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D E C I S I O N
of 30 January 2001

Case Number: T 0084/99 - 3.2.3

Application Number: 94902707.2

Publication Number: 0676031

IPC: F28C 3/16, F27D 15/02

Language of the proceedings: EN

Title of invention:
Cooler for cooling particulate material

Patentee:
F.L. Smidth & Co. A/S

Opponent:
Krupp Polysius AG

Headword:
-

Relevant legal provisions:
EPC Art. 54, 113(1)

Keyword:
"Novelty (no)"
"Basis of decisions - right to be heard - oral proceedings
(yes)"

Decisions cited:
G 0004/92

Catchword:
-



Case Number: T 0084/99 - 3.2.3

D E C I S I O N
of the Technical Board of Appeal 3.2.3
of 30 January 2001

Appellant:
(Opponent)

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Representative:

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Respondent:
(Proprietor of the patent)

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Representative:

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Decision under appeal:

**Interlocutory decision of the Opposition Division
of the European Patent Office posted 24 November
1998 concerning maintenance of European patent
No. 0 676 031 in amended form.**

Composition of the Board:

Chairman: C. T. Wilson
Members: U. Krause
J. P. B. Seitz

Summary of Facts and Submissions

I. The present appeal is directed against the decision of the Opposition Division, dated 14 October 1998 and issued in writing on 24 November 1998, on the maintenance of European Patent No. 0 676 031 in amended form.

II. Notice of opposition was filed by the Appellant (Opponent) who requested revocation of the patent on the grounds of insufficient disclosure (Article 100(b) EPC) and lack of inventive step (Article 100(a) EPC) in view of *inter alia* the following prior art:

(D2) DE-B-21 19 006

(D3) DE-C-878 625

The Appellant later also advanced lack of novelty with respect to document

(D9) EP-A-0 337 383

III. The Opposition Division decided that the grounds for opposition did not prejudice maintenance of the patent in the form of amended claim 1 submitted by the Respondent (Proprietor) on 14 October 1998, together with dependent claims 2 to 12 as granted, essentially for the reasons that the amended claim 1 was supported by Figure 9 and that it differed from the subject-matter disclosed in (D9) in that the gas injection means had the form of tubes fitted within the tray, which difference was neither obvious in view of (D9) alone nor suggested by the other prior art, in particular (D2) and (D3).

Claim 1 as maintained by the Opposition Division reads as follows:

"1. A cooler (1) for cooling particulate material which has been heat-treated in an industrial kiln, such as a rotary kiln (3) for manufacturing cement klinker; the cooler (1) comprising an inlet (5), an outlet (7), end walls, side walls, a bottom and a ceiling; at least one stationary supporting surface (11,81) for receiving and supporting the material which is to be cooled, the supporting surface being arranged to be provided, during operation, by a quantity of the particulate material (93) which is to be cooled; means (95) for injecting cooling gas into the material at a plurality of positions along the supporting surface; and at least one separate mechanical conveying device (17,41,51) for conveying the material across the supporting surface (11,81), characterized in that the or at least one of the stationary supporting surface(s) (11,81) is provided in a tray (91) having the form of a rectangular box with a substantially imperforate bottom wall, side walls and end walls; and in that the gas injection means in the form of tubes are fitted within the tray."

IV. The Appellant filed the notice of appeal on 20 January 1999 and paid the appeal fee on the same day. The statement of the grounds of appeal was filed on 19 February 1999. The relevant arguments of the appellant, as put forward in this statement of grounds, can be summarized as follows:

As to the grounds of Article 100(b), there was a contradiction between claim 1 and the description concerning the relation between the stationary

supporting surface and the tray: whereas claim 1 specified that the stationary supporting surface was provided in the tray, the description stated at column 6, line 9, that the stationary supporting surface consisted of a tray. The resulting uncertainty as to whether the supporting surface and the tray were different elements or one and the same element would render a skilled person unable to carry out the invention. A similar insufficiency would result from the fact that all figures are said to show embodiments of the invention, whereas a closer analysis revealed that only the embodiment of Figure 9 included all the features of claim 1.

