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Datasheet for the decision of 25 February 2016

Case Number: T 0915/12 - 3.2.03

Application Number: 02740065.4

Publication Number: 1358385

IPC: D21F5/18, F26B21/12

Language of the proceedings: EN

Title of invention:
A METHOD FOR CONTROLLING DRYING OF A WEB-FORMED MATERIAL

Patent Proprietor:
Andritz Technology and Asset Management GmbH

Opponent:
Valmet Technologies, Inc.

Headword:

Relevant legal provisions:
EPC Art. 56, 100(a), 114(2)
RPBA Art. 12(4), 13(1)

Keyword:

Decisions cited:
G 0001/95, G 0007/95, G 0010/91

Catchword:

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Case Number: T 0915/12 - 3.2.03

D E C I S I O N
of Technical Board of Appeal 3.2.03
of 25 February 2016

Appellant: (Opponent)	Valmet Technologies, Inc. Keilasatama 5 02150 Espoo (FI)
Representative:	TBK Bavariaring 4-6 80336 München (DE)
Respondent: (Patent Proprietor)	Andritz Technology and Asset Management GmbH Statteggerstrasse 18 8045 Graz (AT)
Representative:	Tschinder, Thomas Stattegger Straße 18 8045 Graz (AT)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 9 February 2012 rejecting the opposition filed against European patent No. 1358385 pursuant to Article 101(2) EPC.**

Composition of the Board:

Chairman	G. Ashley
Members:	Y. Jest
	M.-B. Tardo-Dino

Summary of Facts and Submissions

I. An appeal was lodged on 16 April 2012 by the opponent (hereinafter: appellant) against the decision of the opposition division, posted 9 February 2012, to reject the opposition and to maintain European patent No. 1358385 as granted (European patent application No. 02740065.4 on the basis of International application PCT/SE2002/000065 published as WO-A-2002/063098). The appeal fee was paid the same day and the grounds of appeal were submitted on 18 June 2012.

The opposition was based on article 100(a) EPC for lack of inventive step (article 56 EPC). The opposition division came to the conclusion that the subject-matter of granted claim 1 involved an inventive step.

II. The board of appeal expressed its provisional opinion of the case in a communication pursuant to article 15(1) of the Rules of Procedure of the Boards of Appeal (RPBA), dated 30 October 2015, which accompanied the summons to oral proceedings pursuant to rule 115(1) EPC, dated 4 August 2015.

The appellant submitted with a letter dated 17 December 2015 four new documents (D15 to D18) and a new ground of opposition based on article 100(a) EPC for lack of novelty.

III. Cited prior art was as follows:

a) from the opposition proceedings:

D3 US-A- 5 136 790
D5 WO-A- 99/032714

b) during the appeal proceedings:

i) with the grounds of appeal:

D9 WO-A- 99/002773
D10 EP-A- 0 770 731
D11 WO-A- 97/047934
D12 US-A- 5 152 080
D13 "Valmet Air Dryers" printed In Finland by Painoprisma Oy 1994
D14 "Valmet Converting Drying Technology" printed in Finland by Non stop studiot Ltd. I KOTEVA Oy, Turku 2000

ii) with letter of 17 December 2015

D15 EP-B- 1 379 727 (patent specification relating to an application published on14 January 2004)
D16 "Papermaking Science and Technology", encyclopedia (ISBN 952-5216-00-4), Book 6A, ISBN 952-5216-06-3, copyright 1999, printed 2000, pages A675 to A681
D17 "Papermaking Science and Technology”, Book 9, ISBN 952-5216-09-8, copyright 2000, printed 2000, pages 470 to 473
D18 "Papermaking Science and Technology", Book 14, ISBN 952-5216-14-4, copyright 1999, printed 1999, pages 64 and 65

iii) during oral proceedings

the appellant submitted copies(16a to 18a) of the cover pages of the books, on which was written a handwritten confirmation from a head of a university library concerning receipt of books D16 and D17 in 2000, and of book D18 in 1999.

