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File Number: T 390/90 - 3.3.1
Application No.: 81 306 189.2
Publication No.: 0 056 200
Title of invention: Process for preparing and using a crystalline product

Classification: D21H 5/18

D E C I S I O N
of 15 December 1992

Applicant: Josep Maria Gussinyer, S.A.
Opponent: Conte, Pietro, avv.
Intending Intervener: Cartiere Paola Pigna S.p.A.

Headword: Crystalline paper filler/GUSSINYER, S.A.

EPC Articles 54(1)(2), 56, 105, 106(1), 111(1) and 112(1)(a), 114(1) and 115; Rule 66(1)

Keyword: "Admissibility of intervention of an assumed infringer during appeal proceedings" - "Legal status of Boards of Appeal" - "Non-equivalence of appeal and opposition proceedings" - "Boards' freedom not to refer to Enlarged Board: procedural economy"
"Novelty (yes) - second document incorporated by reference into the primary document - no disclosure of a continuous process in the light of common general knowledge at the relevant publication date"
"Inventive step (yes) - onus of proof regarding disputed effects"

Summary of Facts and Submissions

- I. The grant of European patent No. 0 056 200 in respect of European patent application No. 81 306 189.2 was announced on 23 September 1987 (cf. Bulletin 87/39). The patent was based on 3 claims, the only independent Claim 1 reading as follows:

"A method for preparing and using a crystalline product in the manufacture of paper comprising adding to an aqueous dispersion of cellulose fibres, before paper web formation, a filler product comprising $\text{CaSO}_4^{1/2}\text{H}_2\text{O}$ agitated in water or in the aqueous dispersion to form crystals of $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ characterised in that the method is carried out continuously and the filler product is free of aluminium sulphate, and in that the speed and duration of agitation, and the proportion of $\text{CaSO}_4^{1/2}\text{H}_2\text{O}$, are such as to form a lattice of individual crystals of $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$."

- II. A notice of opposition was filed on 21 June 1988 by Pietro Conte requesting that the patent be revoked on the grounds that its subject-matter lacked novelty and did not involve an inventive step. The opposition was supported, inter alia, by:

(5) US-A-2 304 361 and

(6) FR-A-1 005 978.

- III. By a decision delivered orally on 20 March 1990 with written reasons posted on 25 April 1990, the Opposition Division rejected the opposition.

The Opposition Division held that the subject-matter of the claims was novel because the cited documents did not disclose a continuous method for preparing and using the defined filler product in the manufacture of paper.

It also held that the subject-matter of the claim involved an inventive step, because the solution of the technical problem indicated in the patent in suit, namely, the saving of cellulose and of energy, the reduction of the risk of blockage of pipes and valves, and the improvement of the retention of both filler product and cellulose in the finished paper, could not be derived from the prior art documents.

- IV. Notice of Appeal was filed against this decision on 12 May 1990 by the Opponent, and the appeal fee was paid on the same date.

A Statement of Grounds of Appeal was submitted on 3 September 1990.

- V. Notice of Intervention pursuant to Art. 105 EPC was subsequently filed by Cartiere Paolo Pigna S.p.A. on 25 October 1990. It was based on the statement that proceedings for the infringement of the patent in suit had been instituted against it on 27 July 1990 before the Court of Bergamo. It also contained a reasoned statement of grounds for opposition. The required opposition fee, as well as the appeal fee were paid on the same date.

- VI. The Appellant argued that on the basis of the documents cited in section II above, of four other documents cited during the opposition proceedings, as well as on the basis of 18 additional documents filed during the appeal proceedings, the claimed subject-matter was not novel and did not involve an inventive step. Moreover, he contended that the subject-matter claimed extended beyond the content of the application as filed.

The novelty objections were principally based on the following documents submitted during the appeal proceedings:

- (16a) Certified translation of ES-A-413 205
- (22) US-A-222 430
- (27) US-Reissue 8 803, and
- (28) US-A-177 501.

It was argued that even if the claimed subject-matter could be considered novel, it would not involve an inventive step in the light of the disclosures of the cited documents, showing that the claimed features were known per se and that the combination of these features was obvious to the person skilled in the art. Moreover, the alleged advantages could be expected on the basis of the known effects of the claimed features.

With respect to the extension beyond the content of the originally filed application, he argued that the use of the aluminium sulphate now being disclaimed was an essential feature of the present process.

