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File No.: T 0938/91 - 3.2.3
Application No.: 86 302 196.0
Publication No.: 0 209 961
Classification: F27B 7/20, F27D 13/00, C04B 7/44
Title of invention: Method and apparatus for producing clinker

D E C I S I O N
of 21 September 1993

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

Opponent: Krupp Polysius AG

Headword:

EPC: Art. 56, 104, 108, 110, 114

Keyword: "Admissibility of appeal" - "Apportionment of costs" - "Inventive step"

Headnote
Catchwords

Case Number: T 0938/91 - 3.2.3

D E C I S I O N
of the Technical Board of Appeal 3.2.3
21 September 1993

Appellant: Krupp Polysius AG
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Decision under appeal: Interlocutory decision of the Opposition Division
of the European Patent Office dated 30 September
1991 concerning maintenance of European patent
No. 0 209 961 in amended form.

Composition of the Board:

Chairman: C.T. Wilson
Members: H. Andrä
L.C. Mancini

Summary of Facts and Submissions

- I. European patent No. 0 209 961 was granted on 22 February 1989 with four claims on the basis of European patent application No. 86 302 196.0.
- II. A notice of opposition to this patent was filed on 21 November 1989 by the Opponent (Appellant) requesting that the patent be revoked in its entirety on the ground of lack of inventive step (Articles 52(1) and 56 EPC). The following documents were cited in support of the opposition:
- (D1): Walter H. Duda: "Cement-Data-Book", 1st Ed. 1976, Bauverlag GmbH, Wiesbaden and Berlin.
 - (D2): US-A-2 882 033
 - (D3): DE-B-2 411 669
 - (D4): GB-A-1 319 180
- III. By an interlocutory decision within the meaning of Article 106(3) EPC dated 30 September 1991, the Opposition Division maintained the patent in amended form on the basis of the documents annexed to the interlocutory decision.
- IV. The Appellant filed a notice of appeal against this decision on 26 November 1991 paying the appeal fee on 27 November 1991. The Statement of Grounds of Appeal was submitted on 24 January 1992. The Appellant requests revocation of the patent in its totality since all features of all the Claims 1 to 3 are either known or are obvious in the light of an alleged public prior use (kiln plant "Amalfa") and of the prior art

document (D6): DE-Journal "Zement-Kalk-Gips" Nr. 8/71, pages 344 to 348.

In support of the alleged public prior use, documents according to "Anlage 1" to "Anlage 7" were submitted, a witness, Herr Manfred Plümpe, was named and evidence in the form of an inspection of the plant "Amalfa" was offered.

V. In a reply from the Respondent (Patentee) dated 6 May 1992 to the Statement of Grounds of Appeal, the Respondent held that the Appellant has in his notice and grounds of appeal completely ignored the decision under appeal and has not presented any observations whatsoever on the merit of the grounds of decision. The alleged public prior use introduced for the first time in the appeal proceedings was a sale by the Appellant of one of his own plants and the Appellant must therefore have been perfectly well aware of this prior use at the time that the opposition was entered. It would now be an unacceptable abuse of the opposition procedure to allow the Appellant to introduce this new ground of attack merely because an unfavourable decision was reached by the Opposition Division.

VI. In a communication of the Board of Appeal pursuant to Article 11(2) RPBA dated 3 March 1993, the Board expressed their preliminary opinion that the appeal was admissible. However, since the alleged public prior use had been filed for the first time after expiry of the time limit granted for filing the notice of opposition and could not be regarded merely as a missing link in the chain of arguments presented within the opposition period due to its allegedly novelty-destroying

character, the Board concluded that the subject-matter of the alleged public prior use would apparently have to be regarded as lated-filed and, since both the evidence submitted for support of the alleged public prior use and the new citation (D6) did not appear to invalidate Claims 1 to 3, these new facts would probably be disregarded under Article 114(2) EPC

VII. In the oral proceedings before the Board the Respondent maintained his request that the appeal be rejected as inadmissible and failing this, that the appeal be dismissed. He requested that the patent be maintained on the basis of the documents submitted during the oral proceedings. He also requested an apportionment of costs holding that the study of the documents submitted only in the appeal proceedings, in particular of the complex drawings of the alleged public prior use, required a considerable additional effort.

