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**D E C I S I O N**  
**of 4 April 1995**

**Case Number:** T 0252/91 - 3.2.2

**Application Number:** 85302798.5

**Publication Number:** 0161831

**IPC:** A61C 7/00

**Language of the proceedings:** EN

**Title of invention:**  
Crystalline alumina orthodontic bracket

**Applicant:**  
JOHNSON & JOHNSON DENTAL PRODUCTS COMPANY

**Opponent:**  
-

**Headword:**  
-

**Relevant legal provisions:**  
EPC Art. 56, 109  
EPC R. 67

**Keyword:**  
"Inventive step (yes) - non-obvious use of a known material"

**Decisions cited:**  
G 0002/88, T 0039/82, T 0598/88, T 0666/89

**Catchword:**  
-



Case Number: T 0252/91 - 3.2.2

**D E C I S I O N**  
of the Technical Board of Appeal 3.2.2  
of 4 April 1995

**Appellant:** JOHNSON & JOHNSON DENTAL PRODUCTS COMPANY  
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New Jersey 08520 (US)

**Representative:** Jones, Alan John  
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**Decision under appeal:** Decision of the Examining Division of the European Patent Office dated 23 May 1990 refusing European patent application No. 85 302 798.5 pursuant to Article 97(1) EPC.

**Composition of the Board:**

**Chairman:** H. J. Seidenschwarz  
**Members:** M. G. Noel  
J. H. Van Moer  
R. A. Lunzer  
M. K. S. Aúz Castro

### Summary of Facts and Submissions

- I. The decision to refuse European patent application No. 85 302 798.5 (publication No. 0 161 831) was signed by all members of the Examining Division on 24 January 1989 and passed on to the Formalities Officer. The decision was dispatched on the 27 January 1989.
- II. On the 25 January 1989 the Appellant had filed a request for oral proceedings which was not taken into account in the decision.
- III. The Appellant lodged an appeal against this decision and requested its cancellation, the acceptance of the 8 claims without further amendment, alternatively, with amendments and the refund of the appeal fee on the basis that the Examining Division committed a substantial procedural violation in failing to appoint oral proceedings following its telex request of 25 January 1989.
- IV. The Examining Division granted interlocutory revision and set aside its decision on the basis that the decision had left the office after the receipt of the request for oral proceedings. The tenor of the decision of 27 January 1989 was, however, considered not to be affected by the Grounds of Appeal. Therefore, interlocutory revision was, as expressly stated, not made on substantive grounds. The decision on the reimbursement of the appeal fee was postponed.
- V. After oral proceedings held on 26 March 1990 the application and the reimbursement of the appeal fee were refused.

VI. Independent Claims 1 and 6, on which the decisions of 27 January 1989 and 26 March 1990 were based, read as follows:

"1. An orthodontic bracket characterised in that it comprises as a load bearing member essentially monocrystalline alumina."

"6 A essentially monocrystalline alumina orthodontic bracket comprising a base member including a surface intended for adhesive contact with a tooth, and a body member extending from said base member, wherein said surface includes an undercut portion for enhancing the mechanical adhesion of said surface to an orthodontic cement."

VII. The reasons for the refusal were given in writing on 23 May 1990 and reiterated in substance the grounds of the previous decision. It was held that the subject-matter of the application did not involve an inventive step having regard to the prior art documents:

- (2) US-A-4 122 605, and
- (3) US-A-4 219 617.

Taking account of the ceramic orthodontic bracket described in document (3), in which high alumina ceramic materials or ceramics of comparable properties were used, such as polycrystalline glass-ceramics, the subject-matter of independent Claims 1 and 6 differed essentially by the load bearing member being made of monocrystalline alumina. Since this material was known from document (2) for its better mechanical strength and flexibility, the skilled person would try the suggested material substitution in the orthodontic bracket according to document (3) in view of its known properties and predictable effects. Document (2) was particularly relevant because it related to the

neighbouring technical field of implant elements for dental and orthopaedic surgery and was intended to replace materials having poor mechanical strength such as polycrystalline ceramics, also used in document (3).

The present case could be compared with the examples (A1)(iii) given in the Guidelines for Examination C-IV, 9.8, referring to the use of a well known material employing the known properties of that material, as being obvious.

The refusal of the reimbursement of the appeal fee was based on the fact that the request for oral proceedings was filed after the decision had left the sphere of control of the Examining Division and was already in the general bulk of mail where it could no longer be sorted out. Therefore, the decision of 27 January 1989 was not the consequence of a substantial procedural violation.

With reference to decision T 598/88 the Division regarded it as appropriate to grant interlocutory revision taking into account the fundamental right of a party to oral proceedings in the first instance and in order to avoid a remittal of the case from the Board of Appeal for formal reasons.