VII. The Intending Intervener also contested the patentability of the claimed process, but largely on the same grounds and evidence, save that in additional support of the argument that the claimed process did not provide unexpected advantages, he filed a test report on 5 May 1992.

VIII. The Respondent challenged the admissibility of the appeal under Rules 64 and 65 EPC and also objected to the allowance of the intervention under Article 105 EPC.

Moreover, he contested the above objections with respect to novelty and inventive step. On 11 November 1992, he

filed a certified English translation of a technical report produced by the Official Technical Consultant of the Court of Bergamo in the infringement action against Pigna S.p.A.

- IX. In two earlier communications issued on 14 January 1991 and 19 October 1992, the Board expressed the preliminary view that the intervention would be permissible.

This preliminary view was challenged by the Respondent on substantially the same grounds as the ones he relied upon in the course of subsequent oral proceedings. He also requested the postponement of the scheduled oral proceedings on the ground that an allegedly identical point had been referred to the Enlarged Board in case T 202/89. The Enlarged Board's decision in that case G 4/91 headnote published in OJ EPO 1-2 (1993), page IV was issued on 3 November 1992 and it was clear from it, as it was indeed from the reference itself, that the point at issue there differed from the one that called for decision in this case. In T 202/89 an intervention was sought when the first instance decision had become final, as no appeal had been filed, although the attempt to intervene was launched during the appeal period prescribed by Article 108 EPC.

After the issue of two further Enlarged Board decisions, namely G 7/91 and G 8/91 (headnotes published in OJ EPO 1-2 (1993), page IV, on 4 November 1992), which both dealt with legal questions which bore much greater relevance to the one in the present case, the Board informed all parties that in the light of these decisions the question of allowability remained an open one.

- X. Oral proceedings were held on 15 December 1992.

- XI. As a first step, and before the appeal proceedings proper, the Board dealt with the question of the allowability of the intervention, and heard all the parties on this specific issue, including the Intending Intervener, who was independently represented, although the Appellant's representative also had express authority to act for the Intending Intervener in case the attempt to intervene proved unsuccessful.
- XII. The Intending Intervener and the Appellant both argued that Appeal Boards under the European Patent Convention (EPC) were not set up as courts of law, nor did they act as courts of law, and were thus not de facto courts of law. They were, by contrast, merely parts of the general administrative organisation of the European Patent Office, so that appeals were no more than mere continuations of the (administrative) first instance, here the opposition, proceedings. This being the case, the reference in Article 105 EPC to opposition proceedings could fairly be construed as including appeal proceedings as well.

They also argued that, regardless of the legal status of the Appeal Boards, Article 106(1) EPC, by providing that appeals should have a suspensive effect, created a procedural link between oppositions and appeals, in the sense that oppositions continued or were "on foot" during the appeal stage, albeit only for the purposes of the appeal proceedings. Therefore, interventions under Article 105 EPC during the appeal stage were clearly allowable. This interpretation of Article 106(1), they argued, would satisfy the underlying intention of Article 105 EPC, that the validity of a European patent, which became the subject of infringement proceedings before a national court, should be centrally established by the European Patent Office.

Finally, they submitted that Article 115 EPC afforded a wholly inadequate opportunity to intending interveners to attack the validity of patents under which they had been sued, since it gave no right of audience.

XIII. In response to these arguments, the Respondent submitted that Article 106(1) EPC was suspensive only of the legal effects of first instance decisions, but did not thereby prolong or preserve their antecedent procedure, here the opposition, which was effectively terminated by the decision under appeal. The Appellant's submission that appeal proceedings were the legal equivalent of opposition proceedings, albeit in another guise, was, so he submitted, also contrary to the decision of the Enlarged Board of Appeal in G 7/91, which had dealt expressly with the essential difference between first instance (opposition) and appeal proceedings, and held that, whilst opposition proceedings were purely administrative, appeal proceedings were "administrative court proceedings". Accordingly, Article 105 EPC should be literally interpreted, and not extended to a wholly different type of proceedings, namely, appeals.

He further submitted that an intervention under Article 105 EPC at such a late stage could well lead to further delay, particularly if a wholly new and decisive point arose from the intervention, requiring a reference back to the first instance under Article 111(1) EPC, on the ground that a new case had been raised which could, in line with the Board's established jurisprudence, not be decided by way of appeal.

