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D E C I S I O N
of 19 July 1994

Case Number: T 0647/91 - 3.2.5

Application Number: 84104950.5

Publication Number: 0124869

IPC: D03D 1/00

Language of the proceedings: EN

Title of invention:

High density, water-repellent textile fabric

Patentee:

TEIJIN LIMITED

Opponent:

Unitika Ltd
Kanebo Ltd
HOECHST Aktiengesellschaft
Toray Industries, Inc.

Headword:

-

Relevant legal provisions:

EPC Art. 123(3), 100(b)
EPC.R. 88

Keyword:

"Opposition grounds - insufficiency of disclosure"
"Correction under Rule 88 EPC - allowable"

Decisions cited:

G 0003/89

Catchword:

-



Case Number: T 0647/91 - 3.2.5

D E C I S I O N
of the Technical Board of Appeal 3.2.5
of 19 July 1994

Appellant:
(Proprietor of the patent) TEIJIN LIMITED
11 Minamn Honmachi 1-chome
Higashi-ku
Osaka-shi
Osaka-fu (JP)

Representative:
Hoeger, Stellrecht & Partner
Uhlandstrasse 14c
D-70182 Stuttgart (DE)

Respondents:
(Opponent 01) Unitika Ltd.
No. 50, Higashihonmachi 1-chome
Amagasaki-shi, Hyogo (JP)

Representative:
Brauns, Hans-Adolf, Dr. rer. nat.
Hoffmann, Eitle & Partner
Patentanwälte
Postfach 81 04 20
D-81904 München (DE)

Respondent:
(Opponent 02) Kanebo Ltd
17-4 Sumida 5-chome
Sumida-ku
Tokyo 131 (JP)

Representative:
Seaborn, George Stephen
c/o Edward Evans & Co.
Chancery House
53-64 Chancery Lane
London WC2A 1SD (GB)

Respondent:
(Opponent 03) HOECHT Aktiengesellschaft
Zentrale Patentabteilung
Postfach 80 03 20
D-65903 Frankfurt (DE)

Representative: -

Respondent: Toray Industries, Inc.
(Opponent 04) Inc.2, Nihonbashi-Muromachi 2-Chome, Chuo-ku
Tokyo 103 (JP)

Representative: Coleiro, Raymond
MEWBURN ELLIS
York House
23 Kingsway
London WC2B 6HP (GB)

Decision under appeal: Decision of the Opposition Division of the
European Patent Office orally given on 4 June 1991
and posted on 25 June 1991 revoking European
patent No. 0 124 869 pursuant to Article 102(1)
EPC.

Composition of the Board:

Chairman: C. V. Payraudéau
Members: H. P. Ostertag
M. H. M. Liscourt

Summary of Facts and Submissions

- I. The Appellant (Proprietor of the patent) lodged an appeal against the decision of the Opposition Division, by which the European patent No. 0 124 869 had been revoked on the ground that its subject-matter did not involve an inventive step in the sense of Article 56 EPC.
- II. In his Statement of Grounds the Appellant requested that the decision under appeal be set aside and that the patent be maintained on the basis of the printed patent specification as amended in the course of the oral proceedings before the Opposition Division according to the main request. These amendments consisted in a correction of the coefficients in the formula for the cover factor, the deletion of lines 49 to 53 of column 4, and the replacement of the words "may be" by "are" in column 4, line 54. The corrected formula for the cover factor should read $CF = 2.54 n \sqrt{(1.1 \text{ dtex})}$, where n is the number of warps or wefts per cm and dtex is the titer of each warp or weft expressed in the metric unit "dtex".
- III. In a communication pursuant to Article 11(2) EPC of the Rules of Procedure, the Board expressed the preliminary opinion that a correction of the formula defining the cover factor appeared to be allowable under Rule 88 EPC, but that the proper expression for the cover factor should read $CF = 2.54 n \sqrt{(0.91 \text{ dtex})}$.
- IV. The Parties were summoned to oral proceedings. Respondent II (Opponent II) informed the Board that he would not attend the oral proceedings.