Claims 1 and 2 read as follows:

"1. A method of producing clinker from raw material having a chloride content of 0.015-0.1 weight percent a kiln plant having at least one multistage cyclone suspension preheater through which kiln exit gas is passed to a primary precipitator or filter, a portion of the chloride-containing kiln exit gas, which is caused to by-pass the suspension preheater, being quenched by atmospheric air, the by-passing exit gas portion after the quenching being reunited with the kiln exit gas from the preheater and passing to the primary precipitator or filter without the by-passing exit gas portion first encountering a separate precipitator or filter, the chlorides not being caught

by the primary precipitator or filter, dust collected by the primary precipitator or filter being reused in the process.

2. A plant for carrying out the method according to Claim 1, the plant comprising a kiln (2), a multi stage cyclone suspension preheater (4-7) connected between an exit gas outlet of the kiln and a primary precipitator or filter (8) whereby material being fed to the kiln is preheated by the kiln exit gas in the preheater and the gas passes from the preheater to the primary precipitator or filter, and a by-pass conduit (11,14) connecting the kiln exit gas outlet to the primary precipitator or filter (8) via an air quenching unit (12) and in parallel with the preheater (4-7), the by-pass conduit (14) being devoid of any further precipitator or filter between the air quenching unit (12) and the primary precipitator or filter (8)."

The Appellant requested that the decision under appeal be set aside and the patent be revoked. He requested further that the Respondent's request for an apportionment of costs be rejected.

The arguments put forward by the Appellant in support of his requests can be summarised as follows:

- The matter concerning the public prior use cannot be regarded as constituting an exclusive statement of the grounds of appeal but was submitted supplementary to the grounds for opposition as expressly stated. A mere copying and filing of the letters submitted in the proceedings before the first instance would appear pointless.

- The subject-matter of the prior use "Amalfa" made available to the public comprises a method of producing clinker in a kiln plant in which kiln exit gas in a by-pass duct is quenched by atmospheric air and subsequently united with the kiln exit gas from the suspension preheater and the combined kiln exit gas passes via a cooling tower to the precipitator. This known method is therefore identical with that according to Claim 1 of the patent in suit. In a cooling tower, a noteworthy precipitation of particles does not occur and a cooling tower cannot therefore, be regarded as a precipitator.

- The subject-matter of Claim 1 is distinguished from the disclosure of the document (D3) only by the feature that the kiln exit gas is quenched by air over the whole cooling range. This feature is, however, suggested by document (D1), page 331, left-hand column, paragraph 3, taking account in particular of the wording "...kann mit Wasserbedüsung gekühlt werden...". Cooling of the kiln exit gas in the by-pass duct exclusively by air is also obvious from document (D1), Figure 20.8 on page 334.

- Having regard to the Respondent's request for an apportionment of costs, it must be considered that the ground relating to the public prior use is not off the point since the wording of Claim 1 can be read on to this subject-matter. Besides, the public prior use advanced is not the starting point for a completely new attack on patentability, but is a missing link in the chain

of arguments submitted by the Respondent already together with the notice of opposition.

At the end of the oral proceedings before the Board, the Chairman gave the Board's decision.

Reasons for the decision

1. *Admissibility of the appeal*

The appeal complies with Articles 106 and 107 and Rule 64 EPC.

Pursuant to Article 108 EPC, within four months after the date of notification of the decision appealed from, a written statement setting out the grounds of appeal must be filed.

In the present case, the Appellant has neither in the Notice of Appeal nor in the Statement of Grounds of Appeal presented any observations on the merits of the grounds of the decision under appeal. Instead, he has introduced for the first time in the appeal proceedings an alleged public prior use and a new citation.

The question to be decided is whether these circumstances comply with the requirement pursuant to Article 108 EPC to file a written statement setting out the grounds of appeal.

It is clear from the Statement of Grounds of Appeal that the Appellant attacks the patent in suit on the grounds of lacking novelty and inventive step, respectively, although basing his attack on state of the art put forward for the first time in the appeal

phase. The Grounds for opposition pursuant to Article 100 EPC apply equally to the appeal proceedings, the Board of Appeal exercising any power within the competence of the first instance.

In the present case, the grounds of appeal submitted correspond with the grounds for opposition according to Article 100(a) EPC and further defined in Article 52(1) EPC as put forward within the period for filing the notice of opposition.

Although a "fresh case" has been presented by the Appellant to the Board of Appeal, the fresh reasons still fall within the same ground for opposition, namely Article 100(a) in combination with Article 52(1) EPC.

The Board considers, therefore, that the appeal complies also with the requirement of Article 108 EPC and is admissible, (see Decision T 611/90 OJ 1993, 50).