Finally, he submitted that Article 115 EPC afforded a fully adequate opportunity to intending interveners to attack the validity of patents already at risk during appeal proceedings, i.e. after the termination of the

opposition proceedings brought by others, despite the fact that this Article, unlike Article 105 EPC, gave no express right of audience.

- XIV. The Intending Intervener asked that the request for intervention under Article 105 EPC be allowed. The Appellant supported the above request.

The Respondent asked that this request be refused.

- XV. After deliberation by the Board, the Board's interlocutory decision to refuse the request for intervention was announced.

- XVI. The oral proceedings were then continued with respect to the appeal proper, with the Intending Intervener not being a party.

- XVII. The Board noted that a large number of documents were submitted for the first time in the appeal proceedings, and that the majority of them relate only to background art. It pointed out that pursuant to Article 114(2) EPC, such late filed evidence could be disregarded, in line with the established jurisprudence of the Boards of Appeal.

In the light of these observations, the Appellant was prepared to restrict his submissions regarding novelty and inventive step to the disclosures of the documents (5), (6), (16a), (22), (27) and (28).

- XVIII. The Appellant based his novelty objection on the combined teachings of documents (22), (27) and (28), or of documents (22) and (27). In this connection he drew attention to the reference in document (22) to document

(27), and also to the fact that document (27) was a "Reissue" (Reissued patent) of document (28).

He also argued, on the basis of the test report submitted by the Intending Intervener, that neither the absence nor the presence of aluminium sulphate, nor the continuity in the preparation of the crystals of $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ had any effect on the crystals or on the paper quality. In addition, the test report (Enclosures 1 and 2) submitted by the Respondent on 11 November 1992 showed no differences in crystals and paper quality. Therefore, the claimed process corresponded essentially to the process of document (6), which provided an improvement of the strength of the paper of 15 to 20% in comparison with a process using kaolin as paper filler.

XIX The Respondent contested the Appellant's submissions. With respect to the filed test reports he argued that they did not concern a continuous preparation and use of the crystalline filler product as claimed, and that this feature was essential to the formation of a lattice of individual crystals of $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ and, thus, to the achievement of the alleged advantages of the claimed process. In support of these advantages, he relied upon the declaration and tests made by Mr Omodeo filed on 14 March 1990.

XX. The Appellant requested that the decision under appeal be set aside and that the European patent No. 0 056 200 be revoked.

The Respondent requested that the appeal be dismissed.

XXI. At the conclusion of the oral proceedings, the Board announced its decision to dismiss the appeal.

Reasons for the Decision

1. The appeal complies with Articles 106 to 108 and Rule 64 EPC and is admissible. Since the Respondent did no longer raise an objection to the admissibility of the appeal during oral proceedings, the Board sees no reason to give details for this finding.

2. Admissibility of intervention during appeal stage under Article 105 EPC
 - 2.1 Although neither the Appellant nor the Respondent, nor for that matter the Intending Intervener, had made a formal request for a reference of this point to the Enlarged Board of Appeal, the Board accepts that this point of law could be regarded as being of sufficient importance to call for such a reference. Under Article 112(1)(a) EPC, the Boards have discretionary power to refer any question to the Enlarged Board, either if a request for such reference had been made by a party, or if an important point of law arises and, in both cases, if the Board considers that a decision by the Enlarged Board is required to ensure uniform application of the law or to decide upon the point of law that had arisen. It goes without saying that if the point of law is not an important one, or even if it is, no serious question arises in relation to it, there is no need for a reference. However, even if a serious question does arise in relation to an important question of law, it is still open to the Board not to refer the matter to the Enlarged Board. Finally, if a Board refuses a party's request for a reference, it is obliged to give reasons in its final decision for such refusal. The same provision does not, however, extend to the case where refusal to refer is not made in response to such a formal request.

In the Board's view the point of law involved here is undoubtedly an important one, so that, on the face of it, it could, of its own motion, refer the matter to the Enlarged Board. However, for the various reasons given below, the Board has decided not to refer but to give a final decision in this appeal on the above issue.

