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**Datasheet for the decision
of 24 February 2009**

Case Number: T 1776/06 - 3.4.02

Application Number: 01953208.4

Publication Number: 1307773

IPC: G02B 6/44

Language of the proceedings: EN

Title of invention:
Optical fibre cable

Patentee:
PIRELLI GENERAL plc

Opponent:
-

Headword:
-

Relevant legal provisions:
EPC Art. 54, 56

Relevant legal provisions (EPC 1973):
-

Keyword:
"Novelty and inventive step - claim 1 - 3 (yes)"

Decisions cited:
-

Catchword:
-



Case Number: T 1776/06 - 3.4.02

D E C I S I O N
of the Technical Board of Appeal 3.4.02
of 24 February 2009

Appellant:

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Representative:

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Decision under appeal:

Decision of the Examining Division of the
European Patent Office posted 23 June 2006
refusing European application No. 01953208.4
pursuant to Article 97(1) EPC.

Composition of the Board:

Chairman: A. Klein
Members: M. Rayner
M. Vogel

Summary of Facts and Submissions

- I. The present appeal is against the decision of the examining division refusing European patent application number 01 953 208.4 (International Publication No. WO 02/12943. The patent application is concerned with optical fibre cable with a central strength member.
- II. In the decision under appeal, the examining division made reference to the following documents:

D4	EP-A-0 456 909
D6	US-A-5 390 273

Patentability

According to the examining division, the subject matter of independent claim 1 is not new having regard to the disclosure of document D6. The division noted that document D6 discloses the possibility of a central structural member 2 being omitted (in column 3, lines 61-64), resulting in a central strength member consisting of a hollow tube 3. This hollow tube defines a passageway extending along its length suitable for blown installation. In particular, column 3, lines 61-66 disclose that the central structural member 2 can be omitted and optionally be replaced by optical fibres. This clearly discloses the possibility of an empty member 3. Even if, for the sake of argument, it would be accepted, that if the central strength member of D6 is omitted, it would always be replaced by optical fibres, D6 would teach as an intermediate product a fibre with a hollow, empty central member 3, which

would anticipate the subject-matter of claim 1 of the main request.

Concerning the material of covering 3, document D6 discloses cushioning material only as an option. According to lines 57-58 of column 3, member 3 can be of plastic, either thermoplastic or thermosetting. These materials do provide strength to the cable and therefore the member 3 can be interpreted as a strength member. The examining division considered that "other means" referred to in document D6 includes the covering 3 and that therefore covering 3 does provide strength to the cable. This interpretation is supported by all embodiments having additional tubes wrapped around the covering 3. When the central structural member 2 is omitted, this is only possible if the covering 3 has a certain strength to withstand the radial pressure applied by the tubes wrapped around it so as to protect the fibres housed in the covering and to maintain the structural integrity of the cable. A yarn layer 19 certainly does not provide this function, since it is radially outside the tubes 4-9. Furthermore, document D6 clearly teaches that the yarn layer is optional. This can be seen from column 5, lines 26-29, which reads "if the central member 2 is not a strength member, or preferably, even if there is a strength member 2 and further strengthening is needed, the cable can include a layer 19 of a plurality of strings or yarns ...". The use of the word "can" clearly teaches that the provision of layer 19 is optional in all embodiments of D6. In the case, where strength member 2 is omitted and no yarn layer 19 is provided, the strength of the cable has to be provided by "other means" including covering 3.

Document D4 discloses microducts which are "suitable for inclusion in an optical or conventional coaxial cable into which optical fibres are to be installed after cable installation. The skilled person would use such a microduct in the covering 3 according to document D6 in order to improve the flexibility of cable installation, thereby directly arriving at the subject-matter of claim 2. When combining the teachings of documents D6 and D4, the skilled person would also directly arrive at the subject-matter of claim 3. Therefore the subject-matter of claims 2 and 3 of the main request does not involve an inventive step.

Independent Claims

Claims 1 to 3 of the main request have been drafted as three separate independent claims. Under Article 84 in combination with Rule 29(2) EPC an application may contain more than one independent claim in a particular category only if the subject matter claimed falls within one or more of the exceptional situations set out in paragraphs (a), (b) or (c) of Rule 29(2) EPC. This is not the case in the present application however, for the following reason(s):

The subject-matter of claims 1 to 3 cannot be considered as alternative solutions to a particular problem. All of the cables defined by claims 1 to 3 solve the problem of providing additional fibres in a cable by providing a hollow central strength member, in which additional fibres can be directly or indirectly (in additional tubes) inserted by blown fibre techniques. Therefore claims 1 to 3 are directed to

similar solutions of a problem, which in the present case could be drafted in a single independent claim, rather than to alternative solutions. The subject-matter of claim 2 appears to differ from the subject-matter of claim 3 only in that optical fibres are inserted in the passage of the central strength member. This also clearly shows, that claims 2 and 3 are not claiming alternative solutions. Therefore exception (c) of Rule 29(2) EPC does not apply to the present set of claims.

