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D E C I S I O N
of 20 September 2000

Case Number: T 0853/97 - 3.3.6

Application Number: 89900949.2

Publication Number: 0397696

IPC: B32B 5/12

Language of the proceedings: EN

Title of invention:
Ballistic-resistant composite article

Patentee:
AlliedSignal Inc.

Opponent:
E.I. Du Pont de Nemours and Company

Headword:
Ballistic resistant composite/ALLIEDSIGNAL

Relevant legal provisions:
EPC Art. 111(1)

Keyword:
"Late filed documents - admitted"
"Remittal to the first instance (yes)"

Decisions cited:
T 0326/87

Catchword:
-



Case Number: T 0853/97 - 3.3.6

D E C I S I O N
of the Technical Board of Appeal 3.3.6
of 20 September 2000

Appellant I

and Respondent II:
(Opponent)

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Respondent I

and Appellant II:
(Proprietor of the patent)

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Decision under appeal:

Interlocutory decision of the Opposition Division
of the European Patent Office posted 10 June 1997
concerning maintenance of European patent
No. 0 397 696 in amended form.

Composition of the Board:

Chairman: P. Krasa
Members: G. N. C. Rath
C. Rennie-Smith

Summary of Facts and Submissions

- I. This appeal is from the Opposition Division's interlocutory decision maintaining in amended form European patent 0 397 696 relating to a ballistic-resistant composite article.
- II. Appellant I (Opponent) filed a Notice of Opposition requesting revocation of the patent for lack of novelty in view of the two documents D1 and D2.

In the course of the opposition proceedings,

- the issue of inventive step was raised by the Opposition Division, and
 - five additional documents D2 to D7 were cited by Appellant I, and
 - a further document D8 was submitted by the Patent Proprietor. (Whereas the Patent Proprietor is also an Appellant (see No. IV, below), it is Respondent to the Opponent's appeal and is therefore referred to here as "Respondent I" for convenience.) D8 was held inadmissible by the Opposition Division.
- III. In the oral proceedings before the Opposition Division Respondent I submitted new requests, *inter alia* a new first auxiliary request, Claim 1 of which was directed to an

"impact resistant composite comprised of one or more layers; at least one of said layers comprising a network of filaments ... and the filaments are polyethylene or polypropylene filaments"

In its decision, the Opposition Division found that the claims of this first auxiliary request complied with the requirements of Articles 84, 123(2) and (3) EPC and, further, that the subject-matter claimed therein was both novel and inventive, in particular that the use of high molecular weight polyethylene or -propylene fibres (instead of KEVLAR[®] as disclosed in D6) in composites for ballistic resistant articles was not obvious.

IV. Appeals were filed against this decision by both Appellant I and by Respondent I, the latter requesting the allowance of its main request before the Opposition Division.

V. With its Statement of Grounds of Appeal, dated 12 August 1997, Appellant I filed two additional citations, i.e.

D9: US-A-4 403 012 and

D10: US-A-4 623 574

which it said both rendered obvious - contrary to the Opposition Division's view - the use of high molecular weight polyethylene or -propylene fibres instead of KEVLAR[®] and also anticipated the subject-matter of the claims as allowed by the Opposition Division.

VI. On 18 May 2000 oral proceedings were appointed by the Board for 20 September 2000.

VII. By its letter dated 16 August 2000 Respondent I waived its former request (see No. IV, above) and submitted a new main request and six new auxiliary requests.

Claim 1 of the main request reads:

"1. Use for ballistic protection of an impact resistant composite comprised of one or more layers; at least one of said layers comprising a network of filaments having a tensile modulus of at least 1350 g/tex (150 g/denier), an energy-to-break of at least 8 J/g, and a tenacity equal to or greater than 63 g/tex (7 g/denier) in a matrix, characterized in that the ratio of the thickness of said layer to the equivalent diameter of said filaments is equal to or less than 12.8 and wherein said network of filaments comprises a sheet-like filament array in which said filaments are aligned substantially parallel to one another along a common filament direction."

For the purpose of this decision it is not necessary to give full details of the auxiliary requests. It is sufficient to indicate that auxiliary requests 1, 3, and 4 comprise only use claims while auxiliary requests 5 and 6 comprise only process claims and that auxiliary request 2 sought remittal of the case to the first instance for further prosecution.

VIII. Appellant I argued in essence that a composite to be used according to the above quoted Claim 1 was the necessary result of examples of document D9 or D10 where, apart from the

"ratio of the thickness of said layer to the equivalent diameter of said filaments"

(hereinafter referred to as "Ratio"), all features of that composite were already disclosed as was its use for ballistic protection. The only issue was whether or

not the composites of Examples 12 to 14 of document D9 and of Examples 1 and 6 of document D10 would inevitably exhibit a Ratio of 12.8 or less. Appellant I maintained that the calculations submitted by it demonstrated this to be the case. It concluded that, consequently, Claim 1 of the main request was anticipated by both documents D9 and D10 since Respondent I had conceded that the use of the composites concerned for ballistic protection was disclosed in these citations.

As to each of the first, third and fourth auxiliary requests the same arguments were raised by Appellant I *mutatis mutandis*.

As to the fifth and the sixth auxiliary requests, Appellant I argued that all the process steps were either explicitly disclosed in examples of document D10 or would be automatically obtained by employing the method of Example 1 thereof.

