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File Number: T 129/88 - 3.3.3

Application No.: 80 200 517.3

Publication No.: 0 021 485

Title of invention: Fibre, thread bundle and cord from poly-p-phenylene
terephthalamide

Classification: D01F 6/60

DECISION
of 10 February 1992

Proprietor of the patent: AKZO N.V.

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

Headword:

EPC Articles 84, 114(1)

Keyword: "Limited obligation of EPO to investigate of its own motion"
"Clarity of claims"

Headnote

Headnote follows



Case Number : T 129/88 - 3.3.3

D E C I S I O N
of the Technical Board of Appeal 3.3.3
of 10 February 1992

Appellant :
(Proprietor of the patent)

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Decision under appeal :

Decision of Opposition Division of the European
Patent Office dated 15 January 1988 rejecting the
opposition filed against European patent
No. 0 021 485 pursuant to Article 102(2) EPC.

Composition of the Board :

Chairman : F. Antony
Members : R.A. Lunzer
J.A. Stephens-Ofner
H.H.R. Fessel
R. Schulte

Summary of Facts and Submissions

I. European patent No. 021 485 was granted on 23 March 1983 on the basis of application No. 80 200 517.3, filed on 3 June 1980, claiming a priority date of 8 June 1979 derived from Dutch application No. 7 904 496. Independent Claims 1 and 4 read as follows:

"1. Fibre from a polyamide containing more than 95 mole% of poly-p-phenylene terephthalamide and having an inherent viscosity of at least 2,5, which fibre has a tenacity of at least 10 cN/dtex, an elongation at break of at least 2,7% and an initial modulus of at least 300 cN/dtex, characterised in that the fibre has a heat sensitivity index not higher than 12.

4. Thread bundle formed from endless filaments of the fibre according to one or more of the preceding claims, characterised in that a symmetrical cord formed from these filaments has a cord efficiency of at least 75% when said cord has a twist factor of 16500 and the surface of the cord filaments is provided with an adhesive."

They were followed by dependent Claims 2 and 3 and, respectively, 5 to 9, and by a formally independent Claim 10 relating to cord manufactured from thread bundles according to the preceding claims.

II. On 22 December 1983 an opposition was lodged by the Respondent on the ground of Article 100(a), alleging that the patent failed to satisfy the requirements of Articles 52 to 57 EPC. In particular, the Respondent relied on its own alleged prior public use of certain identified aramid yarns which were said to have all the features of Claim 1 as granted.

Subsequent to filing its grounds of opposition, the Respondent introduced in its letter of 28 May 1984 (page 3) further alleged instances of prior public use, supported by a number of witness statements, additional to that mentioned in the grounds of opposition.

III. Additionally the Respondent relied on a number of documents cited against novelty and/or inventiveness, and particular reference was made to:

- (2) DE-B-2 219 703,
- (9) JP-A-18612/71.

In relation to document (2) it was alleged that re-working of Example 2A thereof would have the effect of producing a fibre which fell within the scope of the claims of the patent in suit.

IV. In an attempt to meet an argument that the claims were not sufficiently defined to meet the provisions at least of German law, the Appellant (Patentee) sought on 25 September 1987 to introduce a new Claim 2, which read as follows:

"2. Fibre from a polyamide containing more than 95 mole% of poly-p-phenylene terephthalamide and having an inherent viscosity of at least 2,5 which fibre has a tenacity of a least 10 cN/dtex, an elongation at break of at least 2,7% and an initial modulus of at least 300 cN/dtex, characterised in that the fibre has a heat sensitivity index not higher than 12 and that the fibre is obtainable by carrying out a spinning process comprising the steps of spinning a spinning mass having a temperature of 20°-120°C and consisting of a mixture of concentrated sulphuric acid having a

strength of at least 96% by weight and, calculated on the weight of the mixture, at least 15% by weight of the polyamide having an inherent viscosity of at least 2,5, the spinning mass being downwardly extruded into a coagulation bath from a spinneret whose efflux side is positioned in a gaseous inert medium and shortly above the liquid surface of the coagulation bath, the spinning mass being prepared by the successive steps of cooling concentrated sulphuric acid to below its solidifying point, bringing the sulphuric acid thus cooled and the polyamide together and intermixing them until a solid state mixture is obtained which is heated to a spinning temperature."

