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D E C I S I O N
of 11 January 1994

Case Number: T 0661/91 - 3.2.5

Application Number: 82103239.8

Publication Number: 0066072

IPC: D03D 15/08

Language of the proceedings: EN

Title of invention:
Fabrics with a crêpe effect made of textured synthetic yarns

Patentee:
Val Lesina S.p.A.

Opponent:
Hoechst Aktiengesellschaft Zentrale Patentabteilung

Headword:
-

Relevant legal norms:
EPC Art. 56

Keyword:
"Inventive step (no)"

Decisions cited:
-

Catchword:
-

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Case Number: T 0661/91 - 3.2.5

D E C I S I O N
of the Technical Board of Appeal 3.2.5
of 11 January 1994

Appellant: (Opponent)
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Representative:
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Decision under appeal:
Decision of the Opposition Division of the European Patent Office dated 27 June 1991 rejecting the opposition filed against European patent No. 0 066 072 pursuant to Article 102(2) EPC.

Composition of the Board:

Chairman: C.V. Payraudeau
Members: H.J. Seidenschwarz
H.A. Berger

Summary of Facts and Submissions

I. By the decision under appeal the Opposition Division rejected the opposition filed against the European patent No. 0 066 072.

The independent Claims 1 and 4 of the patent as granted read as follows:

"1. A woven or knitted fabric with a crepe effect constituted by continuous synthetic yarns, characterized in that at least part of the yarns have parallel filaments, are texturized through the false twisting method, are substantially non twisted, have a count of between 30 and 160 Dtex and "a yarn count/number of filaments" ratio of between 5 and 19 Dtex and have a shrinkage in boiling water of at least 28%.

4. Method for producing fabric with a crepe effect, characterized by comprising a stage in which yarns having "yarn count/number of filaments" ratio as defined in Claim 1 are texturized through the false twisting method, either with a magnetic or a friction spindle, and a further stage in which the yarns are passed through the setting oven at such a temperature as to obtain high shrinkage of at least 28% in boiling water."

II. Oral proceedings were held on 11 January 1994.

(i) The Appellant (Opponent) requested that the decision under appeal be set aside and the patent be revoked. The Respondent (Proprietor of the patent) requested that the appeal be dismissed.

(ii) The following documents already referred to in the opposition proceedings were considered as essential by the Appellant:

R1: GB-A-1 231 538;
R2: Dr H. Scherzberg: "Texturierte Garne" - 1968 edited by Melliand Textilberichte KG, pages 67 to 69;
R3: EP-A-0 022 065; and
R4: DE-A-1 915 821.

(iii) The arguments of the Appellant can be summarised as follows:

According to the Appellant, a crepe fabric has a hard handle ("harten Griff") which depends decisively on the count of the individual filament. Such a fabric is already disclosed by document R1 which concerns a crepe fabric according to the title of said document and the description including the examples and figures. The use of the known fabric as bath towels which are suitable for scrubbing the human body confirms the fact that this known fabric has a crepe effect within the above-mentioned meaning.

Furthermore, document R1 discloses that a part of the yarns are textured by a false twisting method and are substantially non-twisted. The shrinkage of these yarns, which is not decisive, results automatically from the application of the false twisting method and is higher than 28% with respect to the weft shrinkage of the final fabric obtained by the method according to Example 2. Therefore, the subject-matter of Claim 1 of the patent as granted is not new. At least, this subject-matter does not involve an

inventive step since the parameters specified in Claim 1 of the granted patent are obvious to the person skilled in the art who knows document R1 and applies to its teaching his general knowledge represented, e.g. by document R2. However, the person skilled in the art also arrives at a fabric with a crepe effect as claimed by the patent in suit when starting from the documents R3 or R4 in particular, from the fabrics disclosed by Example 3 of document R3 and the Examples 3 and 5 of document R4 respectively.

(iv) The Respondent contested the submissions of the Appellant, arguing in particular, that the specific structure of the fabric according to document R1 was due to the use of crimped multi-filament yarns for the weft and mono-filament yarns for the warp and not to the use of twisted or textured yarns as specified in Claim 1 of the patent in suit. Furthermore, the important difference in deniers which existed between the weft and warp yarns contributed to the specific structure of said known fabric. The invention, however, consisted in the use of a yarn as defined in Claim 1. In other words, according to the invention the highly twisted yarn used in the classical crepe has been substituted by a yarn textured by the false twisting method in combination with a high count of the individual filament having the defined shrinkage. It had been thus possible to obtain a fabric similar to the classical "crêpe de chine" but much cheaper.

The Respondent confirmed the submissions of the Appellant that the count of the individual filament (fine count - coarse count) determined

the characteristic of a fabric and consequently the type of this fabric, that the yarns of the fabrics disclosed by document R1 had a shrinkage in boiling water which was about 10% different from the shrinkage of the final fabrics and that the shrinkage of at least 28% of the yarns was of minor consequence for providing a fabric with a crepe effect.

With respect to documents R2, R3 and R4, the Respondent was of the opinion that the yarns according to document R2 were treated by a second heat-setting following the false twisting method for obtaining the mentioned amount of shrinkage and that the yarns according to the documents R3 and R4, which consisted of core and sheathing filaments, could not be considered equivalent to the yarn as defined in Claim 1 of the patent in suit since this yarn according to Claim 1 consisted only of one type of filament.

Reasons for the Decision

1. The appeal is admissible.

2. *Prior art generally known*

2.1 The precharacterising parts of Claims 1 and 4 acknowledge a woven or knitted fabric with a crepe effect constituted, according to Claim 1, by continuous synthetic filament yarns generally known in the art as set forth in the description of the patent in suit. According to this description, the main characteristic of a **crepe fabric** of the known art is the **accentuated**

particular crinkling of its surface (cf. column 1, lines 9 to 13).

