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D E C I S I O N
of 9 September 1997

Case Number: T 0086/95 - 3.2.2

Application Number: 85302169.9 -

Publication Number: 0157600

IPC: C22F 1/04

Language of the proceedings: EN

Title of invention:
Aluminum lithium alloys

Patentee:
ALUMINUM COMPANY OF AMERICA

Opponent:
Alcan Aluminium Ltd.

Headword:
Aluminum lithium alloys/ALCOA

Relevant legal provisions:
EPC Art. 54, 56, 84

Keyword:
"Novelty (main request) - no"
"Inventive step (first auxiliary request) - no"
"Clarity of claims (second auxiliary request) - no"

Decisions cited:
-

Catchword:
-



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Boards of Appeal

Chambres de recours

Case Number: T 0086/95 - 3.2.2

D E C I S I O N
of the Technical Board of Appeal 3.2.2
of 9 September 1997

Appellant:
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 17 November 1994
revoking European patent No. 0 157 600 pursuant
to Article 102(1) EPC.

Composition of the Board:

Chairman: H. Seidenschwarz
Members: R. Lunzer
C. Holtz

Summary of Facts and Submissions

- I. European patent No. 157 600 was granted on 1 July 1992 on the basis of application No. 85 302 169.9 filed on 28 March 1985, claiming a priority date of 29 March 1984 based on US application No. 594 344. Claim 1 of the patent as granted took the following form:

"An aluminum base alloy wrought product suitable for aging and having the ability to develop improved combinations of strength and fracture toughness in response to an aging treatment, characterized by comprising 0.5 to 4.0 wt.% Li, 0 to 5.0 wt.% Mg, 0 to 5.0 wt.% Cu, 0 to 1.0 wt.% Zr, 0 to 2.0 wt.% Mn, 0 to 7.0 wt.% Zn, 0.5 wt.% max. Fe, 0.5 wt.% max. Si, the balance aluminum and incidental impurities, the product having imparted thereto, prior to an aging step, a working effect equivalent to stretching an amount greater than 5% at room temperature in order that, after an aging step, said product can have improved combinations of strength and fracture toughness."

- II. An opposition was filed by the Respondent on the grounds of Articles 100(a) and 100(b) EPC, alleging lack of novelty (Article 54 EPC), lack of any inventive step (Article 56 EPC), and insufficiency of disclosure (Article 83 EPC). The Opponent relied on a considerable number of documents before the Opposition Division, out of which only the following were relevant to the appeal:

(H) S. J. Harris, B. Noble, K. Dinsdale, Conference Proceedings of the 2nd International Al-Li Conference of the AIME, Monterey, California, USA, 12 to 14 April 1983, pages 219 to 233, and

- (M) Miller et al.: Development of Lithium-containing Aluminium alloys for Ingot Metallurgy Production Route, read at the above conference, pages 335 to 362.

Apart from those two documents, there was written evidence in the form of a declaration by Dr. R. J. Rioja on behalf of the Appellant (patentee) directed to showing that those two documents were not available to the public through libraries to which the public had access until after the priority date of 29 March 1984. In addition there was a conflict of evidence, supported by the written statements by witnesses on behalf of both parties, directed to the issue of what had been disclosed orally at the conference in California in April 1983. There were affidavits by Prof. S. J. Harris and Dr. W. S. Miller, asserting that they had read the whole of their respective papers at the 1983 conference, which evidence was contradicted by affidavits by Dr. Ralph Sawtell, and Dr. James Staley on behalf of the Appellants, asserting that they had attended the conference, and that there was no reference to increasing fracture toughness by stretching or cold working prior to artificial ageing. As the patentees had already discovered the effect of cold work prior to ageing these witnesses said that they were very interested to hear whether the same proposal would be mentioned by Prof. Harris, and that they would have noted the fact had he done so.

- III. By its decision given orally on 18 October 1984, and issued in writing on 17 November 1994, the Opposition Division revoked the patent. It held that the content of document (H) was made available to the public at least by oral description with a high degree of certainty before the priority date of the patent in suit. Its reasons for so finding were that it accepted

the evidence of Prof. Harris, who was, "in no doubt that each of the slides was fully described by him during the presentation at the conference". Another reason relied on was that the beneficial effect of cold work prior to ageing on the mechanical properties of the alloys was one of the key features of document (H). On the basis of the available evidence on the contested issue of whether actual publication of the relevant papers took place before or after the priority date, the Opposition Division held that the likely publication date was February 1984, and thus ahead of the priority date of the patent.