- 2.2 In the Board's judgment, the underlying and decisive point of law concerning the nature of appeal proceedings has already been dealt with and decided, most recently by the Enlarged Board in decisions G 7/91 and G 8/91, as well as by a number of earlier cases dealing with the nature of appeals, as distinct from first instance proceedings in relation, (mainly) to the submittal of late filed evidence and other matter that raises a case that is either entirely new or far removed from the one that had led to the decision under appeal (cf. T 97/90 (headnote published OJ EPO 11/1992); T 26/88 (OJ EPO 1991, 30); T 326/87 (published OJ EPO 1992, 522); and T 611/90 (headnote published OJ EPO 3/1992)).

The most significant passage on this point in G 7/91 is to be found at paragraph 7 of the Reasons, where it is stated as follows:

"Das Einspruchsverfahren ist ein reines Verwaltungsverfahren im Gegensatz zum Beschwerdeverfahren, das als ein verwaltungsgerichtliches Verfahren anzusehen ist, wo eine Ausnahme von allgemeinen verfahrensrechtlichen Grundsätzen, wie z.B. dem Verfügungsgrundsatz, viel stärker begründet werden müßte als im Verwaltungsverfahren."

This finding⁽¹⁾ echoes an earlier decision, namely G 1/86 (OJ EPO 1987, 447) of the Enlarged Board, which declared that the Boards of Appeal are courts (official German language and French translation) or act as courts (English translation). The real point at issue, however, is not whether the Boards of Appeal are or are not courts, but whether appeal proceedings are either equivalent or closely analogous to opposition proceedings. In this respect, decisions G 7/91 and G 8/91 clearly confirm the previous clear and long line of judicial authority that they are not. This therefore disposes of the Intending Intervener's submission, also espoused by the Appellant, that appeal proceedings are no more than opposition proceedings in another guise.

- 2.3 The question of law expressly decided by G 7/91 and G 8/91 was the extent to which Rule 66(1) EPC, giving effect to Article 111(1) EPC, could be said to affect the interpretation of Rule 60(2), last sentence, EPC, which is clearly limited to opposition proceedings. Any decision on this point must involve establishing the outer limits of the investigative powers conferred upon Boards of Appeal by Article 114(1) EPC, which, at least in the English version, is rather peremptorily worded: "in proceedings before it the European Patent Office shall examine the facts of its own motion; it shall not be restricted in this examination to the facts, evidence and arguments provided by the parties and the relief sought". The legal issue under Rule 60(2) EPC arises directly from this allegedly limitless power, which could be said to continue to exist even when an opposition - and arguably by virtue

(1) Expressly approved in the recently issued decision of the Enlarged Board in case G 10/91, paragraph 18 of the reasons: "... the appeal procedure is to be considered as a judicial procedure ...".

of the term mutatis mutandis in Rule 66(1) EPC - an appeal, had been withdrawn. The Enlarged Board clearly held that the difference between appeal and opposition proceedings was so great, that such an investigative power did not survive the withdrawal of the appeal, so that Rule 60(2), which is in terms confined to oppositions, had to be literally construed.

The selfsame type of legal issue arises in the present case, because Article 105 EPC is likewise expressly limited to oppositions. Is there, or is there not, sufficient identity or similarity between appeal and opposition proceedings to permit, by analogy, the application of this Article to proceedings which it literally omits to mention? In the light of the jurisprudence referred to above, and in particular on the basis of the two latest decisions of the Enlarged Board G 7/91 and G 8/91⁽²⁾ the answer is clearly 'No', so that on this point, too, the scope of the term mutatis mutandis in Rule 66(1) EPC must be severely limited by the essential and fundamental dissimilarity between the two types of proceedings: the former administrative, and the latter judicial. Accordingly, the Board finds that the important point of law (the procedural extent of Article 105 EPC) has, by clear implication, already been fully and unambiguously resolved, so that really no question of law can arise for discretionary reference to the Enlarged Board.

Even if the Board were wrong in its finding, it would still, as was said before, be open to it to decide the issue here and now and, as was previously stated, no reasons need be given under Article 112 EPC for such a course of action. The Board wishes to state that the

(2) Now clearly endorsed in G 10/91 supra ibid.

overriding requirement of procedural economy, involving the swift, efficient and cost-effective resolution of all matters in dispute before the EPO, including the Boards of Appeal, is of such importance and significance that the discretionary power to refuse to refer (Article 112(1) EPC) can properly be based upon it.