This definition corresponds to the definition given in the decision of the Technical Board of Appeal 3.2.1 of 6 July 1988 (case T 106/86; unpublished) cited in the decision of the Opposition Division of 27 June 1991 rejecting the opposition, according to which (cf. point 6.2, paragraph 3) the English term "crepe fabric" designates "a general classification of fabrics woven or knitted with a broad range of **crinkled** or **grained** surface effect".

2.2 Furthermore, it is generally known that one of the possibilities for obtaining the **crinkled surface** is the provision of a **slight regular crimp** in the yarns, which are normally produced by using twisted yarns having a number of twists per metre which often exceeds 1000 (cf. description of the patent in suit, column 1, lines 14 to 28).

3. *Technical problem to be solved, solution*

3.1 Fabrics constituted by continuous synthetic yarns having a high twist can be produced at low hourly production rates with significant adverse economic implications, apart from disadvantages which arise from the stringent requirements as to the care to be taken during the preparatory stages of producing these fabrics (cf. column 1, line 51 to column 2, line 16).

From this follows that the problem to be solved resides in the provision of fabrics with a crepe effect which can be produced at high production rates and with enhanced reliability.

3.2 The solution of the problem is based on the idea of replacing the hitherto used highly twisted continuous synthetic yarns by substantially non-twisted yarns having an appropriately selected count and number of filaments per yarn and imparted high shrinkage. This idea is realised according to the independent claims by texturing yarns having parallel filaments, a count and "a yarn count/number of filaments" ratio of 30 to 160 dtex and 5 to 19 dtex and a degree of shrinkage in boiling water exceeding 28%.

4. *Prior art disclosed by document R1.*

According to the Respondent, document R1 corresponds exactly to document FR-A-2 135 092 which has been thoroughly examined during the procedure up to grant and appeal procedure (cf. the above-mentioned decision with the case number T 106/86).

Document FR-A-2 135 092 concerns, according to its title, a fabric, especially for bath towels. Document R1 (GB-A-1 231 538), although of the same patent family, however concerns, according to its title, a crepe fabric. It is true that the description of document FR-A-2 135 092 mentions several times the crepe effect and it is true that the overall content of both documents is very similarly, however the stress put on the bath towel in document FR-A-2 135 092 may lead to the conclusion that in reality the fabric described therein is a terry cloth bath towel fabric. Document R1 (GB-A-1 231 538) however clearly concerns a crepe fabric, not only because of its title but also because of the described use of the crimped multifilament yarn (see page 1, lines 25 to 29) which is a particular feature for obtaining a fabric with crepe effect (see paragraph 2.2 above).

Therefore, having regard to the definitions of a **crepe fabric** as given above (cf. point 2) and which definitions are known to the person skilled in the art, document R1 relates to fabrics with a **crepe effect** produced from continuous texturised synthetic yarns.

The description of the known **crepe fabric** reveals that at least a part of its yarns, i.e. its weft yarns,

- have parallel filaments (cf. page 1, lines 11 and 12, 15 and 16, 84 and 85; Figure 1);

- are textured through the false twisting method for crimping the yarns (cf. page 1, lines 25 to 29);

- have a count from 100 to 400 denier (Claim 1), which corresponds to 110 to 440 dtex;

- have 10 to 40 filaments (Claim 2), and, therefore,

- have "a yarn count/number of filaments" ratio or a count of the individual filaments between 2.75 dtex and 44 dtex.

5. *Novelty*

In the absence of any specific information regarding the shrinkage in boiling water of the multi-filament yarns as specified in document R, the subject-matters of Claim 1 and Claim 4 of the patent in suit are new, since according to these subject-matters the continuous synthetic yarns have a shrinkage in boiling water of at least 28%.

6. *Inventive step*

6.1 The person skilled in the art knows as it is acknowledged in the description of the patent in suit, column 2, lines 17 to 20 and disclosed in document R2 that one of the main texturing processes usually applied to continuous filament yarns is the false twisting method.

6.2 Moreover, it is generally known in the art (cf. document R2: page 69, left-hand column, last paragraph and right-hand column, lines 1 to 25) that continuous synthetic yarns textured through the false twisting method can have a shrinkage in saturated steam from 30 to 60% depending on the operation conditions of the false twist machine.

Both parties agreed that the shrinkage in boiling water of the yarns as disclosed by document R1 is only somewhat different, i.e. about 10% from the weft shrinkage of the final crepe fabric produced from these yarns.

6.3 It was also undisputed between the parties that it is general knowledge that the count of the individual filaments determines the characteristic of the final fabric produced from these filaments and consequently its use.

6.4 From the above, it follows that it is obvious to the person skilled in the art, who is aware of this general knowledge, to select the specific parameters for the yarns (count of the yarns, count of the individual filaments and shrinkage of the yarns) in accordance with the intended use of the woven fabric with a particular **crepe effect** consisting of a multi-filament yarn which has been treated according to the teaching of document R1.

6.5 For the foregoing reasons, the subject-matter of Claim 1 lacks an inventive step as required by Article 56 EPC.

The same applies to the subject-matter of Claim 4, since it is also generally known to the person skilled in the art that texturing is carried out by means of the magnetic or friction type spindle with a temperature being maintained in the setting oven such as to obtain a yarn with high shrinkage (cf. description of the patent in suit: column 3, lines 3 to 7; document R2: page 69, left-hand column, line 1; right-hand column, lines 1 to 25).

7. Consequently, the patent cannot be maintained.

Order

For these reasons, it is decided that:

1. The decision under appeal is set aside.

2. The patent is revoked.

The Registrar: The Chairman:

A. Townend C. Payraudeau