of Facts and Submissions

I. With decision of 2 March 1998 the opposition division rejected the opposition against European patent No. 0 453 427 essentially on the basis of

(D4) US-A-2 714 365.

II. Against the above decision of the opposition division the opponent - appellant in the following - lodged an appeal on 15 April 1998 paying the fee and filing the statement of grounds of appeal on the same day.

III. Following the board's Communication pursuant to Article 11(2) RPBA in which the board set out his provisional opinion oral proceedings were held on 21 March 2001 in which the patentee - respondent in the following - submitted a single request based on claims 1 and 2 filed in the oral proceedings.

IV. These claims read as follows:

"1. Method for limitation of the width of coating in coating of paper or board, wherein the coating agent is spread onto the moving base (4,5,W) to be coated by means of a coating device (10,20,50) of so called short dwell coater, provided with a grooved coating bar (11,21,53), the grooves running in a circumferential direction of the coating bar (11,21,53) fitted in the cradle supporting the coating bar over it's entire length, rotating in the direction opposite to the running of the web (W), wherein the coating agent is spread substantially over the width of the web only, and any coating agent extending substantially beyond the web width is scraped off the base (4,5,W) to be

coated with the aid of smooth end areas (a) fitted at both ends of the coating bar (11,21,53), wherein the coating agent is spread directly onto the surface of the paper or board web (W), and by means of the smooth end areas (a) of the coating bar, the coating agent is scraped so that the lateral areas of the web (W) remain substantially free from the coating agent."

"2. Coating device (10,20,50) intended for carrying out the method as claimed in claim 1, comprising a revolving coating bar (11,21,53), which rests against a moving base (4,5,W) to be coated and extends across the width of the coating device, and a substantial portion of which is provided with grooves (f), said coating bar (11,21,53) being fitted to spread the coating agent onto the base (4,5,W) to be coated, being fitted in the cradle supporting the coating bar over its entire length and rotating in the direction opposite to the direction of the rotation of the running of the web (W), wherein the coating agent is introduced in the coating device (10,20,50) of so called short dwell coater, in the direction of running of the base (4,5,W) to be coated, upstream of the coating bar (11,21,53) which smoothes the spread coating agent and onto which grooves (f) have been formed substantially across the web width, the grooves running in a circumferential direction of the coating bar (11,21,53), and the end areas (a) of the coating bar that extend substantially beyond the web width have been formed smooth, wherein the coating agent is spread directly onto the surface of the paper or board web (W), and by means of the smooth end areas (a) of the coating bar, the coating agent is scraped so that the lateral areas of the web (W) remain substantially free from the coating agent."

V. Based on respondent's above submitted claims 1 and 2

the parties essentially argued as follows:

(a) appellant:

- the problem underlying the claimed invention is defined in EP-B1-0 453 427 in column 2, lines 7 to 9, which have to be seen in the light of the above discussed prior art, namely the problems related to lateral doctors and of splashing in the roll nip;

- the advantages of the claimed invention are set out in column 2, lines 19 ff of the patent specification, namely that it is possible to omit lateral doctors completely since the scraping of the lateral areas is carried out by means of the coating bar itself and since the film on the smooth bar portions passing the coating bar is so thin that splashing does not occur in the nip;

- the direction of rotation of the coating bar being "opposite" to the web is not related to the above problem to be solved by the claimed invention;

- even if this feature is considered as essential it has to be observed that it can be derived from (D4), which document discloses the above problem and a solution thereto in that the regulating roll thereof, reference sign "7", according to column 2, lines 46 to 51, and lines 64 to 68, is the means to influence the feed rate of the coating agent to be applied to the web by allowing more or less coating agent to the transfer roll "5" due to an adjustable degree of rotational speeds between rolls "5" and "7";

- in view of the teachings of (D4) and of (D6) DE-A-3 609 383, cited in the letter dated 19.03.2001 which latter document discloses a rotating coating bar with circumferential grooves, a short dwell coater, a cradle for the coating bar and a drive means to rotate it in opposite direction to the application roll "1", the subject-matter of claims 1 and 2 is not based on an inventive step.

(b) respondent:

- in claims 1 and 2 it is prescribed that the coating bar rotates in a direction opposite to the moving web so that the amount of coating agent to be applied to the moving web is limited to the amount of coating agent contained in the grooves of the coating bar;

- claims 1 and 2 relate to direct coating i.e. an application roll as in (D4) is not necessary; in contrast to (D4) the coating agent is not supplied from a bath rather by a so called short dwell coater in which the coating agent is fed by a pump so that its residence time is limited or "short";

- in contrast to the claimed invention (D4) does not deal with the production of paper rather with subsequent treatment steps such as sizing; a skilled person would therefore not consider (D4) since (D4) in addition is based on an apparatus for producing corrugated sheet material;

- even if (D4) were considered by a skilled person it is observed that its teaching is ambiguous, see

arrows in Figure 1 and the feature "in opposite directions" dealt with in column 2 thereof; what is disclosed in (D4) is a gear pump being based on the corrugated roll "7" and the cooperating roll "5"; in contrast to what is claimed (D4) is based on indirect application of the coating agent;

- since essential features claimed, such as the cradle, the short dwell coater and the circumferential grooves in the "regulating means" cannot be derived from (D4) the subject-matter of claims 1 and 2 is novel and inventive since (D6) is irrelevant as it does not teach smooth end areas of a rotating coating bar to avoid excess coating agent entering the roll nip.

VI. The appellant requested that the decision under appeal be set aside and the European patent No. 0 453 427 be revoked.

The respondent requested that the appeal be dismissed with the proviso that the patent be maintained on the basis of claims 1 and 2 filed during the oral proceedings.