In this connection, as the Respondent rightly submitted, an intervention at such a late stage could in some instances, particularly if a wholly new or substantially dissimilar case was advanced by the Intervener, lead to remittal to the first instance (Article 111(1) EPC), and even if it were possible to decide on a "fresh" case raised by the Intervener in the course of an appeal, dealing with the matter at such a late stage would be bound, in the nature of things, to detract from procedural economy.

Lastly, Article 115 EPC does, in the Board's judgment, provide a sufficient outlet for non-parties to attack patents challenged by others in what in effect are centralised revocation ("opposition") proceedings⁽³⁾, as well as in the course of appeals from decisions in such proceedings, since Article 115 sets no upper time limit to the presentation by persons wishing to make adverse observations concerning the patentability of inventions, the subject of patent applications/patents.

Thus, a decision by this Board on the procedural point here at issue fully safeguards procedural economy without depriving the intending intervening party of the opportunity to state his case. Indeed, the Board notes that the Appellant's representative was also empowered and

(3) Confirmed in G 10/91, paragraph 2 of the reasons.

did act for the Intervener, who could therefore not be said to have been deprived of a fair hearing on the case he had put forward originally, by way of intervention.

Finally, concerning the Respondent's submissions on Article 106(1) EPC (suspensive effect), the Board accepts them in their entirety.

2.4 Accordingly, the Board finds that the intervention under Article 105 EPC is not allowable. In consequence, the Intervener was excluded from the further proceedings.

3. Amendments under Article 123 EPC

3.1 In the Board's judgment, the present claims meet the requirements of Article 123(2) EPC. Regarding the feature in Claim 1 that the filler product is free of aluminium sulphate, the patent application as filed clearly disclosed that the preparation of the filler product, i.e. the crystalline calcium sulphate dihydrate, could be carried out without the presence of aluminium sulphate (cf. page 1, lines 7 to 13; page 2, line 38 to page 3, line 5; and page 4, lines 30 to 34). Since the objection of the Appellant under this Article were only based on the disclaimer with respect to the use of aluminium sulphate, no further details are necessary for this finding.

Moreover, because the claims of the present patent have not been amended during the opposition proceedings, no objections can arise under Article 123(3) EPC.

4. Novelty

4.1 The Appellant based his novelty objection on the combined teaching of documents (22), (27) and (28), or of documents (22) and (27).

4.2 According to the established jurisprudence of the Boards of Appeal when assessing novelty, the disclosure of a particular document must always be considered in isolation; in other words it is only the actual content of a document which may destroy novelty. However, in a case where there is a specific reference in a first prior document to another prior document, then in construing the teaching of the first document the presence of such specific reference may make it legitimate to consider part or all of the disclosure of the other document as being part of the disclosure of the first document (cf. for instance T 153/85, OJ EPO 1988, 001, particularly under 4.2 of the Reasons; and T 67/88 (unpublished)).

In the present case, as will be explained below, document (22) describes the use of a crystalline paper filler in the manufacture of paper, but it expressly refers to document (27) with respect to the preparation of the crystalline filler. Thus, in the line of the established jurisprudence, in assessing novelty, the disclosure of document (22) can be combined with that of document (27).

However, neither document (22) nor (27) contain such a specific reference to document (28). It is true that document (27) comprises the following bibliographic data: "Specification forming part of Letters Patent No. 177 301, dated May 9, 1876; Reissue No. 8 803, dated July 15, 1879; application filed June 23, 1879". These bibliographic data only indicate that document (27) follows from document (28) and, therefore, do not give the reader of document (27) the slightest incentive to construe the technical teaching of document (27) in the light of part or all of the disclosure of document (28). Consequently, the permissible combined disclosures of documents (22) and (27) and the disclosure of document (28) must be considered separately.

4.3 Document (22), which relates to a process for the manufacture of paper, describes the preparation of paper pulp containing acicular crystallised sulphate of lime possessing the quality of felting or matting with the fibre of the pulp (cf. the left-hand column, paragraphs 2 and 3). In addition it indicates that the sulphate of lime can be combined with or added to the fibrous paper pulp "in any convenient and effectual way", and that it can be prepared by treating dehydrated gypsum with water according to document (27) (cf. the left-hand column, last paragraph to the right-hand column, paragraph 2).

