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Aktenzeichen / Case Number / N^o du recours : T 256/89 - 3.3.1

Anmeldenummer / Filing No / N^o de la demande : 85 110 014 - 9

Veröffentlichungs-Nr. / Publication No / N^o de la publication : 0 175 898

Bezeichnung der Erfindung: Rapidly solidified nickel aluminide of improved stoichiometry
Title of invention: and ductilization
Titre de l'invention :

Klassifikation / Classification / Classement : C22C 19/00

ENTSCHEIDUNG / DÉCISION

vom / of / du 25 September 1989

Anmelder / Applicant / Demandeur : General Electric Company

Patentinhaber / Proprietor of the patent /
Titulaire du brevet :

Einsprechender / Opponent / Opposant :

Stichwort / Headword / Référence :

EPÜ / EPC / CBE Art. 123(2)

Schlagwort / Keyword / Mot clé : "Inadmissible amendment (affirmative)" - "removed during appeal stage"

Leitsatz / Headnote / Sommaire

Europäisches
Patentamt

Beschwerdekammern

European Patent
Office

Boards of Appeal

Office européen
des brevets

Chambres de recours



Case Number : T 256/89 - 3.3.1

D E C I S I O N
of the Technical Board of Appeal
of 25 September 1989

Appellant : General Electric Company
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Decision under appeal : Decision of Examining Division 2.1.06.017
the European Patent Office dated
14 December 1988 refusing European patent
application No. 85 110 014.9 pursuant to
97(1) EPC

Composition of the Board :

Chairman : K. Jahn
Members : F. Antony
J. Stephens-Ofner

Summary of Facts and Submissions

- I. European patent application No. 85 110 014.9 (publication No. 175 898) had been filed on 8 August 1985, claiming US priority of 4 September 1984, with five claims, the only independent one reading as follows:

"A nickel aluminide composition $(Ni_{1-x}Al_x)_yB_{100-y}$ having improved tensile properties which comprises a rapidly solidified, annealed nickel aluminide having an aluminum concentration x less than 0.25 and having a relatively high percentage content of boron, said composition being rapidly solidified from a melt at a rate greater than about 10^3 °C per second."

- II. In response to an official action raising objections mainly under Article 84 EPC, the Applicant, who is now the Appellant, filed a new Claim 1, in which the aluminum concentration x was said to be between 0.235 and 0.245, and the percentage content of boron $100-y$ was defined as being between 0.5 and 1.5.
- III. In another official action, amongst other matters, these ranges for aluminum and boron were objected to as extending beyond the content of the original documents (Article 123(2) EPC). In response, by a submission received on 4 October 1988, both these ranges were defended. An auxiliary request was filed on 21 November 1988, according to which the lower limit for the aluminum concentration range was to be changed to 0.225 (as disclosed in original Claim 2), but the upper value of 0.245 was to be maintained, and so was the range for boron.
- IV. Following this, in its Decision dated 14 December 1988, the Examining Division 17 refused the application in suit.

With respect to the main request, the range of boron content of 0.5 to 1.5 (or of 1.0 to 1.5 according to Claim 3) was now accepted as originally disclosed (page 4, numbered section 2 of Decision under appeal), whereas an original disclosure of the aluminum concentration range from 0.235 to 0.245 in general, and of its limits of 0.235 and 0.245 in particular, was denied; the reason being that the lower limit was not to be found anywhere in the original documents, while the upper limit of 0.245 was mentioned only in a comparative example in which the boron concentration is essentially zero, but not in connection with the invention (page 5, lines 5 to 8, and page 6, lines 2 to 5 of the Decision under appeal).

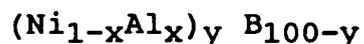
No reference at all was made to the auxiliary request.

- V. On 20 January 1989 a Notice of Appeal was filed and the prescribed fee paid. Grounds of Appeal were submitted on 16 March 1989.

It is the Appellant's main request that the Decision under appeal be set aside and a patent be granted on the basis of the following main claim:

- "1. A nickel aluminide composition having an improved combination of tensile and ductile properties characterized in that it comprises:

a rapidly solidified, annealed nickel aluminide according to the expression



said aluminide having an aluminum concentration x between 0.235 and 0.245, and having a relatively high

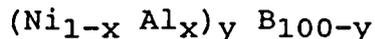
percentage content of boron 100-y between 0.5 and 1.5, and said composition being rapidly solidified from a melt at a rate greater than about 10^3 °C per second."