VIII. The Appellant lodged an appeal against that decision and filed a reasoned Statement of Grounds, and paid the appeal fee all on 27 July 1990.

In its response of 29 October 1992, to a communication of the Board, the Appellant specified its requests more closely and submitted two sets of claims with corresponding adapted descriptions, according to a main and an auxiliary request. Claims 1 to 8 according to the main request are identical to the set of claims refused by the first instance.

IX. In its written submissions the Appellant argued substantially as follows:

The materials used in the orthodontic bracket disclosed in document (3) are confined to fired ceramics such as non-crystalline or polycrystalline ceramics, from which monocrystalline materials are excluded. Document (2) recommends single crystalline sapphire ceramics, which are better in mechanical strength, but for dental implants, i.e. for a totally different application. Accordingly, document (2) could not provide any basis for prediction with any certainty that monocrystalline alumina was a suitable material from which to form orthodontic brackets having, in addition, a much more aesthetic appearance. Furthermore the Examining Division committed a substantial procedural violation in rectifying its decision of 27 January 1989, but then refusing to grant any of the relief which was sought, with the consequence that two appeal fees had to be paid in respect of the same appeal.

X. The Appellant requested

- cancellation of the contested decision
- grant of a patent on the basis of either the main or auxiliary request
- reimbursement of one appeal fee
- as an auxiliary request, appointment of oral proceedings.

## Reasons for the Decision

1. The appeal is admissible.

2. *Amendments*

The amendments made to the present claims are fairly based on the application as filed. In particular, the term "essentially monocrystalline alumina" which expresses the essential feature of both Claims 1 and 6 is supported on page 6, last paragraph. Therefore the subject-matter of the claims and the corresponding amendments brought to the description are not open to objection under Art. 123(2) EPC.

3. *Novelty*

Although both documents are referred to in the prior art section of the application in suit, only document (3) relates to a ceramic orthodontic bracket and, for this reason, it is considered as the closest prior art.

Document (3) sets the same demands as in the present application, in the sense of looking for more satisfactory aesthetic appearance and sufficiently high mechanical properties to withstand the severe mechanical stresses placed upon the bracket in use (column 1, lines 6 to 49). Further, document (3) recommends using a ceramic material which is a naturally white or off-white composition or may also be transparent or translucent depending on the ceramic composition (column 6, lines 41 to 46). Though high alumina ceramics are preferred

materials, ceramics of comparable properties produced from other ceramic compositions such as, for example, polycrystalline glass-ceramics, can also be used when a ceramic having a desired combination of properties is required (column 7, lines 42 to 49).

However, no mention is made of the possibility of using, instead, monocrystalline alumina which is the material selected in the present application for both still better mechanical strength and transparency properties. With respect to the teaching of document (3), the subject-matter of both Claims 1 and 6 is distinguished, therefore, by the load bearing member being essentially monocrystalline alumina.

Document (2) relates to what is called a "stomatic element" of single crystalline sapphire ceramics ( $\alpha$ - $\text{Al}_2\text{O}_3$ ) which, among others things, has better mechanical strength than various polycrystalline ceramics, (column 1, line 64 to column 2, line 2). However, this element is specifically provided for use in a dental implant and in an orthopaedic surgical member for treating a broken bone (column 1, lines 6 to 11 and column 5, lines 13 to 17). No reference is made to any other application of the material, in particular for making an orthodontic bracket in accordance with the subject-matter of Claims 1 and 6 of the application in suit.

Since none of the documents reveals the combination of all the features of Claims 1 or 6, their subject-matter must be regarded as novel within the meaning of Article 54(1) EPC.



4. *Inventive step*

4.1 It results clearly from the background section of the application that orthodontic brackets made of ceramic materials, for example those of document (3), not only suffer from strength limitations but also are not fully satisfactory from an aesthetic point of view because the colour of ceramic rarely matches natural dentition. The dual problem thus set out in the application is both to attain mechanical strength and a desired aesthetic effect (cf. page 2, lines 8 to 10 and from line 29 to page 3, line 7).

This problem is solved by the essential feature recited in both Claims 1 and 6 according to which the bracket is made of essentially monocrystalline alumina and in particular of crystalline alpha-alumina (Claim 7).

As also explained in the description (cf. page 3, second paragraph and page 15, second paragraph), the strength and transparency properties of crystalline alpha-alumina permit the provision of orthodontic brackets that are much more aesthetic than metal brackets while they also alleviate the strength limitations of ceramic brackets.

4.2 The skilled person, under the circumstances the author of the present application, starting from the teaching of document (3) and looking for a more aesthetic, transparent material, had necessarily considered document (2) since the latter is mentioned in the application as filed. This document, however, is directed to implants for dental surgery, i.e. to elements invisible from outside and made of materials selected with the sole view to increasing the mechanical strength of the implant. Though monocrystalline ceramics selected there are also used for other beneficial properties such as better flexibility and affinity with

the ambient tissue, the material is never exploited for its colour or other aesthetic properties, which play no role in the case of an implant.

