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**D E C I S I O N**  
**of 7 February 2000**

**Case Number:** T 0037/96 - 3.3.6

**Application Number:** 90915864.4

**Publication Number:** 0498821

**IPC:** D21C 7/14

**Language of the proceedings:** EN

**Title of invention:**

Method and apparatus to displace spent liquors in a digester

**Patentee:**

BELOIT TECHNOLOGIES, INC.

**Opponent:**

Voest-Alpine Industrieanlagenbau Gesellschaft m.b.H.

**Headword:**

Digester/BELOIT

**Relevant legal provisions:**

EPC Art. 54, 56

**Keyword:**

"Public prior use and public availability of written disclosure - not proven"

"Novelty - yes"

"Inventive step - yes"

**Decisions cited:**

-

**Catchword:**

-



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Boards of Appeal

Chambres de recours

Case Number: T 0037/96 - 3.3.6

**D E C I S I O N**  
**of the Technical Board of Appeal 3.3.6**  
**of 7 February 2000**

**Appellant:** BELOIT TECHNOLOGIES, INC.  
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**Respondent:** Voest-Alpine Industieanlagenbau  
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**Decision under appeal:** Decision of the Opposition Division of the  
European Patent Office posted 9 November 1995  
revoking European patent No. 0 498 821 pursuant  
to Article 102(1) EPC.

**Composition of the Board:**

**Chairman:** P. Krasa  
**Members:** G. Dischinger-Höppler  
P. Mühlens



## Summary of Facts and Submissions

- I. European Patent No. 0 498 821, relating to a method and apparatus to displace spent liquors in a digester, was granted on the basis of 9 claims, the independent process claim reading:

"1. A batch digesting process wherein a digester (10) is charged with a mass of cellulosic material and digesting liquor, and the charge is then cooked at an elevated temperature and superatmospheric pressure to obtain within said digester (10) a column of delignified pulp and hot spent liquor, the process comprising: after digestion of cellulosic material and while maintaining said column of delignified pulp substantially intact, quantitatively displacing the hot spent liquor under pressure by pumping into said digester (10) a lower temperature liquid, forcing hot spent liquor out of the digester while maintaining said hot spent liquor at said elevated temperature and super-atmospheric pressure; and transferring said displaced hot spent liquor under pressure to a second mass of cellulosic material (27) to hereby conserve and utilize the sensible heat of said hot spent liquor to preheat said second mass of cellulosic material, characterized in that: a first volume portion of the lower temperature liquid is pumped into the digester at the top of said column to displace hot spent liquor downwardly in the digester and a second volume portion of the lower temperature liquid is pumped into the digester at the bottom of said column to displace hot spent liquor upwardly in the digester, and displaced hot spent liquor is forced out of the digester at a location intermediate ends of the digester".

A second independent claim (Claim 6) relates to an apparatus for digesting a mass of cellulose pulp with a digesting liquor in a batch digesting process, comprising inter alia a digester (10); a displacement liquid tank (19); and a displaced liquid outlet (23) and being characterized in that: "displacement fluid inlets for fluid from said displacement liquid tank (19) are provided at the upper end and at the lower end of the digester (10) and the displaced liquid outlet (23) is provided at a mid-portion of the digester".

II. An opposition was filed against the patent in its entirety on the grounds of Articles 54 and 56 EPC (Article 100(a) EPC) based on the following documents:

- (1) Printed manual from 'Settlement of Koryazhma' of a pulp digester, entitled "TENTATIVE INSTRUCTIONS for the operation of digesters made by Uralkhimmash and installed in the acid digester plant of a pulp and paper enterprise" and dated 20 November 1972 (& English translation);
- (2) A drawing with handwritten comments in Russian and in German and bearing in handwriting the Number 20086/10-2 and the date 20.11.1972;
- (3) Another drawing with handwritten comments in Russian and in German without number and date;
- (4) US-A-4 578 149;
- (5) Pulping Processes, Sven A. Rydholm, Interscience Publishers 1965, pages 716-719, 726 and 727.