Together with the Grounds of Appeal, two auxiliary requests were submitted.

Claim 1 of the first auxiliary request (Annex A) differs from the one according to the main request essentially in that the lower limit of the aluminum concentration is to be 0.225 instead of 0.235, while the upper limit of 0.245 is to remain unchanged.

According to the second auxiliary request (Annex B), the relevant claims are to read as follows:

- "1. A nickel aluminide composition having an improved combination of tensile and ductility properties consisting of a rapidly solidified, annealed nickel aluminide according to the expression:



said aluminide having an aluminum concentration x between 0.225 and less than 0.25 and having a relatively high percentage content of boron 100-y between 0.5 and 1.5, and said composition being rapidly solidified from a melt at a rate greater than about 10^3 °C per second.

3. The composition of Claim 2 in which the boron concentration 100-y is between 1.0 and 1.5."

It is the Appellant's position that both limits of 0.235 and 0.245 can be unambiguously derived from the original

documents, with specific reference to page 7, line 31 to page 9, line 10, of the description and to Figure 2 of the drawings, relying especially on the fact that the abscissa axis in the said figure contained too small vertical lines corresponding to x-values of 0.235 and 0.245, respectively. By way of auxiliary argument, reference is made to page 8, lines 12 to 21, where specific mention is made of an x-value of 0.245, though in connection with "an essentially zero concentration of boron".

Reasons for the Decision

1. For a correct procedure it is mandatory (Art. 113(2) EPC) that a decision does not deal with only the main request, but also with any and all auxiliary requests (with the obvious proviso that subsequent requests need not be considered once a preceding one is allowed). Failure of a decision to do so is normally regarded as a substantial procedural violation having the consequences of its legal invalidity and possibly reimbursement of the appeal fee. In the present case, these consequences do exceptionally not apply because, of the two features which the decision under appeal held were not originally disclosed and thus necessitated refusal of the main request, one (i.e. the limit of 0.245) was contained in Claim 1 according to the auxiliary request of 21 November 1988 as well. Therefore, the reasons given with regard to the main request are to be interpreted as being implicitly directed to the auxiliary request, too. There has, therefore, not been any substantial procedural violation within the meaning of Rule 67 EPC (cf. Decision T 68/88 of 28 April 1989; unpublished).

2. The appeal complies with Articles 106 to 108 and Rule 64 EPC; it is therefore admissible.
3. **Main request:**
 - 3.1. It is undisputed that neither an aluminum concentration range of from 0.235 to 0.245 as such, nor its lower or upper limits are mentioned in the claims as filed.
 - 3.2. It is likewise undisputed that nowhere in the original description is there any explicit mention of the said range or of its lower limit of 0.235.
 - 3.3. It is true that an x-value of 0.245 is mentioned on page 8, lines 12 to 17, of the original description, as resulting - at an essentially zero concentration of boron - in an (undesirable) ductility value of 0.0. For two reasons, therefore - each of which would be sufficient in itself - the passage concerned cannot be interpreted as disclosing part of the invention: first, because the disclosed combination of aluminum and boron concentrations does not solve the problem of providing a nickel aluminide composition "having ... improved ... ductile properties" (see preamble of Claim 1); and second, because the said combination of concentrations falls outside of the invention by virtue of its "essentially zero" boron concentration, the invention requiring a "relatively high" percentage of boron. Hence this passage cannot justify inclusion into the claims of an aluminum concentration limit of 0.245, nor of course a range of from 0.235 to 0.245.
 - 3.4. As to Figure 2 of the drawings, while the small vertical lines at the abscissa axis between "23" and "24" and between "24" and "25" (meaning 0.23, 0.24 and 0.25, respectively) clearly stand for x-values of 0.235 and 0.245

at the appropriate places, they cannot be recognised as being anything but part of the scale applicable to the entries in the diagram. Insofar as the Appellant wants to rely on the entry of a ductility value of "only 5" at a boron percentage of 1.0 and an aluminum concentration of "just over 0.245" (Grounds of Appeal, page 3, paragraph 3, lines 6 to 4 from the bottom) as an argument for an x-value of 0.245 being the upper limit, it must equally be considered that, on the one hand, even lower ductility values (i.e. 3 and 4) are entered in Figure 2 at a boron percentage of about 0.75 and an aluminum percentage of just over 0.24 and, on the other hand, a much higher ductility value (i.e. 19) is entered at an aluminum percentage markedly less than 0.235 (though, admittedly, at a boron concentration outside the claimed range). The Board is therefore unable to derive from Figure 2 any implicit disclosure of - certainly - an upper limit of 0.245 and accordingly of an aluminum concentration range of between 0.235 and 0.245.