Reasons for the Decision

1. The appeal is admissible.

2. *Amendments*

2.1 Claims 1 and 2 no longer include within their scope the alternative of an **in**direct application of coating

agent, but rather are restricted to the direct application embodiment laid down in Figures 3/4 of EP-B1-0 453 427. The respondent argued that the alternative according to Figures 1/2 is cancelled because of the lack of clarity in the description with respect to the direction of rotation of the coating bar and the transfer rolls.

2.2 It is observed by the board that under these circumstances reference signs "4,5" and "11,21" for reasons of consistency and clarity should have been deleted from claims 1 and 2 since they clearly relate to the embodiment of Figures 1 and 2 only.

2.3 Claims 1 and 2 are restricted to a grooved coating bar with grooves running in a circumferential direction thereof, on a short dwell coater, on a cradle for the coating bar and with its rotation in a direction opposite to the running web.

2.4 Contrary to the appellant the board sees no violation of the requirements of Article 123(2) EPC since all features of claims 1 and 2 are originally disclosed in the description or in Figures 3/4, see arrow indicating the sense of rotation of the coating bar "53" and the arrow for the moving web "W'".

3. *Novelty*

The issue of novelty needs no detailed argument since the parties and the board were in agreement that neither (D4) nor (D6) is novelty-destroying with respect to the subject-matter of claims 1 and 2.

4. *Inventive step*

4.1 From claims 1 and 2 it cannot be seen what the nearest prior art is considered to be since both claims are cast in a **one-part form**. For the assessment of inventive step however it is immaterial how the claims are drafted whether in a two- or in a one-part form.

4.2 In the light of (D4) **and** (D6) - i.e. their combination - the board comes to the conclusion that the subject-matter claimed is not inventive for the following reasons:

4.3 Primarily (D4) is the prior art which deals with the problem of the claimed invention, namely how lateral doctors can be omitted and how it can be achieved that there is no tendency of the coating agent to splash.

Since a coating agent in a broader sense is nothing other than a liquid (D4) is relevant since it also deals with the application of a liquid to a moving web such as paper, see column 1, lines 16 to 18, making it clear that a liquid is to be applied "e.g. liquid adhesive". Whether or not **after** applying a coating agent to the web the coated web forms part of a corrugated sheet material is immaterial since the problems of the claimed invention are focussed on the step of applying a coating agent to a web i.e. are identical with those disclosed in (D4).

4.4 As claimed the coating agent of (D4) is metered with a grooved element which rotates, see (D4) and its "regulating roller 7" and compare with the patent specification and its coating bar "53". Whether these elements are driven in the one or in the other direction of rotation is a question of their efficiency, namely to **meter the coating agent**. It is

obvious that in one sense of rotation of these elements more coating agent can pass these elements than in the other sense of rotation.

It can be that the teaching of (D4) is contradictory, see arrows in its Figure 1 and the description thereof in column 2, lines 46 to 51 and 64 to 68. At any rate it is clearly disclosed that the "regulating roller 7" is a means to **regulate** the amount of coating agent, namely by **regulating its speed of rotation relative to the applying roller**, see column 2, lines 64 to 68.

4.5 At the end of column 2 of (D4) it is disclosed how the "unbroken cylindrical surface of 8" acts, namely preventing coating agent from **passing downstream thereof**.

A skilled person would therefore derive from (D4) the problem to be solved by the claimed invention, see above remark 4.3, **and** its solution in that the lateral doctors can be omitted completely and in that there is no tendency of the coating agent to splash, see advantages of the claimed invention set out in EP-B1-0 453 427, column 2, lines 19 to 39, since the coating bar itself carries out scraping with its smooth end areas **and** by its adjustable rate of rotation, see (D4), column 2, lines 50 to 72.

Appellant's contrary findings that the direction of rotation is not related to the problem to be solved by the claimed invention can therefore not be shared by the board.

4.6 Considering this problem it is irrelevant how the

application of the coating agent is carried out whether with a roll plunged in a bath as in (D4) or with a pump in form of a known "short dwell coater", see (D6) and its Figure 3, reference signs "45, 48". From (D6) further structural features not related to the solution of the above problem to be solved by the invention can be seen, namely a grooved coating bar which is rotated and has circumferential grooves as well as a cradle for this bar supporting the bar.

4.7 The board cannot share the findings of the respondent that a skilled person would not consider (D4) since (D4) deals with the treatment of a paper web and is **not** restricted to the **production** of this paper web. What happens to the paper web **after** the coating agent has been applied to it does not render (D4) irrelevant since the step of coating is thereby not influenced. It is therefore of no relevance that the coated web of (D4) is used in a later stage for the production of a corrugated sheet. Since in claims 1 and 2 the diameter of the coating bar is not prescribed it is not justified to claim that it is smaller than the diameter of the known regulating roller "7" according to (D4).

Whether it is true that (D4) is based on a "gear pump" for feeding the coating agent cannot be decided from the disclosure of (D4); anyway it has no relevance for the problem of how lateral doctors can be omitted and splashing still avoided. This is also true for the two alternatives to be considered, namely direct or indirect way of applying the coating agent to the web since the way of applying the coating agent is again not related to the way in which **metering** thereof is carried out.

4.8 Confronted with the problem to be solved by the invention the board comes to the result that the skilled person **not knowing the claimed invention** would consider the combination of (D4) and (D6) since in (D4) the problem to be solved and a solution thereof are clearly to be seen and since (D6) - also from the direct technical field of the claimed invention - clearly discloses the structural features which are not directly related to the omission of lateral doctors and splashing, such as short dwell coater, the cradle for the rotating coating bar and its circumferential grooves.

4.9 Summarizing, the subject-matter of claims 1 and 2 is not inventive so that these claims are not valid.

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:

A. Counillon C. T. Wilson