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Datasheet for the decision of 5 November 2009

Case Number: T 0912/07 - 3.2.05

Application Number: 97925171.7

Publication Number: 0906536

IPC: F16L 47/00

Language of the proceedings: EN

Title of invention:
Abrasion protection

Patentee:
Tyco Electronics UK Limited

Opponent:
Langendorf Textil GmbH & Co. KG

Headword:
-

Relevant legal provisions:
EPC Art. 83, 111(1)

Relevant legal provisions (EPC 1973):
-

Keyword:
"Sufficient disclosure (yes)"

Decisions cited:
-

Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 0912/07 - 3.2.05

D E C I S I O N
of the Technical Board of Appeal 3.2.05
of 5 November 2009

Appellant: (Patent Proprietor)
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Decision under appeal:
Decision of the Opposition Division of the European Patent Office posted 29 March 2007 revoking European patent No. 0906536 pursuant to Article 102(1) EPC 1973.

Composition of the Board:

Chairman: W. Zellhuber
Members: W. Widmeier
C. Rennie-Smith

Summary of Facts and Submissions

I. The appellant (patent proprietor) lodged an appeal against the decision of the Opposition Division revoking European patent No. 0 906 536.

II. Opposition had been filed against the patent as a whole based on Articles 100(a) EPC (lack of novelty, Article 54 EPC, and lack of inventive step, Article 56 EPC) and 100(b) EPC.

The Opposition Division held that the subject-matter of claim 1 was not disclosed in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art (Article 83 EPC).

III. The appellant requested that the decision under appeal be set aside and that the patent be maintained on the basis of claims 1 to 24 submitted on 30 July 2007 together with the statement of grounds of appeal.

IV. The respondent (opponent) requested that the appeal be dismissed.

V. On 4 September 2009 and 21 October 2009, respectively, the respondent and the appellant withdrew their requests for oral proceedings.

VI. Claim 1 reads as follows:

"1. A circumferentially-heat-shrinkable sheath of woven fabric, capable of use on a non-linear shaped conduit, for example to provide impact cushioning and/or abrasion resistance, wherein the sheath provides a

substantially unobscured outer fabric surface and comprises
hoop filaments extending substantially circumferentially around the sheath, at least some of which hoop filaments are heat-shrinkable, and
multi-filament length filaments extending substantially along the sheath,
and wherein the length filaments are selected to be sufficiently flexible, at least at temperatures to which they are subjected during heat-shrinking of the sheath in use, for the heat shrinkage of the hoop filaments to crimp the length filaments to any extent causing portions of the length filaments either
(i) to project outwardly from the shrunken fabric sheath to a maximum distance in excess of the maximum projection distance of the thus-shrunken hoop filaments, or
(ii) to increase such excess projection distance if already existing before the heat shrinkage;
whereby portions of the hoop filaments are clearly visible from the exterior of the sheath before heat shrinking and the length filaments substantially conceal the hoop filaments from exterior view in the fully heat-shrunken sheath."

VII. The appellant's arguments in the written proceedings can be summarised as follows:

It is not necessary to specify in claim 1 various variables such as weave densities, tex values, particular materials and shrink ratios, or to indicate in the description how to calculate these values. The design of the product depends on its use and thus especially on its size. Nonetheless the patent in suit

provides the necessary information for a person skilled in the art. The important point is that the heat shrinkage is carried out by the hoop filaments and the mechanical protection after shrinkage is carried out by the longitudinal filaments. It is clear from the description of the patent in suit what is required to achieve this, namely that, as a result of the shrinkage, the crimp is in the longitudinal filaments rather than in the hoop filaments. It is thus also clear that one must consider the shrinkage force of the hoop filaments and the flexibility of the longitudinal filaments and the amount of hoop material and longitudinal material. In accordance with these requirements a person skilled in the art is able to select the tex value and weave density of the hoop fibres and of the longitudinal fibres and to select materials with the necessary shrinkage force and flexibility.