The Opponent filed documents (1) to (3) as evidence for an alleged public prior use through a purchase made without confidentiality obligation by a company named Pulp and Paper Combine Kotlas ("Kotlas") of a digester marketed by a company named "Uralkhimmash". The opponent further argued that the content of these documents had been made available to the public by written disclosure prior to the priority date of the patent in suit.

III. In an annex to summons to oral proceedings, the Opposition Division informed the parties that the alleged prior use was not sufficiently substantiated.

IV. The Opponent then filed the following documents:

(6) Sworn statement by Dipl. Ing. Smirnov together with sworn statement by interpreter Mag. Ullrich;

(7) Sworn statement by Dipl. Ing. Jarmolinskij and Dipl. Ing. Michailow together with sworn statement by interpreter Mag. Uta;

in support of the alleged public prior use and public availability of documents (1) to (3) and further

(8) BR-A-8 201 145 (& English translation);

(9) UdSSR-Inventor's certificate No. 887 665 (& German translation);

(10) German translation of document (1) and

(11) Various diagrams.

V. The Opposition Division revoked the patent on the ground of lack of inventive step in view of the disclosure of document (4) in combination with that of documents (1) and (2). They held that documents (1) and (2), bearing no signs of a confidentiality obligation and being dated, were publicly available at the priority date of the patent in suit as was supported by the sworn statements set out in documents (6) and (7).

VI. The Appellant (Proprietor) appealed against this decision. The arguments brought forward in his statement of grounds of appeal can be summarized as follows:

- There was no convincing evidence for documents (1) and (2) to be considered as being comprised within the state of the art.
- The process disclosed in documents (1) and (2) was totally different from the claimed one and led a person skilled in the art away from the approach of the patent in suit, as did all the other cited prior art. The same was applicable to the claimed apparatus.

VII. The Opponent did not respond to the Appellant's statement of grounds of appeal.

VIII. The Appellant requested

- that the decision under appeal be set aside and that the patent be maintained as granted (main request) or, alternatively,



- that the patent be maintained in amended form as filed during the oral proceedings before the Opposition Division (auxiliary request) and
- that oral proceedings be held in case the Board cannot allow the main or auxiliary request.

### Reasons for the Decision

#### 1. *Public prior use*

In its decision, the Opposition Division has not commented on the prior use of a digester as defined in Claims 1 and 6 of the patent in suit alleged by the Opponent by referring to the decisions T 482/89 and T 877/90. The Board notes that Opponent has not provided any evidence regarding the date and the circumstances of one single sale of such a digester. The evidence provided by the Opponent in this respect, i.e. documents (1) to (3), does not allow the establishment of any public prior use of the said digester of the process of Claim 1. Document (1) merely refers to "**Tentative** Instructions for the operation of digesters made by Uralkhimmash and installed in the acid digester plant of a pulp and paper enterprise" whatever enterprise may be meant. Alone the fact that the instructions have been printed by "Kotlas" is, in the Board's view, not sufficient to prove that "Kotlas" has purchased the digester from "Uralkhimmash". Likewise, documents (2) and (3) which are drawings of a digester do not reveal anything from which the alleged purchase could be deduced.

After the Opposition Division's remark of insufficient substantiation of a public prior use in its annex to summons to oral proceedings, the Opponent provided document (6) wherein Mr Smirnov in a sworn statement declares that documents (1) and (2) represented operating instructions and an accompanying drawing of a digester coming from "Uralkhimmash" and having been put into operation in 1972 in "Kotlas" (page 1, second and third paragraph). In the sworn statement according to document (7) two directors of "Kotlas", Mr Jarmolinskij and Mr Michailow, declare their agreement to Mr Smirnov's statement. However, said statements are totally silent on the question of whether or not there existed a commercial interrelationship between the two companies "Uralkhimmash" and "Kotlas", such that it is unclear whether "Uralkhimmash" was a subcontracting company of or even a company affiliated with "Kotlas" or vice versa. Any such interrelationship could indicate that "Kotlas" was not to be equated with the public in accordance with Article 54(2). Moreover, said statements do not at all address the question of whether a purchase took place.