This Claim was to be followed by Claims 3 to 11 corresponding to granted Claims 2 to 10. The Appellant accepted that the additional process features of Claim 2 did not modify the scope of Claim 1, but contended that such process features may be essential in Germany, where claims defined solely in terms of desiderata may be regarded as invalid.

- V. By its decision given orally on 24 November 1987, and issued in writing on 15 January 1988, the Opposition Division revoked the patent, holding that the proposed amended Claim 2 was unallowable, having regard to the views earlier expressed by the Board of Appeal in T 150/82, OJ EPO 1984, 309, because the added features did not make the scope of Claim 2 any different from the scope of Claim 1. It held further that Claim 1 lacked novelty having regard to the alleged prior public use, which it found to be adequately proved. Additionally, it rejected the alternative attack on novelty, finding that the Respondent had failed to demonstrate convincingly that the product of Example 2A of document (2) had all the features of the product of Claim 1 in suit.

- VI. An appeal against that decision was lodged on 18 March 1988, and the appeal fee was paid on the same day. In its Notice of Appeal, the Appellant sought to challenge the finding of prior public use, asking that an order be made that the Respondent should produce a sample of the yarn tested by one of the Respondent's witnesses, and also asking that there should be oral examination of most of the witnesses whose written evidence had been taken into account by the Opposition Division in reaching its finding of prior public use.
- VII. The Respondent filed a letter on 18 May 1988 withdrawing its opposition.
- VIII. The Grounds of Appeal, which inter alia attacked the validity of the finding of prior public use, were filed on 25 May 1988, i.e. after the above-mentioned withdrawal of the opposition. The Appellant challenged the procedure followed by the Opposition Division, contending that the Opposition Division ought not to have accepted the evidence of the witnesses who had made statements in writing.
- IX. Together with its Statement of Grounds of Appeal, the Appellant sought as its Main Request the claims filed on 25 September 1987, and in three Auxiliary Requests it sought the claims as granted, and some further variants of the claims. By a telephone communication on 25 September 1991 the Board expressed its doubts as to the allowability of both Claims 1 and 2 as set out above, but invited the Appellant to submit a request in a form in which Claim 2 set out above replaced Claim 1, instead of being introduced as an additional claim. By its letter of 7 October 1991, the Appellant made a sole request in those terms.

- X. The Appellant requested that the patent be maintained in accordance with the request contained in its letter of 7 October 1991. The Respondent, having withdrawn its opposition, took no further part in the Appeal.

Reasons for the Decision

1. The appeal complies with Articles 106 to 108 and Rule 64 EPC, and is admissible.

2. Admissibility of amendments

2.1.1 Turning first to the issue of whether the present claim, as amended, would be sufficiently clear for the purposes of Article 84 EPC, in the view of the Board, in some circumstances a claim may be open to objection if the invention is defined solely in terms of desirable features. However, as was indicated by this Board in its earlier decision T 487/89 of 17 July 1991 (not published in OJ EPO), there may be circumstances where the scope of a claim is adequately restricted by the presence of other features, which impose a practical limit on open-ended features expressing "desiderata". Whether a claim which expresses desiderata is sufficiently defined has to be decided on the facts of each individual case.

2.1.2 As was stated by the Board in the above mentioned case;

"3.5 The second objection of insufficiency was based on the fact that both the tenacity, and the toughness had been indicated with a lower, but without any upper limit. The Opposition Division took the view that such "open-ended" parameters are always

objectionable if they relate to an inherently desirable characteristic. The Board does not accept that view in its generality. Whether the absence of an upper or lower limit is acceptable in a claim in any individual case depends on all the surrounding circumstances. Where, as in the present case, the claim seeks to embrace values which should be as high as can be attained above a specified minimum level, given the other parameters of the claim, then such open ended parameters are normally unobjectionable."

2.1.3 In the circumstances of the present case, the Board cannot fail to observe that out of a total of 7 features expressed in the claim, at least four of them express desiderata. Nevertheless, the Examining Division was prepared to accept the claim as being sufficiently defined for the purposes of Article 84 EPC, and in the present circumstances the Board agrees with that view.