IV. Requests

The appellant requested that the decision under appeal be set aside and that the European patent No. 1358385 be revoked.

The respondent (patent proprietor) requested that the appeal be dismissed or that the patent be maintained on the basis of one of auxiliary requests 1 to 5 as filed with the reply to the grounds of appeal.

V. Claim 1 as granted (main request) reads:
(letters A to H added by the board)

(A) A method for controlling drying of a web-formed material (1), preferably a pulp web, wherein
(B) the web-formed material (1) is moved through a drying plant (30), comprising blow boxes (12, 13) arranged in a plurality of drying decks, floating above lower blow boxes (12), which at their upper sides blow out hot process air against the web-formed material, in order to dry this, and
(C) water, in the form of steam, escaping from the web-formed material (1) is mixed with and discharged by the process air,
(D) at least part of which is recirculated,
(E) whereas the non-circulated process air is discharged as exhaust air and is replaced by a corresponding portion of supply air, preferably hot air with a low water content,
(F) while controlling the temperature of the process air,
characterizing in that
(G) in the case of a detected deviation from the desired dry content of the dried web-formed material (1), the volume flow of the process air is changed by
(H) increasing the volume flow of the process air at too low

a dry content in the web-formed material (1), and decreasing the volume flow of the process air at too high a dry content in the web-formed material (1), for the purpose of rapidly regaining the desired dry content of the dried web-formed material (1)."

VI. The appellant argued essentially as follows:

a) Documents D9 to D18

Documents D9 to D14 were relevant for the issue of inventive step of the claimed method, because they demonstrated that an increase of the volume flow of process air was not a problem for a wave shaped web as known from D3 and was well-known to the skilled person. Both D15, which was part of the state of the art according to article 54(3) EPC, and D16 were highly relevant because the were novelty destroying for the method defined in claim 1 as granted, whereas D17 and D18 were relevant for the auxiliary requests. The public availability of D16 and D18 before the priority date of the disputed patent was established by documents D16a to D18a.
Documents D9 to D18 were therefore to be admitted into the proceedings.

b) Main request

The method according to claim 1 as granted lacked novelty when compared to D15 or D16 and did not involve an inventive step for the following reasons.

The method of granted claim 1 was defined in relatively broad terms; for instance, the web-formed material was not limited to a pulp web and could thus also be a web carrying a liquid coating as in D3.

According to the patent itself (see paragraphs [0001] and [0002]), the method known from D3 disclosed all the features of the preamble of claim 1 as granted (features A to F), with the exception of the arrangement of the blow boxes in a plurality of drying decks (part of feature B), which could be disregarded since it has no bearing on the object of the claimed method.
It was clear to the skilled person that the dryness of the end product was an important physical variable in processes for drying a web material, and that suitable means were needed to enable regular adjustment of relevant parameters.
It was also part of the general knowledge of the skilled person to control the drying process of webs by adjusting the volume of the flow of process gas. This knowledge was illustrated for instance in D5, which suggested controlling the moisture of a web by adjusting the blowing velocity of blast air (see pages 20 and 23, first paragraph; page 26 last paragraph; page 27 first paragraph and page 31, first and second paragraphs). On the basis of this, the skilled person would consider suitable means for controlling the volume of process gas in the process known from D3.
By selecting the dryness/moisture of the web as the first process variable, as defined in features (f) and (g) of claim 1 of D3, the skilled person would be prompted by the method-steps defined in features (d), (e) and (h) of said claim 1 to adjust the flow rates for the recycled exhaust gas and the make-up gas, in order to decrease or increase the volume of flow of the process gas composed by these two gases in response to the measured value of the process variable, namely the dryness/moisture of the web.
In doing so the skilled person would inevitably arrive at the characterising steps (G) and (H) of the method of granted claim 1.