V. Oral proceedings were held.

- (i) The Appellant requested that the decision under appeal be set aside and that the patent be maintained in amended form on the basis of the printed patent specification, wherein throughout the expression for the cover factor, $CF = 0.39 n \sqrt{(0.91 \text{ dtex})}$, would be replaced by the expression $CF = 2.54 n \sqrt{(0.91 \text{ dtex})}$, wherein lines 49 to 53 of column 4 would be deleted and wherein in column 4, line 54, the words "may be" would be replaced by the word "are" (main request). The Appellant also submitted a first auxiliary request, which entailed the same amendments to the patent specification as those according to the main request, with the addition of the word "impregnated" after the word "density" in line 1 of Claim 1. As a second auxiliary request maintenance of the patent in amended form according to the first auxiliary request was requested, whereby additionally the expression 1000 μm or less in line 10 of Claim 1 would be replaced by the expression 1 to 150 μm .
- (ii) The Respondents requested that the appeal be dismissed on the grounds that (a) the subject-matter of the patent was not patentable within the terms of Articles 52 and 56 EPC and (b) the patent did not disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art. The Respondents also submitted that the proposed amendment of the formula for the cover factor should not be allowed as a correction under Rule 88 EPC, since this amendment would entail an inadmissible amendment within the meaning of

Article 123 EPC. On the other hand, the patent with the uncorrected, i.e. wrong, formula had to be revoked for this reason if for no other.

- (iii) Claim 1 according to the main request reads as follows:

"1. A high density, water-repellent textile fabric comprising a number of warps and wefts each consisting of a number of extremely fine, water-repellent fibers having a titer of 1.32 dtex or less, characterized in that said woven fabric has at least one finely rugged surface thereof formed by a water-repellent fluff layer comprising a number of extremely fine, water-repellent fluffs in the form of loop-piles extending outward from said fabric surface and having a height of 1000 μm or less and having a sum of cover factors in warp and weft directions of said fabric of from 1,400 to 3,400, which has been determined in accordance with the equation: $CF = 2.54 n \sqrt{(0.91 \text{ dtex})}$, wherein CF represents the cover factor of said fabric in the warp or weft direction thereof, n represents the number of the warps or wefts per cm in said fabric, and dtex represents the titer of each warp or weft in said fabric."

- (iv) The Appellant essentially submitted the following arguments on the correction requested in accordance with Rule 88 EPC

The cover factor of the fabric in the warp or weft direction is correctly defined in the application as filed as $CF = n \sqrt{(de)}$, where n is the number of the warps or wefts per inch and de is the denier of each warp or weft in the fabric. During the examination procedure the non-metric units "inch"

and "denier" were expressed in the metric units "cm" and "dtex", respectively, whereby the cover factor was erroneously expressed as $CF = 0.39 n \sqrt{(0.91 \text{ dtex})}$ instead of $CF = 2.54 n \sqrt{(0.91 \text{ dtex})}$, wherein n is now the number of the warps of wefts per cm.

The Appellant further submitted that the skilled reader of the patent specification as granted would immediately recognise that the formula for the cover factor is wrong and, referring to the Examples, that the error resides in an erroneous conversion of number of yarns per inch into number of yarns per cm such that the cover factor remains numerically the same. The coefficient 0.91 arises from reciprocating the approximation 1 den . 1.1 dtex (the exact conversion 1 den = 9/10 dtex would give rise to a factor 0.9).

Respondent II had essentially submitted in writing that, firstly, it is not immediately evident from claim 1 that there is an error in the claim, and, secondly, it is not evident, at least not immediately evident that nothing else than what the Appellant offers as a correction would have been intended. For these reasons the correction should not be allowed.

Respondent I submitted essentially that from the fact that three of the four Opponents have discovered both the error and its correction, it cannot be deduced that the error and its correction were immediately evident, since the Opponents who did discover the error had studied the application documents. That Opponent II failed to recognise the error (cf. his opposition brief of 26 June 1989) would imply that the error is not

evident. The patent specification gives no basis at all for the proposed correction. A correction of the cover factor would also contravene Article 123(3) EPC, since the protection conferred by the patent would shift to a range totally different from the range as claimed in the granted patent.