2.1.4 The Board regards it as being a matter of technical fact that a claim which is expressed in terms of the combination of a number of desiderata may, depending on the circumstances, be effectively limited in its scope. To illustrate, in the field of metallurgy, it is well known that hardness, and impact strength, are properties which are normally inversely related to each other. An increase in hardness usually involves a loss of impact strength, and vice-versa. While a claim to alloys of a given composition having above a minimum level of hardness might be open to objection, as being a speculative claim to alloys having levels of hardness which have yet to be found, the inclusion of a further open ended limitation, such as to a minimum level for impact strength, could impose a severe practical upper limit on the hardness figure, and thus overcome any objection that the claim is of undue breadth.

- 2.2.1 The admissibility of the present amended Claim 1 further depends on whether it is permissible, in accordance with the EPC, to add process features to a product claim, which do not apparently affect the scope of the claim. This amendment is sought by the Appellant in response to an objection raised in the opposition by the Respondent, and is intended to ensure the validity of the patent in Germany.
- 2.2.2 Regarding this, in the decision T 150/82, OJ EPO 1984, 309 (mentioned in V. above) the Board indicated that under the provisions of the EPC, product-by-process claims are not normally acceptable, a view which the present Board endorses. It went on to suggest (at point 10 of its decision, page 316 of the published report) that product-by-process claims,
- "should be reserved for cases where the product cannot be satisfactorily defined by reference to its composition, structure or some other testable parameters".
- Again, the Board finds itself broadly in agreement with what has been said in the earlier case.
- 2.2.3 However, the observations in the last-mentioned earlier decision do not deal with the issue which arises in the present case, which may be formulated thus. On the assumption that in one or more Contracting States claims may not be characterized by desiderata, is there any provision in the EPC or the Implementing Regulations which forbids the EPO from permitting a product-by-process claim which is intended to overcome that objection?
- 2.2.4 In terms of the above quoted decision T 150/82, it may be said that under such circumstances, the invention indeed

cannot be "satisfactorily defined" without reference to the process, because it would be unsatisfactory for the EPO to refuse to allow the addition of a feature which would possibly ensure the validity of such a claim in certain Contracting States. Besides, in the view of the Board, the effect of bringing process limitations into the present Claim 1 is likely to impose some practical limitation on the otherwise open-ended effect of certain features there expressed. Thus, although tenacity is expressed as being at least 10 cN/dtex, with no upper limit, the process limitations are likely to have the effect of imposing a practical upper limit. Consequently, the Board can see no valid objection to the introduction of process criteria in the present circumstances.

2.3 The introduction of the process criteria into Claim 1 is based on the disclosure at page 1 lines 1 to 17, and page 5 line 34 to page 6 line 1, of the application as originally filed, corresponding to page 2 lines 5 to 11, and page 3 lines 56 to 60, of the specification of the patent as granted. As indicated in 2.2.4 above, the scope of the claim is thereby limited compared to Claim 1 as granted. Accordingly, the Board is satisfied that the amendment is allowable for the purposes of Articles 123(2) and 123(3) EPC.

3. Prior public use

3.1 Although a Board of Appeal (and equally an Opposition Division) has an obligation under Article 114(1) EPC to investigate matters of its own motion, that obligation does not extend as far as investigating an allegation of prior public use, where the party who formerly made that allegation has withdrawn from the proceedings, and it is difficult to establish all the relevant facts without his cooperation.

- 3.2 The reason for this is that the obligation to investigate of its own motion imposed on the EPO by Article 114(1) EPC is not unlimited in its scope, but is confined by considerations of reasonableness, and expediency. No department of the EPO ought to expend excessive time or effort on any one case, with consequent detriment to the rest of its activities. If a party to an opposition raises an allegation, such as of prior public use, or of prior oral disclosure, he alone may often be in possession of all the relevant evidence which may be needed to establish that issue. If he then withdraws from the opposition, thereby indicating that he is no longer interested in the outcome of the opposition, then, although the EPO may have the power, depending on the country of residence of relevant witnesses, to compel them to give evidence, either before the EPO or before the court of a Contracting State, in the interest of procedural economy it should not normally investigate the issue any further. The relevant principles in relation to German law are discussed in Schulte, Patentgesetz, (4th edition, Carl Heymanns Verlag) section 35 note 9 page 303. In the Board's view, the same principles are applicable under European law.
- 3.3 It would be different if a relevant prior public use had, e.g., already been substantiated by documents of undisputed authenticity, or if, as occurred recently (T 629/90, 4 April 1991, not published in OJ EPO), the material facts with respect to the alleged prior public use were undisputed by the Appellant (Patentee).
- 3.4 Accordingly, the Board finds the allegation of prior public use unestablished in the present case.
4. Novelty in relation to cited documents
- 4.1 An alternative basis for attacking the novelty of the invention was based by the Respondent on the allegation