VII. The respondent argued essentially as follows:

a) Late submissions

Documents D9 to D14 should have been submitted in the opposition proceedings. Their teachings were *prima facie* technically not relevant, since they did not concern methods for drying a pulp web. They were thus to be disregarded.
The fresh ground of lack of novelty based on newly cited document D15 was also to be disregarded.
The appellant had not proved that the encyclopedia books from which D16 to D18 were taken were publicly available before the priority date of the patent in dispute. D16 to D18 should also be disregarded.

b) Inventive step

In general terms the invention defined in claim 1 as granted could be distinguished from the closest prior art D3 by the method-step of adjusting the volume flow of process air, thereby allowing fast control and maintenance of the web at a desired dry content.
The invention disclosed in D3 followed another objective, namely the maintenance at a constant predetermined value of the pressure inside the dryer.
The skilled person would thus not envisage increasing or decreasing the volume of process gas injected into the dryer, since this action would substantially change the local pressure in the dryer.

VIII. Oral proceedings took place on 25 February 2016 at the end of which the board pronounced its decision.

Reasons for the Decision

1. Submissions filed in the appeal proceedings

1.1 Documents D9 to D14 were cited by the appellant with the grounds of appeal. It is therefore within the board's discretion to admit these pieces of evidence (article 114 EPC and article 12(4) RPBA).

The reason given by the appellant for citing documents D9 to D14 can be read on page 6/8 of the grounds of appeal, namely that they were relevant for the issue of inventive step of the claimed method because they demonstrated that an increase in volume flow of process air for drying was general knowledge, and did not lead to any difficulty when used with a wave shaped web of the type disclosed in D3, so that the teaching of D5 would be applied to D3 by the skilled person.
The board is of the opinion that the question of flow of process air for drying was at the heart of the debate right from the beginning with respect to the granted method-claim, and that these documents should thus have been submitted during the opposition proceedings. Furthermore D9 to D14 or the general knowledge derivable therefrom do not appear to be highly relevant, in the sense that the impugned decision did not question that the skilled person would combine D5 with D3. The opposition division found that applying the teaching of D5 to D3 would have a negative effect on the main aim of the process disclosed in D3 (see page 5, fifth paragraph of the decision), so that the skilled person would have abandoned this idea.

In light of these considerations the board decided to disregard documents D9 to D14 pursuant to article 114(2) EPC and article 12(4) RPBA.

1.2 Document D15 - Novelty

D15 is published after the filing date of the contested patent and constitutes state of the art according to article 54(3) EPC, and thus is only to be considered for the issue of novelty.
The ground of opposition according to article 100(a) EPC for lack of novelty (article 54(1) EPC) was submitted with the appellant's letter dated 17 December 2015.
In the letter of 22 January 2016, the respondent expressly objected to the introduction of this new ground of opposition into the appeal proceedings.
In accordance with G 10/91, item 3 of the Headnote, and G 1/95, the fresh ground of lack of novelty based on D15 is not allowed into the proceedings.
The late submitted document D15, being a state of the art according to article 54(3) EPC, cannot constitute a closest prior art for the issue of inventive step, hence the issue of novelty cannot be considered in the context of deciding upon inventive step (see G 7/95, last sentence of the Headnote).

Document D15 and the fresh ground of lack of novelty based thereon are thus disregarded (article 114(2) EPC, articles 12(4) and 13(1) RPBA).

1.3 Extracts D16 to D18 of Encyclopedia Books

1.3.1 D16 was considered to be highly relevant by the appellant for the issue of inventive step of the method defined in claim 1 as granted (main request).

D16 is an extract of Book 6A of the encyclopedia "Papermaking Science and Technology". The appellant referred to the annotations "copyright 1999" and "printed 2000" on a cover page as well as to a copy

(D16a) of said cover page provided with a hand-written text of "Ms C. Saikkonen, Head of Collections Department University of ... Library" *(Note from the board: the handwritten name of the university is not legible)* . The text reads: " I confirm this copy of this title has been received by our library in the year 2000."