In conclusion, none of the criteria defined by Rule 29(2) EPC for the allowableness of multiple independent claims in the same category applies to the present set of claims.

III. The appellant requests that the decision under appeal be set aside and a patent be granted on the basis of its main or one of five auxiliary requests. The appellant argues as follows.

The decisions regarding patentability rely throughout on the interpretation of the plastic covering 3 of document D6 as a "strength member". The purpose of the central tubular strength member of the present invention is to protect optical fibres housed within the strength member from radial forces such as used during blown installation of the cable. This is what is meant by "strength" in the context of "strength member". The strength member provides strength, that is, resistance to forces. This meaning is clear to the person skilled in the art, especially when read in the context of the entire specification (Article 69 EPC). The plastic covering 3 of document D6 is not a strength

member. The resistance (strength) of the cable 1 in document D6 is provided by means other than the plastic covering 3 – either by a central structural member 2 or by other means, such as an outer layer 19 of strings or yarns. The only reference to omitting the central structural member is as an aside in the paragraph bridging columns 3 and 4; it is otherwise assumed throughout the document that there is a central structural member. The winding of the tubes is on the central structural member 2. There is no disclosure of winding tubes onto the plastic covering 3. The statement of the Examining Division that "other means" includes the covering 3 is speculation and interpretation based on the invention and not a proper reading of document D6 as understood by the skilled person at the priority date. Each claim should be read giving the words the meaning and scope which they normally have in the relevant art, and with an attempt to make technical sense out of it. Similar comments apply to the prior art. Reading the claims of the present application and document D6 with these principles in mind, it can be seen that the plastic covering of document D6 is not a strength member as in the present invention.

Concerning Rule 29(2) EPC, this indicates that multiple independent claims are allowable in principle, under certain conditions. In particular, Rule 29(2) (c) EPC indicates it is allowable to have multiple independent claims which are (i) alternative solutions to a problem and (ii) where it is not possible to cover the alternative solutions by single independent claims. Regarding (i), the Examining Division asserts that claims 1 to 3 are not alternative solutions to a

problem because they are similar. Claims 1 to 3 are indeed similar, but they are not the same. In other words, they are different, and therefore must amount to alternatives. Regarding (ii), it is not possible to arrive at the same scope of protection as for claims 1 to 3 with a single independent claim without using an "or" format, which is believed to be less clear. The Examining Division has stated that the solutions of claims 1 to 3 can be drafted in a single independent claim, yet without showing how.

IV. Independent claims 1 to 3 according to the main request are worded as follows:-

"1. An optical fibre cable having a core (100) comprising at least one tube (112) stranded about a central strength member (114) and at least one optical fibre (116) loosely housed in said at least one tube (112), and a jacket (118) surrounding said core (100), wherein said central strength member (114) is tubular, said central strength member (114) having a peripheral wall (119) enclosing a passage extending along the length of said central strength member (114) for blown installation therein of a tube member loosely housing a plurality of optical fibres.

2. An optical fibre cable having a core (100) comprising at least one tube (112) stranded about a central strength member (114) and at least one optical fibre (116) loosely housed in said at least one tube (112), and a jacket (118) surrounding said core (100), wherein said central strength member (114) is tubular, said central strength member (114) having a peripheral wall (119) enclosing a passage (120) extending along

the length of said central strength member (114) and a tube member (140) extending along said passage and loosely housing a plurality of optical fibres.

3. An optical fibre cable having a core (100) comprising at least one tube (112) stranded about a central strength member (114) and at least one optical fibre (116) loosely housed in said at least one tube (112), and a jacket (118) surrounding said core (100), wherein said central strength member (114) is tubular, said central strength member (114) having a peripheral wall (119) enclosing a passage (120) extending along the length of said central strength member (114) wherein at least one tube member (130) for blown optical fibre (116) installation is accommodated and extends along the length of said passage (120) of the central strength member (114)."