Respondent III argued in addition to the arguments put forward by Respondent I that the correction now proposed by the Proprietor was certainly not unique: a different correction had already been proposed by the Proprietor during the oral proceedings before the Opposition Division, viz. $CF = 2.54 n \sqrt{1.1 \text{ dtex}}$. Hence, it was not immediately evident that nothing else than what was now offered as a correction would have been intended. Since the warp and weft densities in the Examples 1 and 2 are expressed in the number of yarns per 2.54 cm, per 2.45 cm and per 3.79 cm, the skilled person would not link a possible error in the formula for CF with a conversion error from non-metric to metric units.

Respondent IV argued in addition to the arguments put forward by the other Respondents that the obviousness of a Rule 88 correction must be assessed objectively and must be self-evident from the document in its entirety, and without reference to the file history, cf. T 200/89, OJ 1992, 46. Since the definition of the cover factor varies widely in the literature, it would be impossible to guess what definition was intended. The numerical factor 0.39 was not readily recognised as the reciprocal of 2.54.

- (v) After deliberation of the Board, the Chairman gave the decision that the request for correction in accordance with Rule 88 EPC was allowed. The Chairman then invited the parties to present their arguments with respect to the alleged insufficient disclosure.
- (vi) The Appellant essentially submitted as follows:
The patent specification discloses the invention, as claimed, in such terms that the technical problem and its solution can be readily understood by the person skilled in the art. How loop-pile formed fluffs can be prepared is explained in the description, see e.g. column 4, line 57 to column 5, line 3. Moreover, two examples of the present invention and one comparative example are illustrated in the description. Example 1 merely demonstrates that an additional heat calendering step is sometimes beneficial. It goes without saying that the height of the loop piles is to be measured from the surface of the fabric.

The Respondents essentially argued as follows:
Nothing is taught in the description as to how one can obtain a fluff layer in the form of loop piles having a height of 1000 μm or less, let alone how one can obtain loop piles having a height of 1 to 400 μm . The lower boundary of the latter range would be in the same order of magnitude as the extremely fine fibre diameter. Example 1 discloses a high-density textile fabric, which shows substantially all the features of claim 1. Nevertheless, this fabric is said to exhibit an unsatisfactory water-repellent property when it is not heat calendered. The fabric according to Example 2 consists of the same blend of filaments as the fabric according to Example 1, but is less

dense than that fabric. So one would expect that also in this embodiment the heat calendering step is necessary to obtain a satisfactory water repellency. Nonetheless, the non-calendered fabric of Example 2 is said to exhibit 100 points of satisfactory water-repellent property. Neither of these Examples state the height of the loop piles. How the height of the loop piles is to be measured is also unclear: a baseline where to measure from is not defined, and it is not clear whether the loop piles are to be measured before or after a heat calendering step (due to which the loop piles will be flattened and no longer extend outward from the fabric). Although the description (see column 3, lines 32 to 36, and column 4, line 2) and Claim 1 suggest that the water-repellency is due to the fluff layer comprising loop-piles, the fabrics according to the Examples are subjected to a water-repellent treatment.

Summarising, it is not clear whether the heat calendering step is mandatory for solving the problem posed, and it is not clear how the height of the loop piles is defined, nor how the claimed loop pile height range is achieved.

- (vii) After deliberation of the Board, the Chairman gave the decision that the appeal was dismissed on the ground that the European patent does not disclose the invention in a manner sufficiently clear and complete to be carried out by a person skilled in the art.

Reasons for the Decision

1. *Correction under Rule 88 EPC*

1.1 The Appellant requests a correction under Rule 88 EPC of an error in the printed patent specification. The requirement laid down in Rule 88, second sentence, EPC that the correction must be obvious implies that the skilled person having studied the patent specification relative to the date of filing must be in a position to objectively and unambiguously recognise the incorrect information using common general knowledge, see G 3/89, OJ 1993, 117, Reasons 2.

For a correction to be admissible it must therefore meet the following two conditions:

(a) It must be evident that an error has been made,
and

(b) It must be evident what the correction should be.

1.2 In the view of the Board the person skilled in the art would immediately recognise that the requirement for the cover factor as given in the printed patent specification, i.e. $1400 \leq CF = 0.39 n \sqrt{(0.91 \text{ dtex})} \leq 3400$ would result - even for the lower boundary condition - in a extremely dense fabric, which would have an unacceptable stiff hand, if at all possible to manufacture. Hence, condition (a) referred to above is met. It is evidently not possible to determine from the requirement alone, whether the error resides in the formula for the cover factor or in the boundary values.