- 3.5. Under these circumstances, Claim 1 of the main request contravenes Article 123(2) EPC, and such main request is not allowable, without it being necessary to investigate other possible grounds for objections, such as occurrence of the word "comprises" where it should probably read "consists of" (Article 84 EPC).

4. **First Auxiliary request:**

While the lower limit of the aluminum concentration range given in Claim 1 according to this request, i.e. 0.225, is unobjectionable, having been disclosed as the lower limit of the corresponding range given in original Claim 2, the upper limit of 0.245 occurs here as it does in Claim 1 according to the main request. Hence, for the reasons set out in sub-paragraphs 3.3 and 3.4 hereinabove, the first auxiliary request must also fail.

5. Second auxiliary request:

- 5.1. The aluminum concentration range given in Claim 1 according to this request is composed of the lower limit given in original Claim 2 (i.e. 0.225) and of the upper limit disclosed in original Claim 1 (i.e. "less than 0.25"). In accordance with established practice it is allowable to combine such limits to a new range. The definition of the aluminum concentration range as "between 0.225 and less than 0.25" is therefore unobjectionable.
- 5.2. After an initial objection, under Article 123(2) EPC, the Examining Division admitted as originally disclosed a boron percentage range of between 0.5 and 1.5 in then Claim 1, range which is still shown in Claim 1 according to the present second auxiliary request. The respective reasons given in numbered section 2 on page 4 of the Decision under appeal can be approved by this Board because the examples given on page 6, last line, to page 7, line 3; page 7, lines 23 to 24; and page 8, line 30 to page 9, line 1 are clearly examples in accordance with the invention, the ratio of nickel to aluminum being in each case given as 76:24.
- 5.3. In summary, Claim 1 according to the second auxiliary request does not contravene Article 123(2) EPC.
- 5.4. Claim 2 of this request essentially corresponds to original Claim 3 and is therefore likewise unobjectionable.
- 5.5. The Decision under appeal did not object to the boron concentration range of between 1.0 and 1.5 in then Claim 3, to which Claim 3 of this request essentially corresponds. This Board, however, has considerable misgivings on this point. It is observed that the passage referred to, in the Decision under appeal, as basis for a lower limit of 1.0, i.e. page 9, line 21, seems to relate not to the invention, but to the subject-matter of a copending US application

according to which there is provided a nickel: aluminum ratio of 75:25; hence it seems questionable whether the range of between 1.0 and 1.5 was indeed disclosed in the original documents. However, in order to permit consideration of this aspect in two instances, no decision is made on this point.

- 5.6. Further, while the Examining Division had indicated in its communication of 3 November 1987, page 2, first paragraph, that "the application appears to set forth novel and inventive matter", it has not yet expressed its opinion on sufficiency of the disclosure in view of two apparently unsatisfactory ductility values (i.e. 3 and 4) being shown in Figure 2 of the drawings at the very centre of the claimed subject-matter, namely at an aluminum concentration of about 0.241 and a boron percentage of about 0.75.
- 5.7. Finally, whatever the outcome of further examination in respect of the points set forth in sub-paragraphs 5.5 and 5.6 above, the description will require adaptation to any claims eventually found allowable.
6. In view of the matters raised in sub-paragraphs 5.5 to 5.7 above, there being at least a formally admissible Claim 1 in the documents according to the second auxiliary request, the Board considers it appropriate to remit the case to the Examining Division for further examination.

Order

For these reasons, it is decided that:

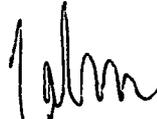
1. The Decision under appeal is set aside.
2. The case is remitted to the first instance for continuing the examination on the basis of Claim 1 according to the second auxiliary request.

The Registrar:

The Chairman:



M. Beer



K. Jahn