The wording of the independent claims of the auxiliary request is not given for the reasons set out in point 6 below.

Reasons for the Decision

1. The appeal is admissible.
2. Novelty
 - 2.1 As the appellant points out, the case turns on whether the plastic covering 3 disclosed in document D6 removes novelty from a central strength member within the meaning of the claims. Before starting to analyse this

question, the board observes that the long discourse advanced by the examining division to interpret the covering 3 in the direction of being a central strength member, i.e. to meet the claims of the refused patent application, tends, in itself, to raise doubts about the reasoning concerned.

2.2 The board does not agree with the reasoning of the examining division concerning the covering 3 being a strength element because the description teaches that not this covering but the central structural member 2 is intended to withstand and resist any tensile or compressive forces applied axially to the cable 1 and to protect other elements of the cable 1 with respect to such forces. If the resistance of the cable 1 with respect to axial tension is provided by means other than the central structural member 2, the central structural member 2 can be omitted while retaining the covering 3 in tubular form. The document does not say that the other means comprises the covering 3. In fact, no example of this other means is defined except a layer 19 of a plurality of strings or yarns. The teaching that the covering may be a foamed plastic speaks against the concept of a strength member. The board cannot therefore fairly read the other means as comprising the covering 3 as was assumed by the examining division especially bearing in mind that were the covering a strength member, the central structural member 2 would never really have been necessary.

2.3 Moreover, no specific dimensions or structural parameters of the covering 3 are given. Although fibres can be loosely received in the covering, this does not indicate when or how in the construction process they

are received nor does it mean that tubes can be received. Whether the materials used for the covering have more or less relative strength as such is not pertinent because they are not disclosed in the context of a central strength member. Moreover, an albeit over simplistic glance at the drawings, where a scale is not given, reveals that one would not necessarily assume the covering was intended such that a tube, at least such a large diameter tube as that shown at 7, could be blown into the space occupied by member 2 when removed. It cannot therefore be convincingly concluded that the "suitable for" criterion was so easily met by the disclosure given as assumed by the examining division.

2.4 Accordingly, on the basis of document D6, the board has to conclude the features of independent claims 1 to 3 relating to "said central strength member (114) having a peripheral wall (119)..." are novel over document D6.

3. Inventive Step

3.1 Once it becomes clear that the strength member disclosed in document D6 is either the central structural element 2, the plurality of strings of yarn or something undefined, the teaching of the document is not more relevant than the prior art acknowledged in the application. Document D4 does not have a central strength element and so is less relevant.

3.2 The problem addressed by the novel features of independent claims 1 to 3 is therefore optimising the installation performance of cables with a central strength member. The solution given offers advantages in stiffness and insertability.

3.3 The solution is not obvious either from the acknowledged prior art in Figure 1 of the application or from the disclosure of document D6, because in the former case the central member is solid and in the latter other means are taught. Tubes are taught in document D4, but this has no relevance to the central member. A review of the other prior art documents in the file shows that they also are not more relevant to the subject matter claimed.

3.4 The board therefore reached the view that the subject matter of claims 1 to 3 can be considered to involve an inventive step within the meaning of Article 56 EPC.

4. Number of independent claims

4.1 The appellant wishes to have claims involving an empty central strength member, a strength member accommodating a tube housing fibres and a central strength member accommodating tube(s). The appellant did not see itself as able to draft a single independent claim covering such subject matter, nor did the examining division make a specific suggestion as to how this could be done.

4.2 In the present case, the board agrees with the position of the appellant because it considers that a single claim is not appropriate as independent claims 1 to 3 are directed to alternative solutions solving the particular problem of optimising cable with a strength member and therefore compliance with Rule 29(2)(c) is given. Moreover, apart from the risk of decreasing clarity referred to by the appellant, the board

considers there may be a risk of introducing added subject matter in attempting to formulate a single general claim in this area.

5. No other objection exists against grant of a patent based on the main request, nor does the board see any other lack of compliance with the EPC.
6. Since the main request satisfies the requirements of the Convention, there is no need for further discussion of the auxiliary requests in the present decision.
7. In view of the foregoing, the appeal succeeds.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the first instance with the order to grant a patent on the basis of the following documents:

Description

pages 1, 3-7 as originally filed,
page 2 filed with the letter of 07.07.2005

Claims

Claims 1-8 filed with the letter of 07.07.2005

Drawings

Sheets 1/5-5/5 as published under the PCT.

The Registrar

The Chairman

M. Kiehl

A. G. Klein