Moreover, in their decision G9/91 dated 31 March 1993, published in the Official Journal EPO OJ 1993, 408 (cf. section 18), the Enlarged Board of Appeal has decided that fresh grounds for opposition may in principle not be introduced at the appeal stage. From this decision, it can be deduced that new factual reasons which remain within the same opposition grounds may be brought forward by the parties, even in the appeal stage. Thus, the decision of this Board to consider the appeal admissible is also in line with the jurisprudence of the Enlarged Board of Appeal.

2. *Article 123 EPC*

2.1 Claim 1 is essentially based on original Claims 1 to 3. The feature of Claim 1 that the by-passing exit gas portion after the quenching is reunited with the kiln exit gas from the preheater derives from the single figure of the original drawing in combination with the appertaining description. The feature of Claim 1 that the chlorides are not caught by the primary precipitator or filter derives from page 3, penultimate paragraph of the original description. Claim 2 is based on original Claim 2 except for the cyclone suspension preheater being multi-stage. This feature derives from the original drawing (ref. signs 4-7) in combination with the corresponding description.

Claim 3 is supported by the original Claim 3.

The claims satisfy the requirement of Article 123(2) EPC.

2.2 "Method" Claim 1 comprising all the features of granted Claim 1 has been limited vis a vis the latter by incorporation of the subject-matter of granted Claim 2 and the additional features that the suspension preheater is a multi-stage cyclone suspension preheater, that the by-passing exit gas portion after the quenching is reunited with the kiln exit gas from the preheater and that the chlorides are not caught by the primary precipitator or filter.

"Apparatus" Claim 2 differs from the corresponding granted Claim 3 in that the term "suspension preheater" has been limited to "multi-stage cyclone suspension preheater"

The amendments to the Claims 1 and 2 do not extend the protection conferred and the claims are therefore also in compliance with Article 123(3) EPC.

3. *Alleged public prior use "Amalfa"*

3.1 Together with the Statement of Grounds of Appeal, the Appellant filed documents designated "Annex 1" to "Annex 7" stating that the Opponent, formerly "Polysius AG", delivered a rotary kiln plant comprising a cyclone preheater to the company Loma Negra Cia in Buenos Aires, Argentina, without any liability for secrecy, the plant being in operation since August 1980. In order to prove his statements, the Appellant has offered the testimony of a witness and an inspection of the plant.

3.2 The alleged public prior use including the documents "Annex 1" to "Annex 7" was filed only after expiry of the time limit stipulated for filing the notice of opposition in a written reasoned statement, i.e. in the appeal proceedings. In this respect, the Appellant argued in his letter dated 9 July 1992 that the public prior use would have to be regarded as a missing link in the chain of arguments presented by the Appellant already in the period for filing a notice of opposition. According to the Appellant, it was not foreseeable before taking notice of the decision under appeal that the Opposition Division would consider it to be a measure of inventive character to replace water cooling of the by-pass gas stream as disclosed in document D3 by quenching with cold air and to reuse dust collected in the precipitator in the method of producing clinker.

The Board does not accept this argument since both the step of quenching the by-pass stream with atmospheric air and the step of reusing dust collected in the precipitator in the process have constituted the subject-matter of the claims as granted (cf. Claims 1 and 2) and could therefore be recognised as being essential characteristics of the invention.

The Appellant must be expected to have been aware at the time of filing his opposition of the delivery of one of his own plants to persons of the public. Since the Appellant holds that the alleged public prior use would destroy novelty of the subject-matter of Claim 1 of the patent in suit and would therefore have to be regarded as extremely relevant, it must be concluded that the Appellant would have submitted the alleged public prior use within the opposition period had he acted with due diligence in order to contribute to speedy and effective proceedings. As this was not the case, the excuse for filing the alleged public prior use only at the appeal stage cannot be accepted by the Board.

The subject-matter of the alleged public prior use is therefore regarded as late-filed.

- 3.3 Since the evidence submitted in support of the alleged public prior use and the new document (D6) do not invalidate Claims 1 to 3, the Board disregards them pursuant to Article 114(2) EPC.