- IV. An appeal against that decision was filed on 17 January 1995, the appeal fee paid on the same day, and the statement of grounds of appeal was filed on 7 March 1995.

A communication from the Board dated 8 July 1997 drew attention to the fact that there was substantial dispute as to the facts concerning the publication of the papers in 1984, and as to the extent of oral disclosure at the 1983 conference. On both of these, the burden of proof remained on the Respondent to prove its case.

To meet that challenge from the Board, the Respondent filed on 28 July 1997 a statutory declaration of Dr. Ian Palmer, dated 22 July 1997, who had attended the conference in 1983 in his then capacity as a Staff Scientist at Lockheed Missiles and Space Co. of Palo Alto, California, USA. He deposed to the fact that he had attended the conference, and had made extensive notes of what was said by the speakers, or shown on slides, which notes were attached to his declaration.

In particular at the lower left-hand corner of page W4 of his notes he had transcribed the figure illustrating the effect of cold work prior to ageing, which figure was later to appear as Figure 7 of the published paper (H) by Harris.

By a letter dated 22 August 1997 the Appellant notified the Board that it did not intend to attend the oral proceedings fixed for 9 September 1997 and requested in writing that the patent be maintained on the basis of its main request, or on the basis of one of its auxiliary requests submitted at the oral proceedings on 18 October 1994.

VI. The Respondent contended at the oral proceedings that the declaration of Dr. Palmer established beyond doubt that the essential matter had been disclosed orally at the 1983 conference, depriving the subject matter of Claim 1 in accordance with the main request of novelty. As for the auxiliary requests, the inclusion of copper in these alloys was common practice, as was reflected by document (M). As to the second auxiliary request, it could not be inventive to specify relatively low minimum limits for properties which were inevitably obtained when carrying out an obvious treatment on a known alloy.

The Respondent also sought an apportionment of costs in its favour pursuant to Article 104(1) with respect to the taking of evidence as well as in oral proceedings. The Respondent had incurred unnecessary extra costs in finding the new witness, Dr. Palmer, as a result of the inaccurate and misleading statements made by the Appellant's witnesses with regard to what had been disclosed at the 1983 conference. Further, the Appellants had chosen at a late stage not to attend the oral proceedings. It was therefore equitable to apportion these costs.

The Respondent therefore requested that the appeal be dismissed, and that the costs of the oral proceedings be apportioned in accordance with Article 104 EPC.

Reasons for the Decision

1. The appeal is admissible.

2. *The alleged invention*

The alleged invention is simply and clearly described in the patent in suit. Before the invention, aluminium alloys had been the material mainly used in aircraft construction. The goal of achieving equal strength coupled with lower density had to some extent been satisfied by including 1 to 4% of lithium into aluminium base alloys. This could lead to a reduction of density of 5 to 15%. However, the known Al-Li alloys suffered from a loss of ductility, and fracture toughness, which problem the alleged invention solved by stretching or working to the extent of 5% or more prior to ageing. It is worthy of note that the alloys of Claim 1 are defined in terms of Al and Li being the only essential constituents, the presence of Mg, Cu, Zr, Mn, Zn, Fe and Si being optional, as indicated by ranges starting from 0%. In other words, the alleged invention applies broadly to Al-Li alloys, regardless of their compositions, and involves the single allegedly novel proposal of the defined cold working step.

3. *The disclosure at the 1983 meeting*

The Board is bound to take judicial notice of the fact that it commonly happens that a subsequent written publication, based on a paper previously read at a