Therefore, the skilled person could not have been prompted by this disclosure to choose a material suitable for properties which were neither disclosed nor suggested, even if they were supposed to be inherent in the material. Information which is hidden in a document is not really made available to the person skilled in the art, so that it cannot be reasonably assumed that he would seriously contemplate taking advantage of it (G 2/88, OJ EPO, 1990, 93, point 10.1 and T 666/89, OJ EPO 1993, 495, point 7).

Further, in deciding whether the application of a measure (here a material) known in the same or neighbouring field is obvious, the problems to be solved with this measure in the prior art and in the case to be decided must be taken into account (T 39/82, OJ EPO 1982, 419, point 7.3). As was demonstrated before, the aesthetic problem is not addressed in document (2). Thus, the skilled person having regard to the teaching of document (2) would certainly not have expected that the monocrystalline alpha-alumina used there as a strengthened implant would be also suitable for an orthodontic bracket, in view of its transparency.

- 4.3 The skilled person would not be looking merely for a material having better strength properties, but rather selecting a material to meet the requirements of both strength and appearance, simultaneously. The example taken from the Guidelines (C-IV, 9.8 (A1)(iii)) to support the view that no inventive step is present with respect to the combination of documents (3) and (2), is not appropriate in the present case. According to this example, an invention which consists merely in a new use

of a well-known material employing the known properties of that material may be obvious. But as was stressed before, monocrystalline alumina was proposed in document (2) only for one of the advantageous characteristics required in the application in suit, which meets only partially the problem set.

Instead, the present invention resides in the new and non-obvious use of a known material on the basis of a property left unexploited until now. What is determinative in the present case for the assessment of the inventive step of the solution, is that monocrystalline alumina was used for the first time for its transparency with the view to making an aesthetic orthodontic bracket. Therefore, there is no link between the present use and the prior use of that material.

- 4.4 For all the above reasons the specific use of monocrystalline alumina for making orthodontic brackets according to the subject-matter of both independent Claims 1 and 6 of the main request was not derivable in an obvious manner from the combination of documents (3) and (2). Accordingly these claims involve an inventive step within the meaning of Article 56 EPC.

Examination of the remaining features of Claim 6 can be dispensed with since the non-obviousness of one essential feature is sufficient to render the whole arrangement inventive.

5. *Reimbursement of the appeal fee*

According to Rule 67 EPC reimbursement of appeal fees shall be ordered in the event of interlocutory revision or where the Board of Appeal deems an appeal to be allowable, if such reimbursement is equitable by reason of a substantial procedural violation. Article 109(1)

EPC stipulates that the department whose decision is contested shall rectify its decision if it considers the appeal to be admissible and well founded. Otherwise the appeal shall be remitted to the Board of Appeal (Article 109(2) EPC). The Examining Division deviated from this provision insofar as it granted interlocutory revision although it did not consider the appeal to be well founded on substantive grounds and furthermore though it considered the issuing of the decision of 27 January 1989 refusing the application without previous oral proceedings to be justified because the request for oral proceedings had been filed too late to be taken into account. Even according to the reasons given by the Examining Division for its decision of 26 March 1990 (reasons given on 23 May 1990) there was no reason to grant interlocutory revision.

Decision T 598/88 on which the Examining Division relied as justifying the grant of interlocutory revision is not relevant to this case because there the facts were completely different. In T 598/88 the request for oral proceedings was filed 20 days before the decision was taken and the failure to have oral proceedings was held to be a substantial procedure violation. In the case under consideration, however, the decision had already left the Examining Divisions sphere of control when the request for oral proceedings arrived. Therefore, the issuing of the decision of 27 January 1989 did not involve a substantial procedural violation as the Examining Division correctly stated in its last decision.

A substantial procedural violation was however committed by the Examining Division when it granted interlocutory revision although the prescribed requirements were not fulfilled. The procedure followed by the Examining Division has had the effect that it refused the

application twice on the same grounds, and thereby forced the Appellants to appeal twice on the same factual and legal basis and to pay the appeal fee twice.

Had the Examining Division correctly remitted the appeal to the Board of Appeal the second appeal fee would not have incurred. Therefore, it is equitable that this appeal fee be reimbursed.

### Order

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

1. The decision under appeal is set aside.
2. The case is remitted to the first instance with the order to grant a patent on the basis of the following documents:

Claims 1 to 8 of the main request, filed with the letter of 29 October 1992.

Description pages 1 to 3, 3a, 4 to 16 of the main request, filed with the letter of 29 October 1992.

Figures 1 to 21 of the application as filed.

3. The reimbursement of the appeal fee is ordered.

The Registrar:



S. Fabiani

The Chairman:



H. Seidenschwarz