Document (27) describes the treatment of the dehydrated gypsum with water consisting of mixing the dehydrated gypsum and water together in a tank of suitable form and size, in the proportion of about 1 pound of gypsum to 4 to 7 pounds of water, and of continually stirring or agitating the mixture for about forty minutes, at the end of which time the tendency of gypsum to set or crystallise in a mass is passed, and is succeeded by acicular crystallisation (cf. Claim 1 and page 1, left-hand column, paragraphs 2 to 4).

4.4 The preparation of crystallised sulphate of lime according to document (27), involving the stirring of the mixture of dehydrated gypsum and water for about forty minutes and, subsequently, the crystallisation of the hydrated form of gypsum, does, in the Board's view, clearly relate to a discontinuous process, which is in contrast to Claim 1 of the disputed patent.

Moreover, the disclosure in document (22), that the crystalline hydrated gypsum so obtained can be added to the paper pulp "in any convenient and effectual way" could only destroy the novelty of the claimed continuous preparation and use of the present paper filler if the

skilled person, having regard to his common general knowledge possessed by him at the publication date of document (22), would have immediately understood that "any convenient and effectual way" stood for the continuous preparation of the paper filler in the form of a suspension, and the continuous use of this product in the paper manufacturing (cf. T 229/90 of 28 October 1992 (unpublished), section 4, paragraph 6). Since the document (22) was published in 1879, it is highly unlikely that at that time the manufacture of paper was carried out continuously, or that such a continuous process involved the continuous preparation and use of the particular filler.

Therefore, in the Board's judgment, documents (22) and (27), cross-linked by reference, do not disclose the claimed continuous preparation and use of the paper filler.

- 4.5 The disclosure in documents (22) and (27) that the crystalline paper filler consists of acicular or needle-like particles which are suitable in the felting and matting together of the cellulose fibres of the paper pulp (cf. (22), left-hand column, third paragraph, and (27), page 1, left-hand column, paragraph 3 to the right-hand column, paragraph 4), does not necessarily mean, as submitted by the Appellant, that this filler product is equivalent to the filler product which is prepared and used in Claim 1 of the patent in suit. Regarding the claimed functional feature that the speed and duration of agitation, as well as the proportion of the calcium sulphate hemihydrate are such as to form a lattice of individual crystals of calcium sulphate dihydrate, the Board notes that according to the patent in suit this lattice has a relatively open structure of needle-like crystals, which in combination with the cellulose fibres,

provide an unusual consistency, as a result of which improved dewatering properties, resulting in a considerable saving in energy, and paper having an improved resistance are obtained (cf. particularly page 2, lines 3 to 5 and lines 55 to 64, and figures 2 and 3). Moreover, according to Respondent's submissions and the declaration of Mr Omodeo, the continuity of the preparation and the use of the crystalline filler product are both essential features of the claimed process (cf. the declaration, section 7, last sentence). Therefore, taking into account that documents (22) and (27) do not describe such a continuous preparation and use of the crystalline filler product, and that the Appellant has not provided any evidence that the disclosed crystalline product is the same as that obtained according to the claimed process, the Appellant's submission in this respect is also rejected.

- 4.6 Consequently, in the Board's judgment, the claimed process differs from that disclosed in documents (22) and (27), because according to the claimed process the preparation and the use of the crystalline calcium sulphate dihydrate are carried out continuously, and the crystallisation conditions are such that a lattice of individual crystals of the dihydrate is obtained.
- 4.7 Since the Appellant disputed the novelty of the subject-matter of Claim 1 with respect to document (28) only in combination with the teaching of documents (22) and (27), the Board sees no need to consider the novelty question in connection with the teaching of document (28) in isolation.
- 4.8 Accordingly, in the Board's judgment, the subject-matter of the claims is novel.

5. Inventive step

- 5.1 The Board agrees with the Appellant's submission, that the closest state of the art is the combined disclosure of documents (22) and (27).

In the light of this closest state of the art, which has been discussed above in relation to the issue of novelty, the technical problem to be solved by the patent in suit is the provision of a crystalline calcium sulphate dihydrate paper filler, by mixing calcium sulphate hemihydrate with water, which allows an easy and energy-saving dewatering of the wet paper mass, and provides paper of a higher quality making it possible to reduce the amount of cellulose if the usual quality is desired (cf. the patent specification, page 2, lines 3 to 5 and lines 51 to 64, and page 3, lines 47 to 49).