As to the grounds of Article 100(a), the subject-matter of claim 1 differed from the cooler disclosed in (D9) in that the gas injection means was in the form of tubes. This modification was obvious in view of normal considerations of a skilled person, positioning tubes on the lateral sides of the tray 7 in place of the slits 11, and in view of (D3) disclosing the use of tubes 48 for injecting gas into a bed of particulate material to be cooled.

- V. Oral proceedings were held on 30 January 2001 upon a subsidiary request of the Appellant. The Respondent did not attend the proceedings. During these proceedings, the Appellant advanced the fresh argument that the subject-matter of claim 1 lacked novelty with respect to document D9. He argued that the cooler shown in Figures 2 to 4 of this document comprised a number of stationary supporting surfaces formed by the particulate material filling, in operation, the troughs (7) of the stationary grate (1,2,3), and a moveable grate (1',3') acting as a mechanical conveying device

separate from the stationary grate. The stationary grate could be considered as consisting of a rectangular, box-like tray comprising the bottom plate (2), the two outer side walls shown in Figure 3 and the end walls shown in Figures 2 and 4. The cooling gas was injected through slits (11) and channels (14) which were defined by wall portions (9,10,2) within the tray, forming substantially rectangular tubes for the gas.

VI. The Appellant requests that the decision under appeal be set aside and the patent be revoked. The Respondent has neither made any submissions nor filed any requests.

Reasons for the Decision

1. The appeal is admissible.
2. Since the Respondent has filed no requests, the appeal will have to be examined on the basis of the patent as maintained in the impugned decision, viz. claim 1 and page 2 of the description as submitted by the Respondent on 14 October 1998, together with the dependent claims, description pages 1, 3 and 4, Figures 1 to 9 of the patent as granted.
3. *Novelty*
 - 3.1 In the appeal procedure, the argumentation as to lack of novelty was presented by the Appellant in the Oral proceedings for the first time in the absence of the Respondent who did not attend. The question therefore arises whether this point can be taken into

consideration in the decision.

In G 4/92 (published in OJ 1994, 149) the Enlarged Board of Appeal held that, in view of the right to be heard laid down in Article 113(1) EPC as a fundamental principle, a decision against a party who had been duly summoned but who failed to appear at oral proceedings could not be based on facts and evidence put forward for the first time during those oral proceedings, whereas new arguments could be used if based on the facts and evidence already put forward.

In the present case the question of novelty with respect to document D9 was raised by the Appellant during the proceedings before the Opposition Division and considered in the impugned decision. Thus, this ground and the corresponding evidence in the form of document D9 was already part of the decision under appeal and is, therefore, subject to reconsideration by the Board. Neither the ground of lack of novelty nor the evidence was, therefore, raised for the first time during the oral proceedings. The only new point was the argumentation presented by the Appellant which, however, was based on the known ground and evidence. Thus, a consideration of this argumentation does not violate the right to be heard laid down in Article 113(1) EPC even if this resulted in a decision against the absent Respondent.

- 3.2 As stated in column 1, lines 5 to 7 thereof, document D9 relates to a cooling grate intended for use in a cooler for cooling cement klinker discharged from a kiln. Such a cooler typically comprises a housing with an inlet, an outlet, end walls, side walls, a bottom and a ceiling. The cooling grate of figure 2 shows an

arrangement of overlapping, alternately stationary and movable rows of grate elements to cause the particulate material to move across the grate surface. The lower stationary grate element is composed of a plate (2) fixed to a support (1) and an upper grate plate (3) mounted on the plate (2). As shown in particular in Figure 3 which according to column 4, lines 26 to 28, applies to both the arrangements of Figures 1 and 2, the upper grate plate has vertical side walls and a horizontal top wall provided with a number of troughs (7) therein. As explained in the text bridging columns 3 and 4, a quantity of the particulate material to be cooled is arranged, in operation, in the troughs (7) and supports the hotter material thereabove. Thus, the upper surface of the material within the troughs forms stationary supporting surfaces for the hotter particulate material to be cooled. Cooling gas is injected into the troughs and, therefore, into the material within the troughs and the material on the supporting surface, through slits (11) formed in the side walls of the troughs (7) and extending along the supporting surface. In this type of grate the particulate material is conveyed across the grate elements and, therefore, across the supporting surfaces in the troughs of the grate elements, by the reciprocating horizontal movement of the adjacent movable grate element. This movable grate element is a component separate from the stationary grate element. Thus, it constitutes a "separate mechanical conveying device" as defined in claim 1 although it also comprises troughs for supporting the particulate material and there is, therefore, no separation between the supporting and conveying functions in the sense set out in column 2, lines 15 to 20 of the patent.