Hence, the evidence filed by the Opponent in support of the allegation that "Kotlas" had purchased a digester as disclosed in these documents, is not sufficient to prove that said purchase actually took place, let alone that it took place without any imposed confidentiality obligation.

Since the Opponent did not respond to the appeal and since the Board would not be able to establish on its own, i.e. without the help of the Opponent, whether the alleged prior use was in fact made available to the

public before the priority date of the patent in suit, the said prior use cannot be considered as constituting state of the art in the sense of Article 54(2) EPC.

2. Therefore, the following two questions remain at issue in the present appeal case:

- firstly whether or not documents (1) to (3) have been publicly available before the priority date of the patent in suit and, thus, form part of the state of the art and,
- secondly whether or not the subject-matter as claimed in accordance with the main and auxiliary request fulfills the requirements of novelty and inventive step in view of the available prior art.

2.1 Public availability of documents (1) to (3)

Availability of technical information to the public is governed by Article 54(2) EPC according to which everything made available to the public before the date of filing of the European patent application forms part of the state of the art. In the case of a written description it is sufficient to be regarded as made available to the public, if it was possible for the public to gain knowledge of the content of the document without any obligation of confidentiality restricting the use or dissemination of such knowledge.

For answering the question of whether the written information contained in documents (1) and (2) has been made publicly available, it is generally necessary to establish all the facts relating to

- (a) where the documents turned up,
- (b) the circumstances under which the information contained in said documents was made accessible to the public, including the determination of who was the public in the specific case and whether there existed any explicit or implicit confidentiality agreement and
- (c) the date or the period of time of the public occurrence of said documents.

2.1.1 Concerning point (a) it is undisputed that documents (1) and (2) have turned up in "Kotlas", in the printing works as evidenced by the imprint on the last page of the Russian original of document (1), and in the technical archive as is shown by an imprint on document (2). Document (3), however, does not display any such imprint or other hint at its origin, nor is this issue addressed in the sworn statements. Therefore and in agreement with the Opposition Division's opinion, document (3) cannot be taken into account as constituting prior art within the meaning of Article 54(2) EPC.

2.1.2 Documents (1) and (2) are typical company generated papers. Unlike scientific or technical journals, such company leaflets cannot be assumed to have automatically made their way to the public. Rather to the contrary it depends on the particular circumstances and the available evidence for that, to justify the assumption that such company papers were indeed available to the public at a particular date.

With respect to point (b), it is noted that Mr Smirnov states in document (6) that the Tentative Instructions and the accompanying drawing, i.e. documents (1) and (2), were not subject to confidentiality, either in the past or at present, but publicly accessible. This was, in his opinion, evident from the fact that they did not bear any imprint of confidentiality. Moreover, Mr Smirnov himself had, upon inquiry and without any confidentiality obligation, received documents (1) and (2) from the technical director of "Kotlas". Further, some copies had been sent allegedly to several technical and scientific institutes in Russia.

- 2.1.3 Concerning point (c), the Appellant correctly observes that Mr Smirnov in his sworn statement did not mention any date at which documents (1) and (2) had been made available to him or to other members of the public. Therefore, the Board finds that Mr Smirnov's sworn statement is not conclusive that documents (1) and (2) had been available to the public prior to the priority date of the patent in suit.

Under these circumstances the sworn statement signed by Mr Jarmolinskij and Mr Michailow is of no account for the present issue, since it merely confirms the correctness of Mr Smirnov's sworn statement.

- 2.1.4 The Opponent also submitted that, according to general practice in the former Soviet Union, technical papers such as documents (1) and (2) were freely accessible to the public. In the absence of evidence proving the Opponent's submission, which was contested by the Appellant, the Board must treat it as a mere allegation.

Therefore, the Board decides that the contents of documents (1) and (2) as well as of document (10), a German translation of document (1), do not constitute prior art within the meaning of Article 54(2) EPC.