- 5.2 According to Claim 1 of the patent in suit, this technical problem is essentially solved by a continuous preparation and use of the crystalline filler product in the paper manufacture, wherein the preparation of the crystalline filler product is carried out by agitating calcium sulphate hemihydrate in water or in the aqueous dispersion of cellulose in such a way with respect to the speed and duration of agitation, and the proportion of the calcium sulphate hemihydrate, that a lattice of individual crystals of calcium sulphate dihydrate is formed.

- 5.3 Having regard to the passages of the patent specification indicated in paragraph 5.1 above, and the declaration of Mr. Omodeo with respect to experimental results of the present process (cf. particularly paragraphs 11 and 12), the Board is satisfied that the present technical problem has been solved.

It is true, that document (6) discloses a crystalline paper filler consisting of hydrated calcium sulphate that improves the resistance of paper by 15 to 20% compared with paper containing kaolin as a filler, or allows a reduction of its cellulose content if the same resistance is acceptable (cf. page 2, left-hand column, paragraphs 2 and 3). However, the Appellant's submission that the present process would not provide an improvement with respect to the paper resistance and the saving of cellulose is unsupported, and is refuted by the Respondent. In this situation, where the Board is unable to establish the facts of its own motion, it is the party whose argument rests on these alleged facts who loses (here the Appellant) (cf. for instance T 219/83, OJ EPO 1986, 211, last two paragraphs of section 12 of the Reasons). Thus, the Appellant's submission on this issue fails. Moreover, the Board notes that document (6) does not describe anything about the dehydration properties of the wet paper mass.

In addition, the Appellant submitted, by referring to the test report filed by the Intending Intervener on 5 May 1992, and the Respondent's test report filed on 11 November 1992, that neither the presence of aluminium sulphate, nor the continuity in the preparation and use of the paper filler has any effect on the crystal form or on the paper quality. The first test report deals with experiments using a freshly prepared filler suspension, or a filler suspension aged for 4 days, both of which contained, or did not contain aluminium sulphate (cf. page 2, section 2.2). The second test report (cf. particularly page 17, second paragraph, and Enclosures 1 and 2) deals with a comparison between a crystalline filler prepared from calcium sulphate hemihydrate and a filler prepared from calcium sulphate anhydrite III (another form of dehydrated gypsum), whereby (according to

Encl. 1) the prepared suspensions are used in the course of 30 minutes, and (according to Encl. 2), the suspensions are used after periodically stirring them for periods of from 6 to 24 hours. Therefore, these test reports do not include the claimed feature that the filler is continuously prepared in the form of a suspension and continuously used in the paper manufacture. Thus, Appellant's submission based on these test reports cannot be accepted by the Board on the ground of lack of credible evidence.

5.4 It remains to be decided whether, in view of the technical problem to be solved, the requirement of inventive step is met by the claimed process in the light of the cited documents (22), (27), (28), (5), (6) and (16a).

5.4.1 As already indicated above (cf. section 4.4), the cross-referenced documents (22) and (27) disclose the preparation of a crystalline acicular or needle-like form of calcium sulphate dihydrate having felting or matting properties, as well as its use in the manufacture of paper, wherein both the preparation and use is to be considered as a batch-wise process. Thus, they do not contain any incentive for the skilled person to perform the preparation and use of the present filler continuously, and in such a way that it forms a lattice of individual crystals, which - as indicated in the description of the present patent (cf. page 2, lines 45 to 65) - provides an open consistency and, consequently, the advantages which are necessary in order to solve the above-defined technical problem.

5.4.2 Document (28) describes the treatment of dehydrated and ground gypsum with water until the tendency or ability to set and harden has been overcome (cf. left column, paragraph 4 and right-hand column, paragraph 2). It also

discloses that the admixture of the crystalline product formed with water may be used directly, for instance in the manufacture of paper and in the process of the finishing of bleached cotton goods (cf. the right-hand column, paragraph 3 and the left-hand column, paragraphs 2 and 3). In the Board's judgment, the direct use of the admixture with water, in the light of the old publication date of May 1876, does not give the slightest hint to the skilled person that the above-defined technical problem could be solved by the claimed continuous preparation of the filler in the form of a suspension and its continuous use. Moreover, the further indication in this document that the treatment of the dehydrated gypsum with water can be carried out by grinding and that the crystalline product can be supplied to the consumer as a dry, impalpable dust or powder, clearly leads away from the claimed process, wherein the particular lattice of individual crystals must be formed (cf. (28), right-hand column, paragraphs 2 and 3, and the claim which only relates to the impalpable powder).

