

Internal distribution code:

- (A) Publication in OJ
(B) To Chairmen and Members
(C) To Chairmen
(D) No distribution

D E C I S I O N
of 12 December 2001

Case Number: T 0760/97 - 3.3.7

Application Number: 86905007.0

Publication Number: 0231339

IPC: B32B 7/00

Language of the proceedings: EN

Title of invention:
Convertible textile fire block material

Patentee:
MAIX, Anton

Opponent:
AaBe Holland B.V.

Headword:
-

Relevant legal provisions:
EPC Art. 54

Keyword:
"Novelty - prior disclosure-implicit features (yes)"

Decisions cited:
-

Catchword:
-



Case Number: T 0760/97 - 3.3.7

D E C I S I O N
of the Technical Board of Appeal 3.3.7
of 12 December 2001

Appellant: MAIX, Anton
(Proprietor of the patent) P.O. Box 21306
Fort Lauderdale, FL 33335 (US)

Representative: Sturt, Clifford Mark
Miller Sturt Kenyon
9 John Street
London WC1N 2ES (GB)

Respondent: AaBe Holland B.V.
(Opponent) Hoevenseweg 57
NL-Tilburg (NL)

Representative: Vollebregt, Cornelis Jacobus
Algemeen Octrooibureau
Verrijn Stuartlaan 7
NL-2288 EK Rijswijk (NL)

Decision under appeal: Interlocutory decision of the Opposition Division
of the European Patent Office posted 9 May 1997
concerning maintenance of European patent
No. 0 231 339 in amended form.

Composition of the Board:

Chairman: R. E. Teschemacher
Members: B. L. ter Laan
G. Santavicca

Summary of Facts and Submissions

- I. Mention of the grant of European patent No. 0 231 339 in respect of European patent application No. 86 905 007.0, filed on 22 July 1986 as international application PCT/US86/01504, published as WO 87/00484 and claiming priority from an earlier application in the U.S.A. (US 757478 of 22 July 1985), was published on 1 June 1994 (Bulletin 94/22) on the basis of a set of seven claims, Claim 1 reading:

"A non-flammable textile product (18) comprising a wool-containing fabric (12) forming the face of the product (18) when the latter is in a normal, non-fired state; and a flame-resistant carrier means (14) which supports the fabric (12) in the normal state, characterised in that the fabric (12) consists substantially entirely of wool free of chemical fire retardants, at least a portion of said fabric (12) being convertible by heat into a fire barrier layer when in a fired state, the carrier means (14) consisting of woven material which is interconnected with the fabric (12) so that it supports the latter in the fired state, the carrier means (14) burning more slowly than the fabric (12)."

Claims 2 to 7 referred to preferred embodiments of the product according to Claim 1.

- II. On 28 February 1995 a notice of opposition against the granted patent was filed, in which the revocation of the patent in its entirety was requested on the grounds set out in Article 100(a) EPC (lack of novelty and inventive step).

The opposition was *inter alia* supported by the following documents:

- D2 EP-A-0 118 871
- D4 GB-A-2 141 451.

III. By a decision issued in writing on 9 May 1997, the Opposition Division decided that the patent could be maintained in amended form. That decision was based on the claims as granted (main request) and two auxiliary sets of claims. The Opposition Division held that the main request did not comply with the requirements of Article 54 EPC, whereas the first auxiliary request was found to be allowable.

- (a) All the structural features of Claim 1 of the main request were disclosed in D2, as admitted by the Proprietor. The functional features depended partly on the structural properties, partly on the characteristics of the fire to which the product might be exposed. Since there was no reason why the product of D2, having the same structural properties, would behave differently from the claimed product, in particular why it would not be convertible into a fire barrier, Claim 1 of the main request was not novel.
- (b) Regarding the first auxiliary request, Articles 123(2) and 84 EPC were complied with. The additional feature of the wool-containing "pile" fabric rendered the claimed subject-matter novel. For inventive step, D2 was considered to be the closest prior art document. The problem, to provide a non-flammable textile product which became flameproof in use, thus blocking any

further fire and flux of heat, was considered to be solved. D2 contained no indication that the specific pile fabric would lead to the desired properties. D4 also did not mention a pile fabric, nor did it disclose any convertibility of the fabric into a fire barrier. The other documents on file, although mentioning pile fabrics, did not supply any hint towards the claimed solution of the above-defined problem.

IV. On 9 July 1997 the Proprietor (Appellant) lodged an appeal against the above decision and paid the prescribed fee simultaneously. The statement of grounds of appeal was filed on 4 September 1997.