that the inevitable consequence of making a product in accordance with Example 2A of document (2) was that that product would have all the properties of a polyamide fibre made in accordance with Claim 1 of the patent in suit. However, as was pointed out by the Opposition Division, the accuracy of the repetition of Example 2A was credibly contested. The Board has reviewed the arguments directed to this issue, and is not satisfied that the alleged repetition performed by the Respondent was a satisfactory duplication of Example 2A.

4.2 In addition, it is noted that comparative tests contained in the patent in suit (page 8 lines 34 to 65) show that fibres which had been made by a process which very closely resembled that of the said Example 2A of document (2) had considerably inferior heat sensitivity properties when compared with those made in accordance with the invention. Accordingly, the Board is not satisfied that novelty is lacking on this ground.

4.3 Following the withdrawal of the opposition, the Board sees no sufficient reason to investigate the matter in further detail, and therefore adopts the finding of the Opposition Division on novelty.

5. Inventiveness

5.1 The argument by the Respondent before the Opposition Division was directed principally to the allegation of lack of novelty based in the alternative on prior public use, or the inevitable result of the repetition of Example 2A of document (2). However, inventiveness was also challenged on the basis of document (9). It discloses the mixing of a number of solid polymers with frozen

solvents, prior to heating and extrusion to produce fibres, the solvents including water, dimethyl sulphoxide, benzene, and m-cresol mixed with phenol (pages 3 and 4 of the translation).

5.2 Although document (9) is concerned with a method which resembles that of the present invention, i.e. a mixing step carried out at a low temperature, prior to heating of the mixture and extrusion of a fibre, the systems with which it is concerned do not include polyamides in sulphuric acid, and it is not in any way concerned with the problem of the invention, which is to achieve particularly low heat sensitivity in such fibres. A comparison of the heat sensitivity figures given in the patent in suit for the Examples in accordance with the invention, as against the comparative Examples II(A) and II(B), shows credibly that a significant improvement in heat sensitivity is attainable in accordance with the invention.

5.3 The skilled reader of document (9) might appreciate that the technique there disclosed is capable of application to polyamide fibres, possibly in the presence of sulphuric acid, but there is no suggestion that the adoption of that procedure in the polyamide/sulphuric acid system would afford any particular advantage, still less the particular advantage attained in accordance with the invention. Consequently, the Board does not consider that this document renders the present invention obvious, and the objection of lack of inventive step is rejected. Taking into account the age of the present appeal, the fact that the opposition has been withdrawn by the Respondent, and the Board's view that the issue of inventiveness is not open to serious dispute in the light of the cited prior art, in the exercise of its discretion under Article 111(1) EPC the Board saw no reason to refer that issue back to the Opposition Division.

6. Conclusion

As the Board has rejected all the attacks on the patent, it allows the Appellant's Main Request, and has no need to comment on the Auxiliary Requests. The subject matter of Claim 1 of the patent in issue is accepted to be novel, and involves an inventive step as required by Articles 54 and 56 EPC, and the claim is therefore patentable. The dependent Claims 2 to 10 relate to modifications of the fibre covered by Claim 1, or a thread bundle, or a cord, all made of fibres falling wholly within the scope of Claim 1, and on that ground alone they are also entitled to be upheld.

Order

For these reasons, it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the Opposition Division with the order to maintain the patent with claims as submitted by the Appellant in its letter of 7 October 1991, together with the description as granted, subject to the amendments proposed in the same letter.

The Registrar:

The Chairman:

E. Goergmaier

F. Antony