- 5.4.3 Document (5) relates to the preparation of a paper filler, wherein dehydrated gypsum is agitated with water until the gypsum has passed through its setting period, and is transformed into long needle-like masses which interlock and mat, causing the material to bulk up very greatly (cf. the left-hand column, lines 8 to 24). Moreover, it describes that, for example, a mixture of 10 parts of gypsum and 100 parts of water produces a semi-solid jelly-like mass which will set up to a considerable depth upon a Foudrinier screen even without the admixture of paper pulp (cf. the left-hand column, lines 24 to 29). As submitted by the Respondent, and as stated by Mr Omodeo in his declaration of 14 March 1990 (cf. sections 3, 4 and 5), the Board finds that the skilled person, faced with the above-defined technical problem, would not take this prior

art process into consideration because of the likelihood of blockages in pipes, or of other possible obstructions in fast and continuously operating modern paper manufacturing machines, and the risk of forming of lumps which would lower the quality of the paper, and drying problems of the wet paper mass.

5.4.4 Document (6) describes the preparation of a paper filler in the form of a colloidal suspension which does not form a precipitate during a period of several weeks (cf. page 1, paragraph bridging both columns and the "Résumé"). Moreover, this document describes that the fine crystals can be separated by filtration, dried and roughly broken (cf. page 1, right-hand column, paragraph 5, last sentence, and page 2, last sentence of the "Résumé"). Therefore, this document does not give the skilled person any hint as to the solution of the present problem, which involves the continuous preparation and use of the filler in the form of a suspension, which - as submitted by the Respondent and as stated by Mr Omodeo in his declaration - must be continuously agitated in order to avoid precipitation (cf. the declaration of 14 March 1990, section 6 under points (1) and (4), and section 9) and finally leads to the claimed crystalline structure.

5.4.5 Document (16a) relates to a process for the production of crystalline calcium sulphate dihydrate in a very few seconds and at a high concentration, wherein calcium sulphate hemihydrate is added separately, but at the same time as water, into a zone of great agitation generated by a high-speed shearing device, which rapidly produces compressions and decompressions as well as supersonic vibrations, in order to obtain crystals having a very small grain size, so that they can be easily reacted with another component, such as sodium aluminate or kaolin (cf. the specification, page 1, paragraph 1 to page 2,

paragraph 2). Examples 1 to 3, 5 and 6 show that the crystalline calcium sulphate dihydrate and its reaction products with other components are extremely fine products in terms of grain size. Example 5 also describes that the reaction-product obtained by separately and continuously adding calcium sulphate hemihydrate, kaolin, sodium aluminate and water to the shearing device, whilst maintaining the same proportions, has interesting properties for the paper manufacture. Although Example 5 describes the continuous addition of these components to the shearing device, and also that the filler product will permit a closed circuit in a paper factory, in the Board's judgment, this document does not suggest to the skilled person that the above defined technical problem could be solved by the continuous preparation of the present crystalline paper filler in the form of a suspension and the continuous use of the stirred suspension in order to provide the functionally claimed crystalline structure.

5.4.6 Taking into account the prior art cited above, the Board finds that it would not have been obvious to the skilled person to prepare the crystalline calcium sulphate dihydrate paper filler, by using calcium sulphate hemihydrate as a starting compound, and in a continuous manner at the site of the paper production apparatus, let alone to add the crystalline filler as obtained in the form of a suspension, whilst keeping the suspension agitated, continuously to the paper pulp, and to use these conditions in the preparation of the crystalline filler so that the claimed crystalline structure is obtained.

5.4.7 In conclusion, the Board finds that the process according to Claim 1 does involve an inventive step.

Dependent Claims 2 and 3, which relate to the preferred embodiments claimed in Claim 1, are also valid for the reasons stated above.

Order

For these reasons, it is decided that:


The appeal is dismissed.

The Registrar:



E. Gorgmaier

The Chairman:



K.J.A. Jahn