meeting which was open to members of the public and held some year or even years earlier, cannot be assumed to be exactly the same as what was orally disclosed at the earlier meeting. However, as was rightly observed by the Opposition Division in the present case (paragraph 4) the beneficial effect of cold working prior to ageing is not incidental to, but is in fact a key feature of document (H). From that fact it was inferred that it was highly unlikely that Harris passed over this salient point in silence in his presentation of the paper. The Board agrees with that reasoning. As further amplified by the Opposition Division (paragraph 6.1) the mechanical properties of the alloys were tested after various degrees of deformation had been imposed between solution treatment and ageing. The Opposition Division referred in this connection to page 220, last four lines of the third paragraph; page 221, Table I taken in combination with the last three lines of the second paragraph on that page; page 223 paragraphs 3 and 4; page 224 Figure 4 and Table II; page 225 paragraph 3 and Figure 5; page 226 Figure 7, which is the figure sketched in the notes of Dr. Palmer; page 231 end of the first paragraph and Figure 15; page 232 paragraph 4; and page 233 paragraph 2, all of which refer to a cold working step prior to ageing. On the basis of this material the Opposition Division reached the conclusion that the oral disclosure at the 1983 meeting must have been destructive of novelty of the subject-matter of Claim 1 in accordance with the main request. In arriving at the same conclusion, the Board has the significant added support of the declaration of Dr. Palmer, which declaration the Board finds both credible and conclusive on the issue of lack of novelty.

4. *The auxiliary requests*

4.1 The two auxiliary requests introduce limitations to the claims. These amendments, being based on the disclosure of the application as filed, are clearly allowable for the purposes of Articles 123(2) and 123(3) EPC. The first auxiliary request limits the alloys to those containing copper. As document (M) relates inter alia to Cu containing Al-Li alloys (cf. page 343 Table VI) and proposes at page 337 under heading "Experimental Procedure b)" the application of a 2% stretch preceded by up to 10% of cold work, and page 345, second paragraph discloses that the most satisfactory results were obtained with samples which had been cold worked, the Board might be ready to agree with the Opposition Division that there is a lack of novelty. However, unlike the Opposition Division, the Board is not convinced that the Respondent has proved publication of relevant documents at any date prior to April 1984, which is after the priority date of the patent. The Board consequently faces the problem that it cannot be assumed that all that is disclosed in document (M) was in fact disclosed orally in 1983, although it is again reasonable to assume that the essential features of that paper, more particularly the inclusion of Cu as an alloying constituent, was disclosed.

Given those facts, the skilled person attending the meeting had every incentive to combine the teaching of document (H), pointing towards the advantages of substantial degrees of cold working, with the teaching of document (M), that Cu containing Al-Li alloys have useful properties. It has also taken into account the fact that the Harris paper, in its opening paragraph, refers to Cu as an optional constituent of this class of alloys. Accordingly, the Board concludes that the subject matter of Claim 1 in accordance with the first

auxiliary request lacks any inventive step, and thus fails to meet the essential requirement of Article 56 EPC.

- 4.2 The second auxiliary request introduces minimum numerical limits for the properties of fracture toughness and yield strength (172 and 345 MPa), and the very wide range of 65 to 204 degrees centigrade for the ageing step. These figures are taken from the description of the application as filed at page 14 lines 6 to 26 , or of the patent as granted at page 5 lines 45 to 49, where it is indicated that useful strengths are in the range of 345 to 586 MPa, and corresponding fracture toughness is in the range of 172 to 517 MPa. The Board sees no inventive contribution in the mere selection of low minimum limits for mechanical properties. However, it bases its decision on the fact that a numerical limit for fracture toughness cannot define the properties of an alloy in the absence of data relating to the type of test employed, as well as the orientation and shape of the test specimen which is to be used in measuring this property. Accordingly, the Board is satisfied that the subject-matter of Claim 1 in accordance with the second auxiliary request fails to satisfy the requirement of clarity imposed by Article 84 EPC.

5. *Apportionment of costs*

The issue of apportionment of costs was raised for the first time at the oral proceedings, and was based on the apparent inaccuracy of the statements by witnesses on behalf of the Appellant. It was contended that that inaccuracy called for some explanation, in the absence of which adverse inferences were to be drawn. In the Board's view such an attack, which goes to the question of the integrity of the witnesses, cannot be entertained by a Board of Appeal in the absence of

prior notice having been given to the opposing party that an attack of that character was in contemplation. As no such warning had been given to the Appellant, it follows that the ground for seeking an apportionment advanced by the Respondent cannot be considered by the Board, with the result that the application for an apportionment must fail.

Order

For these reasons it is decided that:

1. The appeal is dismissed.
2. The request for apportionment of costs is refused.

The Registrar:



S. Fabiani

The Chairman:


H. Seidenschwarz