Thus a skilled reader of the patent in suit would have no difficulty in operating the invention across the breadth of the claims.

VIII. The respondent's arguments in the written proceedings can be summarised as follows:

The features of claim 1 from "and wherein the length filaments" up to the end of the claim concern merely the function and the result to be achieved rather than the materials to be used for the hoop and length filaments, the necessary parameters of these materials, and the necessary measures during production of the woven fabric. The example described in paragraph [0020] of the patent in suit relates to a very special combination of parameters. However, the patent in suit

lacks a description how to carry out the subject-matter of claim 1 within the complete breadth of this claim. It is necessary to specify the rules for the selection of the materials to be used. It is necessary to specify the weave densities and tex values for the hoop and longitudinal filaments, the shrinkage properties of the hoop filaments, the flexibility of the longitudinal filaments, etc. Without such information a person skilled in the art is not able to select appropriate materials, to find an appropriate combination of parameters and thus to form a sheath of woven fabric having the functions as indicated in claim 1. The suggestion in the patent in suit that all this may be found by trial and error cannot be considered as a sufficient disclosure.

Thus, the subject-matter of claim 1 is not disclosed in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art.

Reasons for the Decision

1. The patent in suit aims to provide a circumferentially heat shrinkable sheath having a good mechanical resistance in order to protect a conduit (c.f. paragraphs [0001], [0002] and [0005]). The solution as specified in claim 1 is a woven fabric consisting of heat shrinkable hoop filaments and flexible length filaments which is designed such that the heat shrinkable hoop filaments are visible from the exterior before shrinking and that they shrink to such an extent that the length filaments conceal the hoop filaments from exterior view. This solution is based on the idea

to leave the protection property exclusively on the length filaments of the fabric.

The length filaments must therefore fulfil two basic requirements. They must be flexible enough to be drawn inwards by, and to the point where they conceal the hoop filaments, and they must provide the necessary protection property in accordance with the intended use.

It follows that the amount of shrinkage and the shrinkage force of the hoop filaments must be high enough to be able to shrink sufficiently in combination with the length filaments. It also follows that the weave density and tex values of the fabric must match up with these requirements.

2. Claim 1 does not specify the materials and the parameters to be used. However, as the subject-matter of this claim is intended for use in different environments and for different conduit sizes, it is not appropriate to restrict the claim to specific materials and parameters, because this would mean an undue restriction of the scope of protection the appellant is entitled to.

Paragraphs [0008] to [0012] of the patent in suit give instructions as to the materials which are suitable for the fibres and the details to be observed for the production of the fabric. With these instructions it is possible to select hoop filaments having the necessary shrinkage properties, length filaments having the necessary flexibility and protection properties, and the necessary weave parameters, in accordance with the given conduit to be protected. Although this may still

require some trial and error, there is no evidence that this would cause an undue burden. In that respect it should be noted that a patent specification is directed at a person skilled in the art and that shrinkable sheaths and the materials used for them are well-known products.

3. The Board is therefore convinced that a skilled person is able to find, without undue burden, suitably flexible length filaments, suitably shrinkable hoop filaments and a suitable density of warp and weft fibres and to realize the features of claim 1 within the complete breadth of the claim.

The subject-matter of claim 1 is therefore disclosed in the patent in suit sufficiently clearly and completely for it to be carried out by a person skilled in the art so that the requirements of Article 83 EPC are met.

4. The grounds of opposition under Article 100(a) EPC (lack of novelty and lack of inventive step) were not subject of the decision under appeal.

It is therefore appropriate to remit the case in accordance with Article 111(1) EPC to the first instance to give the parties the opportunity to defend their case, if necessary, before two instances.

Order

For these reasons it is decided that:

The decision under appeal is set aside.

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

The Registrar: The Chairman:

D. Meyfarth W. Zellhuber