Appellant I concluded that, for these reasons, the subject-matter of the claims of all requests of Respondent I was anticipated by citations D9 and D10.

IX. Respondent I contested the arguments of Appellant I and submitted in essence that Appellant's I conclusions resulted from calculations based on incorrect assumptions and in particular not taking into account crossover of fibres and the void space in the composites obtained according to the citations D9 and D10. It maintained that Appellant I had not proved beyond reasonable doubt that the various composites, used or manufactured according to the claims of the requests on file, were the inevitable result of

examples of D9 or D10. Respondent I also submitted that D9 and D10 were late filed and inadmissible. However, if the Board were to admit these citations, then the case should be remitted to the first instance for further prosecution.

- X. Appellant I requested that the decision under appeal be set aside and the patent be revoked.

Respondent I requested that the decision under appeal be set aside and that the patent be maintained in accordance with the main request, or with the first, or the third to sixth auxiliary requests, or that the case be remitted to the Opposition Division for further prosecution in accordance with its second auxiliary request.

Both parties also made auxiliary requests for oral proceedings.

- XI. Oral proceedings were held on 20 September 2000 at the end of which the chairman announced the Board's decision to remit the case to the first instance for further prosecution.

Reasons for the Decision

- 1. Appellant I cited the two documents D9 and D10 for the first time in its Statement of Grounds of Appeal in support of its rebuttal of the Opposition Division's view that the use of high molecular weight polyethylene or -propylene fibres instead of KEVLAR[®] in composites for ballistic resistant articles was not obvious.

- 2.1 D9 relates to composites for ballistic resistant composite articles, in which KEVLAR[®] fibres, carbon fibres and the like were replaced by ultra-high molecular weight polyethylene or -propylene fibres (column 1, lines 25 to 31 in combination with column 2, lines 7 to 11).
- 2.2 Similarly, D10 discloses composites for ballistic resistant articles containing a fibre network, which may include ultra-high molecular weight polyethylene or -propylene fibres, either alone or in combination with aramid or polyvinyl alcohol fibres (column 2, lines 20 to 25). In the examples, composites are disclosed in which the filaments used are extended chain polyethylene (e.g. Examples 1 and 6).
- 2.3 During oral proceedings before the Board, Respondent I contested that the Ratio of the composites obtained according to Examples 12 to 14 of D9 or according to Examples 1 or 6 of D10 was necessarily within the Ratio of the composites to be used according to Claim 1 of its main request (see No. VII, above). However, it accepted that the features
- use for ballistic protection;
 - composite of layer(s) which is/are a network of filaments in a matrix;
 - fibre tensile modulus of at least 150 g/den;
 - fibre energy-to-break of at least 8 J/g;
 - fibre tensile strength of at least 7 g/den;

- sheet-like filament array, filaments are aligned parallel to one another along a common filament direction

of the subject-matter of Claim 1 of the main request (see No. VII, above) were disclosed in D9 and in D10.

2.4 It is also to be noted that the molecular weights of the polyolefin fibres used according to D9 and D10 are of the same order of magnitude as those of the fibres used according to the patent in suit (patent in suit, page 5, lines 15 to 26, and page 6, lines 1 and 2, respectively; D9, column 2, lines 33 to 47, and column 3, lines 11 to 14; D10, column 2, lines 31 to 44 and column 3, lines 4 to 7).

3. The Board concludes from nos. 2.1 to 2.4 above that citations D9 and D10 are highly relevant to the present case. This finding is corroborated by Respondent I's admission that they

"are probably closer prior art to the claims in the case than anything else"

(see the sentence bridging pages 2 and 3 of its letter dated 16 August 2000 and relating to the claims submitted with that letter).

4.1 In this connection, Respondent I's argument that both documents were previously cited in the International Search Report, and D9 additionally in the patent in suit and, therefore, they could have been referred to by Appellant I during the opposition period, is irrelevant. The Board accepts Appellant I's argument, that the need for a further search only arose when

challenging (on appeal) the Opposition Division's decision that it was not obvious for a skilled person to replace KEVLAR® (disclosed in D6 as a fibre in composites) by high molecular weight polyethylene or -propylene fibres in composites for ballistic resistant articles.

4.2 It is also important to note that the decision under appeal allowed a request only submitted by Respondent I during oral proceedings before the Opposition Division and containing a limitation not previously considered, which gave Appellant I no opportunity to reconsider the prior art it relied on. In those circumstances, the earliest Appellant I could file evidence against the request allowed by the Opposition Division was with its Statement of Grounds of Appeal.

4.3 The Board sees no reason why Appellant I should not rely on D9 and D10 to argue not just absence of inventive step but also lack of novelty since lack of novelty was already raised in the grounds of opposition and, thus, is not a new ground of opposition.

4.4 For these reasons, the Board finds D9 and D10 admissible.

5. However, the introduction of D9 and D10 into the proceedings requires a fresh assessment of the case. This should normally be done by the Opposition Division to afford both parties two levels of jurisdiction, in particular when the new citations are as highly relevant as in the present case (see, e.g. T 326/87, OJ EPO 1992, 522, Nos. 2.2 and 4 of the Reasons for the Decision). Therefore, in exercising the discretion conferred upon the Board by Article 111(1) second

sentence EPC, the case will be remitted to the first instance for further prosecution.

Order

For these reasons it is decided that:

The case is remitted to the first instance for further prosecution.

The Registrar:

The Chairman:

G. Rauh

P. Krasa