The grate element shown in cross-section in Figure 3 can be considered as a tray having the form of a rectangular box with an imperforate bottom wall (2), the outer vertical side walls shown in Figure 3 and the vertical end walls shown in Figure 2, the side and end walls surrounding an arrangement of two by four troughs within the tray. The tray is covered by a top wall formed by webs (9) between the open troughs (7) and the particulate material providing the supporting surfaces therein. Hence, the stationary supporting surfaces are not only provided in the troughs (7) but also within the grate element forming a tray supporting the troughs (7).

The bottom wall (2), the side walls of the troughs (7), the outer side walls of the tray and the webs (9) define channels (14) for supplying cooling air through the slits (11) into the troughs (7) and the particulate material therein. Thus, the gas channels (14) and the slits (11) form gas injection means which are outside of the troughs (7) but fitted within the tray formed by the bottom wall (2) and the outer vertical side walls.

3.3 Claim 1 further specifies that the gas injection means in the form of tubes are fitted within the tray. Since the term "tubes" is used to define the "gas injection means" which comprises not only the walls defining the gas supply channels but also the gas channels themselves, the expression "in the form of tubes" will have to be understood to define the form of the injection gas channels provided within the tray as being tubular.

In the impugned decision, on page 4, it was found that the above feature was not derivable from document D9.

This statement was not further substantiated. However, it can be concluded from the discussion of D9 in the context of inventive activity, on page 5 of the decision, that the gas injection means of D9 are considered as a complex channel construction including space 15, channels 14 and openings 11, and that this arrangement cannot be regarded as being tubes or tube equivalents.

It appears from this argument that the Opposition Division also applied the term "tubes" to the form of the gas channels but understood that the gas injection means consists of tubes, i.e. comprises exclusively tubes, in the form of channels of circular cross-section. The Board cannot, however, follow this understanding. Firstly, considering the embodiment of the claimed invention according to Figure 9, the round tubes (95) define only a portion of the channel conducting the injection gas into the material within the tray. Further portions of this channel are formed by the supply to the tubes (95) and by the downwardly facing injection holes in the tube wall. The latter, for example, could well have any cross-sectional shape, such as the form of a slit. The Board therefore concludes that claim 1 only requires that the main portion of the gas injection channel within the tray should be in tubular form. Secondly, a tubular channel is not restricted to a elongate hollow space of circular cross-section but encompasses any cross-section which is substantially constant along the elongation of the channels. The Board therefore understands the feature in question as requiring the main portion of the injection gas channels within the tray to be in the form of an elongate hollow space having a substantially constant cross-section.

In D9, the cooling gas enters the tray from the hollow grate support (1) and passes through the channels (14) to the slits (11) for injection into the material within the troughs (7). Thus, the main portion of the cooling gas channels within the tray is formed by the longitudinal channels (14). The channels 14 have an elongation within the tray and alongside the troughs, and a substantially constant polygonal cross-section along this elongation. The channels (14), therefore, meet the above definition of the gas injection means in claim 1.

3.4 The Board therefore concludes that a cooler as defined in claim 1 is disclosed in document D9. Thus, the requirement of novelty prejudices the maintenance of the patent in the amended form.

4. *Inventive step and insufficient disclosure*

Since the patent cannot be maintained for lack of novelty, it is not necessary to consider the other grounds of insufficient disclosure and lack of inventive step.

Order

For these reasons it is decided that:

1. The impugned decision is set aside.
2. The patent is revoked.

The Registrar:

The Chairman:

A. Counillon

C. T. Wilson