The arguments of the Appellant, submitted in writing and during the oral proceedings held on 12 December 2001, can be summarized as follows:

(a) The invention was based upon the recognition that wool could have fire-retardant properties when it was arranged so as to provide an ash layer which acted as a fire barrier. Hence, three essential features of the claimed product were:

- (i) the fabric should be made of pure wool,
- (ii) the fabric should be convertible into a fire barrier layer and
- (iii) the carrier should be interconnected with the fabric so that it supported the latter in the fired state.

For the fabric to be convertible into a fire

barrier, the spacing of the wool, the mesh, the size of the wool threads, the density and the size of the grid played a role.

- (b) Neither D2 nor D4 disclosed the same structure as the claimed one, since the fabric component was not supported by the carrier, nor did it form a fire barrier in the fired state. In particular, the product of D2 consisted of both aramid and wool. The fire-proof properties of aramid were mentioned, but the wool was only used because of other characteristics. Contrary to the present product, the wool could be treated with fire retardants. Furthermore, in D2 the aramid and the wool were completely separate and not interconnected, which resulted in the wool burning and falling away when under fire. Like in D2, the wool in the product of D4 was not fire-resistant. D4 contained a specific teaching that the wool burnt away under fire, so that its ash could not provide a fire barrier layer, as in the claimed product. Since neither of D2 or D4 contained a disclosure to arrange the wool layer so as to act as a fire barrier, the claimed subject-matter was novel.

V. The Opponent (Respondent), after having answered to the statement of grounds of appeal, informed the Board in a letter dated 5 December 2001 that they would not be attending the oral proceedings, so that the oral proceedings were held in their absence (Rule 71(2) EPC).

VI. The written arguments of the Respondent can be summarized as follows:

- (a) D2 disclosed all the structural characteristics of the present product. If the products of D2 behaved differently from the present ones, it could only mean that Claim 1 did not contain all the structural measures for obtaining those features, so that the Opposition Division's decision was justified.
- (b) The patent as maintained was, however, in view of the other documents on file, an obvious combination so that it should be revoked.

VII. The Appellant requested that the decision under appeal be set aside and the patent be maintained as granted.

After deliberation of the Board at the end of the oral proceedings, the Appellant sought to introduce an amended Claim 1 in which fabric (12) was to be defined as being converted into a fire barrier.

The Respondent requested that the appeal be dismissed and the patent be revoked in its entirety.

VIII. The amendment to Claim 1 sought to be introduced by the Appellant would change the scope of the claim to a completely different product. Such a claim would not only exclude the original product, it also would include a structure which had not been covered by the original product claim. Therefore, a claim so amended would contravene Article 123(3) EPC and the amendment was not allowed.

Reasons for the Decision

1. The appeal is admissible.

Novelty

2. D2 describes a reinforced textile fabric, stable against mechanical influences, that enables protection against radiation and is flame resistant, in which at least part of the weft yarns consist of aramid fibres, and at least part of the warp yarns consist of wool, the structure being such that the aramid fibres are essentially located in the centre or at the bottom of the fabric and the wool fibres at the top of the fabric (Claim 1). This structure is demonstrated in a drawing and further described on page 4, second full paragraph, and page 6, second full paragraph, where it is stated that the top of the fabric consists of pure wool, whereas the bottom consists of aramid fibres.
3. There was no discussion about the disclosure in D2 of the requirements that a wool fabric should form the face of the product in the non-fired state and that the carrier should consist of a woven material and burn more slowly than the wool fabric. The arguments of the Appellant were mainly based on the alleged lack of disclosure in the prior art of the fire-resistant properties of wool and of the features that the wool should be convertible into a fire barrier layer and that the carrier and the wool fabric should be interconnected so as to provide support for the latter in the fired state.
 - 3.1 Regarding the fire-resistant properties of the wool, according to the patent specification in suit, it is the nature of the yarn - i.e. wool, which will burn and

in burning will char - that provides a textile surface resistant to flame (column 5, lines 35 to 49). A chemical reaction in the wool fabric, depending on temperature, reaction rate and combustion reactions occurs in the wool yarn. The wool beads due to its low conductivity. It burns when in contact with flame up to and above 1093°C. It does not melt, but it blackens, chars and recedes toward the warp and weft of the second yarn (column 6, line 36 to column 7, line 5).

Therefore, the nature of the yarn, wool, is apparently essential for its properties when fired. Whether or not that nature is described in the prior art, the fact remains that it is an inherent property of any wool yarn and accordingly inevitably present in the structure of D2 as well. Therefore, even if the wool yarns of D2 are not described to have flame-retardant properties or if they may be treated with a flame-retardant agent, the wool will have the same inherent properties and the behaviour of the wool yarns in the structure of D2, as a consequence of their identical nature, will not be any different. Hence, this feature cannot serve to distinguish the claimed structure from that of D2.