The skilled person would then, when studying the first Example, immediately recognise that the error resides in an erroneous conversion of inches into centimetres, especially since the warp density in Example 1 is given per 2.54 cm and having regard to the fact that the Proprietor is a firm having its place of business in Japan, where inches and deniers are normally used. A confirmation, that the correct expression for the cover factor has indeed been found, would be given by reworking the Examples 2 and 3. The requirement for the cover factor calculated with the correct formula would also give a meaningful result for the fabric density. Hence, condition (b) is also met.

- 1.3 It is not questionable that the conditions of Article 123(2) EPC are satisfied, since the corrected formula corresponds to the correct conversion of the formula given in inches and deniers in the application as filed.

However, Article 123(3) EPC provides that the claims of the European patent may not be amended in such a way as to extend the protection conferred.

- 1.4 The Board agrees with the Respondent I that an effective shifting of the scope of a claim would infringe Article 123(3) EPC and would therefore not be allowable.

However, in the present case, a fair reading of Claim 1 would bring the reader to the necessary conclusion that this claim needed interpretation. In conformity with Article 69(1) EPC, he would refer to the description to interpret the claims and, with the help of the description he would be led to the correction, which has been considered above to be allowable under Rule 88 EPC.

1.5 Therefore, since the corrected version of Claim 1 corresponds to its fair reading by the person skilled in the art, the provisions of Article 123(3) EPC are also satisfied.

2. *Sufficiency of disclosure*

2.1 A European patent must disclose the invention in a manner sufficiently clear and complete to be carried out by a person skilled in the art, cf. Article 100(b) EPC.

The problem that the present invention seeks to solve is to provide a high density textile fabric having an excellent water-repellent property. This problem is said to be solved by the fabric according to Claim 1.

2.2 An essential feature for performing the invention is that the high density fabric has "at least one finely rugged surface formed by a water-repellent fluff layer comprising a number of extremely fine, water-repellent fluffs in the form of loop-piles extending outward from said fabric surface and having a height of 1000 μm or less", see Claim 1. This also follows from column 3, lines 21 to 31, where it is stated that the finely rugged surface has a number of concavities and convexities having a size of 1000 μm or less, more preferably from 1 to 150 μm , still more preferably 30 to 100 μm . These fine concavities are said to be highly effective for repelling water from the surface.

2.3 In the embodiment of Example 1, the fabric is said to be scoured, relaxed, dried, pre-heat set, dyed, dried, water-repellent treated, and heat calendered, whereby in the relaxation step, the fabric is treated under a very small tension so that loop-shaped fluffs are formed (see column 7, lines 24 to 31). The calendered fabric is said to exhibit 100 points of satisfactory water-repellent

property, an air permeability of 0.6 ml/cm².sec and an excellent wind-breaking property (see column 7, lines 54 to 60).

A comparative fabric treated as above except for the calendering step, is said to exhibit, on the contrary, an unsatisfactory water-repellent property (see column 7, line 61 to column 8, line 2).

From this Example the conclusion could be drawn that the calendering step, which is however not mentioned in the claims, is an essential feature for the solution of the problem of the invention.

However, according to Example 2, a less dense fabric produced exactly in the same way as the fabric of Example 1, except that it has not been heat calendered, is said to exhibit a satisfactory water-repellent property..

The fact that the fabrics of both Examples 1 and 2 are subjected to a water-repellent treatment calls into question that the water-repellency is merely due to the finely rugged surface of the high-density fabric.

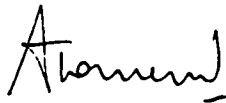
- 2.4 It must therefore be concluded that the European patent does not disclose the invention claimed in Claim 1 according to the main request in a manner sufficiently clear and complete to be carried out by a person skilled in the art.
- 2.5 The same reasoning applies to Claim 1 of the first and second auxiliary requests, which do not differ in this respect from the main request. It is also to be noted, as concerns the second auxiliary request, that no disclosure is given in the description how a height of the piles between 1 and 150 μ m may be obtained.

Order

For these reasons it is decided that:

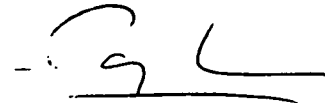
The appeal is dismissed.

The Registrar:



A. Townend

The Chairman:



C. Payraudeau