Whilst the Board is not obliged to give reasons for not admitting this new evidence, it would make the following points:

3.3.1 The drawing according to "Annex 4" of the alleged public prior use "Amalfa" illustrates part of the process diagram of the plant. From this drawing and from section 3e of the Statement of Grounds of Appeal it is clear that the by-pass gas stream after being reunited with the heat exchanger gas stream is conveyed through a cooling tower in which the gas is cooled by water spraying and is then guided to an electrofilter. Water spraying in the cooling tower would scrub out dust and other particles, such as chlorides, cf. the truck depicted below an arrowed line originating in the cooling tower according to the drawing of "Annex 4". The cooling tower must therefore be regarded as a separate precipitator or filter in the gas duct upwards of the primary precipitator or filter. According to the process diagram illustrated in "Annex 4" the chlorides produced by air quenching would not, therefore, pass out unimpeded through the primary precipitator as stipulated by Claim 1, cf. the passage "... the by-passing exit gas portion ... being reunited with the kiln exit gas from the preheater and passing to the primary precipitator or filter without the by-passing exit gas portion first encountering a separate precipitator or filter, the chlorides not being caught by the primary precipitator or filter..." of Claim 1.

3.3.2 Thus the process of the plant "Amalfa" operates according to the principle that solubles *inter alia*, chlorides of the combined gas stream are scrubbed out which requires a cooling tower, whereas Claim 1 teaches the different concept of quenching the chlorides in the by-pass duct, avoiding an additional precipitator or filter in the gas duct upwards of the primary precipitator and passing the condensed chloride

particles unimpeded through the primary precipitator. Hence, Claim 1 incorporates a concept which cannot be derived from the subject-matter of the alleged public prior use, even assuming that the prior use took place as described by the Appellant.

4. The further document (D6) also cited for the first time together with the Statement of Grounds of Appeal discloses a rotary kiln comprising a "Lepol"-grate, a precipitator and a by-pass duct (cf. Figure 2 and corresponding description on page 347, left-hand column, section 5).

In the case of excessive temperature values of the plates of the grate, kiln exit gas is passed through the by-pass duct for the purpose of limiting the thermal strain on the grate. In the case that the gas temperature at the inlet of the precipitator exceeds a threshold value, fresh air is added in the by-pass duct. The document (D6) is concerned with the issue of limiting the temperature of the grate and of the precipitator to values compatible with a safe operation. It does not suggest quenching of the kiln exit gas by atmospheric air in the duct by-passing the suspension preheater in the sense of condensing the chlorides in the kiln exit gas and passing them unimpeded through the precipitator.

Thus, the document (D6) which in the absence of reasons justifying its submission only at the appeal stage is also regarded as late-filed, is not relevant in respect of the decision to be taken and is disregarded by the Board pursuant to Article 114(2) EPC.

5. *Prior art disclosed by documents (D1) and (D3).*

5.1 The Board concurs with the opinion of the first instance that the closest prior art with regard to the subject-matter of Claim 1 is disclosed in document (D3) (cf. Figure 6 with appertaining description).

This citation describes a method of producing clinker from raw material in a kiln plant having a multistage cyclone suspension preheater through which kiln exit gas is passed to a primary precipitator. A portion of the kiln gas, which is caused to by-pass the suspension preheater, is quenched in a water-cooled cooling tower before it is reunited with the kiln exit gas from the preheater without first encountering a separate precipitator. It is further disclosed that if the precipitated dust does not contain too much alkali or chloride, the dust can be recycled to the kiln.

The method according to Claim 1 differs therefrom in that the raw material has a chloride content of 0.015-0.1 weight percent, that the kiln exit gas in the by-pass duct is quenched by atmospheric air instead of water cooling and that the chlorides are not caught by the primary precipitator.

5.2 The method of producing clinker known from document (D3) requires the installation of a cooling tower additionally to the primary precipitator. The inherent technical problem of the invention is therefore seen in providing a less complicated method of producing clinker in order to reduce installation and production costs.

Employing air quenching of the by-pass gas instead of water cooling in the case that the raw material has a relatively low chloride content of 0.015 to 0.1 weight percent, permits the elimination of a cooling tower, the chlorides being condensed by air quenching and passing unimpeded through the primary precipitator to the outside of the plant, enabling thus recycling of the dust collected in the primary precipitator to the kiln.

The Board has no doubt that the inherent problem as indicated above is solved by the subject-matter of Claim 1, and the Appellant has also not disputed this issue.