3.2 The second feature upon which the Appellant relied was that the wool should be convertible into a fire barrier layer when in a fired state.

3.2.1 That the term "convertible .. when in a fired state" means "capable of being converted when in a fired state" was not disputed. According to that wording, and in conformity with the patent specification, not only the presence of the wool, but also the conditions of the fire play a role: "the wool yarn is resistant to

burning but does burn when in contact with flame up to and above 1093°C" (column 6, lines 45 to 48). Hence, the wool, when exposed to hotter fires, will burn and may, as a consequence, burn away completely. The conditions of the fire under which the wool is converted into a fire barrier are not defined in the present claim, nor could they be part of it, since the claim concerns a product as such and unspecified external factors cannot serve to define a product. Hence, the circumstances of the fire, too, cannot serve to distinguish the claimed features from the prior art.

3.2.2 Also, according to the patent specification, the test conducted on many prototypes of the textile product failed. Success was achieved when the fire resistant carrier material was placed on the back of the wool material to allow the charred high pile wool material to cling to the high pick warp and weft of the carrier material (column 7, lines 13 to 19). This would suggest that both a high pile of the wool and a high pick of the warp and weft are essential features for rendering the wool convertible into a fire barrier.

However, the necessity of a high pile contradicts other information present in the patent:

- (i) the passage in which it is stated that other weaves, such as flat woven, are also useful (column 7, lines 23 to 25),
- (ii) the preferred embodiment of dependent Claim 3, according to which the wool fabric should be a pile fabric, implying that the wool fabric of independent Claim 1 must not be a pile fabric,

- (iii) the very existence of the appeal itself, which concerns the first instance decision to restrict the wool fabric to being a pile fabric.

The second feature indicated to lead to a successful test result, a high pick of the warp and weft, which during the oral proceedings was confirmed to be important for the achieved result, can also not be implied in the features necessary for the wool to be converted to a fire barrier in view of dependent Claim 7, according to which the pickage is 100 or more, which is considered high (column 7, lines 25 to 26), implying that the product according to Claim 1 can have a low pick.

Therefore, the term "convertible into a fire barrier layer" in Claim 1 cannot be considered to signify either a high pickage or a high pile and the conclusion must therefore be drawn that it is due to the specific properties of the wool itself in combination with the specific conditions of the fire that lead to the desired behaviour of the claimed product. Accordingly, in the absence of any more specific definition, any wool layer must be considered to be capable of being converted into a fire barrier due to the inherent properties of the wool and depending on the circumstances of the fire.

- 3.2.3 The Appellant stated that in D2 the wool would burn away under fire. However, not only is D2 silent regarding that feature, but also the Board fails to see any structural differences between the claimed products and those of D2, so that the same behaviour can be expected for the structure of D2.

3.2.4 For the reasons outlined above, the conclusion is drawn that, if the structure of the claimed product is such that the wool layer is convertible into a fire barrier, the same must be the case for the products of D2.

3.3 Regarding the interconnection of the carrier and the wool, the Appellant stated that that feature was not disclosed in D2, because in that document the wool and carrier material, made of aramid yarns, were completely separate from each other. However, the Board fails to see that such could be the case since such a construction would lead to two separate layers, one of wool and the other one of the aramid carrier material, which would not form the coherent structure described in D2.

Therefore, the Board is of the opinion that D2 describes an interconnection between the wool and the fabric, the latter supporting the former. The question is, whether that interconnection would also support the wool layer in the fired state.

In any structure where the wool burns away, the notion of support for the wool by the carrier means is meaningless. Hence, the support for the wool in the fired state depends on the wool still being present. The Appellant argued that in D2 the wool burned away under fire, so that there was nothing left to support and no fire barrier layer could be formed. However, as pointed out above (point 3.2), whether the wool burns away or not depends on a number of factors which cannot be regarded as forming part of the subject-matter now being claimed.

For the above reasons, none of the features defined in

Claim 1 distinguishes its subject-matter over D2, so that the requirements of Article 54 EPC are not fulfilled.

4. In view of the above conclusion it may be left undecided whether D4, too, would have to be considered as novelty destroying, taking into account the corresponding structure of the disclosed fabric, which would necessarily lead to the same behaviour, on the one hand, and the explicit statement in D4 that the wool is completely removed under fire (page 1, lines 68 to 72), on the other hand (cf. point 3 above).
5. The Respondent (Opponent) requested the revocation of the patent. However, only the Appellant (Proprietor) had filed an appeal in this case. The Respondent, by not filing an appeal, has accepted the decision of the first instance. Therefore, the Respondent can, at most, request the dismissal of the appeal, not the revocation of the patent.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

G. Eickhoff

R. Teschemacher