The board shares the respondent's view that these submissions do not form sufficient evidence for proving that D16 was made available to the public before the priority date (5 February 2001) claimed by the patent in dispute. The printing (2000) and copyright (1999) years indicated in D16 cannot alone prove accessibility before early 2001. The annotation made by Ms Saikkonen does not fulfill the requirements of form and content, which usually apply for affidavits or similar documents. For instance apart from the usual details about the identity of the witness and her involvement in the circumstances surrounding the facts reported the text is silent as to the circumstances in which the book was handled in particularwhether the book was received in the library by Ms Saikkonen personally, and when it was actually made available for public consultation, such as by putting it on a shelf or entering it into an accessible database.

The board arrived at the conclusion that, in the absence of sufficient proof for the effective date of public availability of Book 6A, document D16 did not constitute state of the art pursuant to article 54(2) EPC, and was thus to be disregarded.

1.3.2 D17 and D18 were cited by the appellant only for demonstrating a lack of inventive step of the subject-matter defined in claim 1 of some of the auxiliary requests. Consequently these documents are not

considered to be *prima facie* relevant for the issue of patentability of the subject-matter defined in the claims of the main request.

Documents D17 and D18, for which the date of public accessibility was also questionable for similar reasons as those expressed for D16, are therefore also disregarded (article 114(2) EPC).

1.4 In summary the board decided to disregard all the documents (D9 to D18) which had been submitted for the first time during appeal proceedings.

2. Main request

2.1 Novelty of the method according to claim 1 as granted had not been disputed during the opposition proceedings and is not an issue to be dealt with in these appeal proceedings.

2.2 Inventive step

2.2.1 State of the art

The general teaching of D3 relates to a method for drying coated webs, i.e. webs carrying a liquid coating. The method more specifically directed to the adjusting two flow rates that form the process gas flow for drying the web structure; thefirst flow is a flow of recirculating gas (recycled gas) and the second is a flow of make-up gas (see for instance claim 1). The purpose of the adjustment (see column 2, lines 27 to 41) is to insure a balanced state of the dryer while avoiding that dampers controlling the gas flows are adjusted to an extreme setting, and while at the same

time automatically controlling other process variables, e.g. fuel consumption, web temperature, etc.
The adjusting step for the gas flow rates (see claim 1, feature (h)) allows a selected process variable to be maintained at a pre-established set point (claim 1, features (f) and (g)).
The sole explicit example disclosed in D3 of such a process variable is the gas pressure inside the dryer, which has to be maintained at a set point in order to keep the dryer in a balanced state (see claim 2). There is no explicit disclosure in D3 of the process variable being the dryness of the web-material.

2.2.2 It is not disputed that D3 (see especially figures 1 and 2) discloses a method for controlled drying of a web-formed material comprising the following steps of claim 1 as granted, and defines the closest prior art:

(B) the web-formed material 18 is moved through a drying plant 10 comprising blow boxes 24, floating above said lower blow boxes 24 (see figure 1), which on their upper sides blow out hot process air against the web-formed material 18, in order to dry this (column 1, lines 17 to 28),

(C)(D) water, in the form of steam (M_W) escaping from the web-formed material 18, is mixed with and discharged by the process air, at least part of which is recirculated (claim 1, feature (b)),

(E) the non-circulated process air is discharged as exhaust air (M_E) and is replaced by a corresponding portion of supply air (M_{MU}), preferably hot air with a low water content (claim 1, features (d) and (e)),

(F) the temperature of the process air is controlled (claim 1, feature (c)).

2.2.3 The method of claim 1 as granted differs from the known method by the fact that:

(B') the blow boxes are arranged in a plurality of drying decks

(G) in the case of a detected deviation from the desired dry content of the dried web-formed material, the volume flow of the process air is changed as follows:

(H) by increasing the volume flow of the process air at too low a dry content in the web-formed material, and decreasing the volume flow of the process air at too high a dry content in the web-formed material, for the purpose of rapidly regaining the desired dry content of the dried web-formed material.