- 5.3 The Appellant puts forward that the skilled person setting out from the method according to document (D3) would have substituted air quenching for water cooling since he would have been taught from document (D1), page 331, paragraph 3, that air quenching or water cooling are common methods from which he would select the most appropriate one. The wording, according to document (D1), "Erst von dieser Temperatur ab bis hinunter auf 285°C, d.h. der zulässigen Eintrittstemperatur in ein Glasgewebe-Staubfilter, **kann** mit Wasserbedüsung gekühlt werden.", in particular with reference to the term "kann" would clearly show that water cooling is referred to only as an option which need not be complied with.

The Board cannot follow this argument. The passage of document (D1) preceding the above-cited phrase indicates that the chemical behaviour of the alkalies requires the use of cold air for cooling the by-pass

gases down to about 475°C. Interpreted in this context, the following phrase states that it is only from this temperature down to 285°C ... that it can be cooled with water spraying, which means that cooling of the by-pass gases with water spraying is not possible above a temperature of about 475°C.

The wording "... kann mit Wasserbedüsung gekühlt werden" cannot therefore be interpreted in the sense that in the said temperature range air quenching is suggested. The document (D1) in the cited passage provides rather a clear teaching that cooling of the by-pass gases is effected by a combination of air quenching and water spraying.

The Appellant has further referred to Figure 20.8 on page 334 of document (D1) in connection with the comment on the Figure that the alkali-laden by-pass duct is usually discarded or leached.

This prior art teaches that alkali dust is diverted from the by-pass duct in a precipitator interposed in the by-pass duct. Any combination of this teaching with the method known from document (D3) would necessarily incorporate the idea of arranging a precipitator in the by-pass duct and hence lead away from the subject-matter of Claim 1 which excludes that the by-pass gas stream passing to the primary precipitator first encounters a separate precipitator, but teaches the concept of passing the chlorides through the primary precipitator.

6. In the opinion of the Board, the other documents (D2) and (D4) cited in the opposition proceedings are no more relevant to the subject-matter of Claim 1 than those dealt with above. At the time of the oral proceedings before the Board, the documents (D2) and (D4) were also no longer discussed by the parties.

7. Summing up, the idea that in a method of producing clinker from raw material having a chloride content of 0.015 to 0.1 weight percent, air quenching of the kiln exit by-pass gas is employed so that the chloride components remain in the form of vapour or very small particles which are not caught by the primary precipitator eliminating thereby the arrangement of a separate precipitator upward of the primary precipitator, is not suggested by the prior art revealed taken individually or in combination.

As a consequence of the foregoing considerations the Board is convinced that Claim 1 is valid and can be maintained.

8. Claim 2 and Claim 3, respectively, concern a plant for carrying out the method according to Claim 1.

Therefore, the considerations presented above in respect of the presence of an inventive step with regard to Claim 1 apply also to the plant according to Claim 2 and according to dependent Claim 3.

Hence, these claims are also valid and are maintained.

9. *Costs*

- 9.1 The Respondent has requested that at least a part of the costs he incurred be paid by the Appellant.

A decision awarding costs under Article 104(1) EPC, being an exception to the norm that all parties meet their own costs, only arises if the particular circumstances of the case call for it. In the present case, the Appellant filed an alleged public prior use and a new document for the first time together with the Statement of Grounds of Appeal.

- 9.2 In the opinion of the Board, the type of costs being the subject of the request can only be additional costs incurred due to the late filing of the alleged public prior use and the new document (D6).

The Respondent held that the rather complicated drawings submitted in support of the alleged public prior use required a considerable additional effort including a journey of the Representative from Great Britain to the place of business of the Appellant in Denmark.

The Board takes the view that the study of the drawings produced by the Appellant cannot be regarded as an additional effort caused by the late filing of these documents because filing of the documents in due time would anyway have required such a study. The reason for the journey of the Respondent's Representative to Denmark is also not seen by the Board in the late filing of said documents but rather in the requirement to discuss the technical content of these documents.

A further point to take account of in the issue of costs is that it was not necessary to remit the case to the first instance for further prosecution which could have caused an undue increase of costs.

- 9.3 From the factual circumstances of the case no reason of equity can be recognised to make an exception to the principle that each party has to bear the costs he has incurred in the appeal proceedings. (Article 104 and Rule 66(1) EPC).

Order

For these reasons, it is decided that:

1. The appeal is admissible.
2. The decision under appeal is set aside.
3. The case is remitted to the first instance with the order to maintain the patent with the documents submitted during the oral proceedings.
4. The request for an apportionment of costs is refused.

The Registrar:

The Chairman:

N. Maslin

C.T. Wilson