2.2 Novelty and inventive step (main request)

2.2.1 The Opponent further cited documents (4), (5), (8), (9) and (11). The Board is satisfied that none of them anticipates the claimed subject-matter. This not being contested, no detailed reasoning is required here.

The Board concludes, therefore, that the subject-matter of Claim 1 is novel.

2.2.2 The patent in suit refers to the general technical field of batch digesting of cellulosic material such as wood chips, and in particular to a method and apparatus suitable for conserving the sensible heat contained in the black liquor at the end of the digestion process (column 1, lines 7 to 12). Document (4) discloses the digestion of cellulosic material which already effects an energy saving by a process where, at the end of the cook, the hot spent cooking liquors are replaced from the bottom to the top of the digester by replacement liquors while the pressure in the digester is maintained. The displaced liquors which leave the digester at essentially the cooking temperature, can be used e.g. for preheating purposes (patent in suit: column 1, lines 46 to 58; document (4): column 1, lines 9 to 10, column 2, line 66 to column 3, line 8, and column 3, lines 28 to 44).

It is set out in the patent in suit that the problem to

be solved in view of this prior art consists in providing an improved batch digester cooking system which effects an increase in thermal energy saving and in time saving at a minimal intermixing of displacement liquor and hot black liquor (column 2, lines 5 to 22).

According to Claim 1 of the patent as granted, it is suggested to solve this problem by displacing the hot spent liquor under pressure, both from the top and from the bottom of the digester with the spent black liquor being pushed out at a mid-portion of the digester by the two columns of replacement liquor approaching from the top and from the bottom (see also column 2, lines 26 to 43).

The Opponent argued that the only problem solved by the claimed process was to shorten the time of the replacement operation since the other advantages, in particular any energy saving, were merely a result thereof. In support, he submitted various diagrams of different replacement operations, i.e. document (11) (see minutes of the oral proceedings before the Opposition Division).

The Opposition Division accepted that this problem was credibly solved by the proposed solution and the Board has no reason to doubt that.

Document (4) itself does not hint either at the problem or at the proposed solution which, therefore, is not rendered obvious by this citation. Nor is the proposed solution obvious in the light of the other cited documents:

Document (5) was merely cited against dependent apparatus Claim 9 to show that it was known in the art that the liquid outlet may be provided with a screen (page 726, Figure 10.11) and contains no further relevant teaching; the teaching of document (8) differs from that of document (4) essentially in that the subject-matter claimed therein is not limited to an upward displacement direction (page 4, lines 19 to 28, claim 1); document (9), while being rather vague, may be understood to teach a replacement of the black liquor as in document (4), however, in the reverse direction from the top of the digester to its bottom (second and third page of the German translation).

It follows, therefore, that none of the cited prior art documents, either alone or in combination, suggests or even hints at the proposed replacement of the spent black liquor, simultaneously from both, the top and the bottom of the digester, whereby the displaced liquor is forced out from the digester at a location intermediate between its top and bottom end.

For the sake of completeness it is noted that, for the same reasons, no other result is obtained if one starts from document (8) or (9) as the closest prior art as was suggested by the Opponent, because the problem and its solution would be the same as set out above.

3. The Board holds, therefore, that none of the cited prior art documents, either individually or in combination, renders obvious the claimed solution of the existing technical problem, and concludes that the process of Claim 1 as granted is based on an inventive step in accordance with Articles 52(1) and 56 EPC.



Dependent Claims 2 to 5 which refer to preferred embodiments of Claim 1 and Claims 6 to 9 which relate to an apparatus which comprises all the essential means for carrying out the claimed process, are based on the same inventive concept and derive their patentability from that of Claim 1.

4. Since the above findings correspond to the allowability of the Appellant's main request, the auxiliary requests need not to be considered.

## **Order**

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

1. The decision under appeal is set aside.
2. The patent is maintained as granted.

The Registrar:

The Chairman:

G. Rauh

P. Krasa