2.2.4 It can be agreed with the appellant that feature (B') is not in functional interrelationship with features (G) and (H). Feature (B') merely concerns a matter of design possibility well-known in the field. Feature (B') therefore does not contribute to the technical effects to be achieved by the claimed method and can be ignored when defining the objective technical problem and assessing inventive step.

2.2.5 The objective technical problem to be derived from distinguishing features (G) and (H) corresponds to the problem defined in paragraph [0009] of the patent, which is to provide a method for monitoring and controlling the moisture content of a web material, which is capable of reducing the time required for changing the conditions of the drying process, in other words to provide a faster regulation in terms of dryness of the web material.

2.2.6 Contrary to the appellant's arguments, the board considers that the person skilled in the art, when faced

with this problem, would not be prompted by the description of D3 (column 3, lines 55 to 60; column 7, lines 33 to 37 and 39 to 49) to adjust the initial settings, including the amount of liquid evaporated from the web during start up, and to minimize deviation from the desired dry content of the web.

The factor "deviation of the dry content" is neither expressly known from D3 nor is it implicitly disclosed therein. The conclusion drawn by the appellant, namely that the skilled person derives implicitly this factor from D3 because of the strong relationship between the amount of evaporated liquid and the dry content of the web material before and after drying, appears to be based on an ex post facto reading or interpretation of D3 in the light of the invention as claimed in the patent.

2.2.7 Furthermore, the skilled person finds nohint in the definition of the method given in claim 1 of D3 for adjusting the overall volume of process gas in order to control the dryness of the web material.

As mentioned above, the sole example given in D3 of the first process variable, as defined in features (f) to (h) of claim 1, is the gas pressure inside the dryer. The person skilled in the art understands that this variable is of uttermost importance for maintaining the sinusoidal-like wave shape of the web material, which is induced by the staggered arrangement of the blow boxes 24, see column 1, lines 29 to 33. Taking this general teaching into consideration, the skilled person interprets feature (h) of claim 1 of D3 as meaning:
- that the recycled gas flow and the make-up air flow may well require an adjustment initiated by the value of

other variables, like fuel consumption, web temperature, etc. (see column 2, lines 39 to 41),
- but that the overall volume of process gas composed of said recycled gas and make-up air must nevertheless remain substantially unchanged in order to maintain constant the pressure within the dryer.

In the case that the skilled person would consider selecting the dryness of the web material as the "first process variable" defined by feature (f) of claim 1, the resulting method would still not comprise features (G) and (H) of claim 1 of the patent in dispute for the following consideration.
The most obvious interpretation of claim 1 of D3 would be, in accordance with feature (h), to adjust the proportion of the volume of warm and humid recycled gas relative to the volume of fresh air, so as to change the humidity and temperature of the so formed process gas. This would however represent only an additional and secondary measure, as compared to the main influence provided by the control of the fuel burner 28, and thus of the temperature of the process gas, see column 2, lines 37 to 41 of D3.
When applying or adapting the process defined in D3 with the intention of controlling the dryness of the web, the skilled person would therefore not increase the individual flow rates (recycled gas, fresh air) and thereby increase the volume of the overall process gas, because this would result in a substantial increase of pressure inside the dryer, which is contrary to the general teaching and overruling objective of D3.

2.2.8 For the same reasons the person skilled in the art would not apply the teaching of D5 relative to the adjustment of process air to the method known from D1.

2.3 The method of claim 1 of the patent as granted thus involves an inventive step in the meaning of article 56 EPC.

3. Since the patent as granted meets the requirements of the EPC, an examination of the auxiliary requests is not required.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

C. Spira G. Ashley

Decision electronically authenticated