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Datasheet for the decision of 13 September 2017

Case Number: T 1118/15 - 3.4.02

Application Number: 08858758.9

Publication Number: 2220527

IPC: G02B6/38

Language of the proceedings: EN

Title of invention:
HARDENED FIBER OPTIC CONNECTOR COMPATIBLE WITH HARDENED AND NON-HARDENED FIBER OPTIC ADAPTERS

Applicant:
ADC Telecommunications, Inc.

Headword:

Relevant legal provisions:
EPC Art. 56

Keyword:
Inventive step - (yes) - after amendment

Decisions cited:

Catchword:

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Case Number: T 1118/15 - 3.4.02

D E C I S I O N
of Technical Board of Appeal 3.4.02
of 13 September 2017

Appellant: (Applicant)	ADC Telecommunications, Inc. 13625 Technology Drive Eden Prairie, MN 55344-2252 (US)
Representative:	Patentanwälte Bressel und Partner mbB Potsdamer Platz 10 10785 Berlin (DE)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 19 January 2015 refusing European patent application No. 08858758.9 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman	R. Bekkering
Members:	A. Hornung
	B. Müller

Summary of Facts and Submissions

I. The applicant appealed against the decision of the examining division refusing European patent application No. 08858758.9 on the basis of Article 56 EPC.

II. The appellant requested that the appealed decision be set aside and a patent be granted on the basis of the claims according to the main request or the first auxiliary request, both requests filed with the statement setting out the grounds of appeal.

III. On 26 April 2017, the board summoned the appellant to attend oral proceedings. In a communication annexed to the summons the board provided its provisional opinion on the merits of the appeal.

IV. In response to the summons to oral proceedings, the appellant filed, with a letter of 19 July 2017, amended claims 1 to 14 according to a new main request, claims 1 to 7 according to a new first auxiliary request and amended description pages 1 to 3 for both requests. Both new requests were based on the first auxiliary request filed with the statement setting out the grounds of appeal.

V. In a telephone conversation on 5 September 2017, the board informed the appellant that it maintained its provisional opinion expressed in point 8 of the annex to the summons about the patentability of the subject-matter of claim 1 for the new main request but that the description had to be amended.

VI. In response to the board's attendance note about the phone conversation, the appellant filed, with a letter of 6 September 2017, new application documents.

Finally, as its main request, the appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of the following documents:

- Claims 1 to 14 of the main request as filed with the letter of 19 July 2017,

- Description pages 1 to 3 and 59 as filed with the letter of 6 September 2017 and pages 5 to 58 as originally filed (with page 4 deleted), and

- Drawing sheets 1/82 to 82/82 as originally filed.

Alternatively, the appellant requested the grant of a patent on the basis of the documents according to the first auxiliary request.

VII. Subsequently, the oral proceedings, which were appointed for 28 September 2017, were cancelled.

VIII. The present decision refers to the following documents:
D1: WO 2005/101078 A
D2: EP 0 848 267 A

IX. Independent claim 1 according to the main request reads as follows:

"A threadable fiber optic connector (32) being configured to be connectable with a separate non-threadable fiber optic adapter (26) and a separate threadable fiber optic adapter (34), the non-threadable fiber optic adapter and the threadable fiber optic adapter each including at least one retention latch (376, 250), the threadable fiber optic connector (32) comprising:

a ferrule (100) aligned along a central longitudinal axis (A_1);

a connector housing (39) including a plug portion (56) having an interface end sized to fit within the non-threadable fiber optic adapter (26) and the threadable fiber optic adapter (34), the ferrule (100) being positioned at the interface end of the plug portion (56), the plug portion (56) having a first catch structure (55) for engaging the retention latch of the non-threadable fiber optic adapter (26) to retain the plug portion (56) within the non-threadable fiber optic adapter (26) and a second catch structure (132, 134) for engaging the retention latch of the threadable fiber optic adapter (34) to retain the plug portion (56) within the threadable fiber optic adapter (34); and

a threadable retention member (40) mounted on the connector housing (39), the threadable retention member (40) engaging the threadable fiber optic adapter (34) to retain the plug portion (56) within the threadable fiber optic adapter (34),

wherein the threadable fiber optic adapter (34) includes threads (76), and wherein the threadable retention member (40) includes a threaded member (75) rotatably mounted about the connector housing (39) that engages the threads (76) of the threadable fiber optic adapter (34) to retain the plug portion (56) within the threadable fiber optic adapter (34)."

Reasons for the Decision

1. Amendments

The board is satisfied that the present amended set of claims 1-14 fulfills the requirements of Article 123(2) EPC.

In particular, present claim 1 is based on claims 1 and 2 as originally filed, figure 23 and page 25, lines 20 to 25 of the description.

The basis for the terms "threadable" and "non-threadable" in the expressions "threadable fiber optic connector", "threadable fiber optic adapter" and "non-threadable fiber optic adapter" of claim 1 can be found throughout the description and in the figures as originally filed. See, for instance, figure 3, figure 23 and page 25, lines 20 to 25 of the description, disclosing a threaded member (75) of the fiber optic connector (32) rendering threadable the fiber optic connector (32) and threads (76) of the fiber optic adapter (34) rendering threadable the fiber optic adapter (34). Furthermore, see, for instance, figure 6 and figure 35 disclosing a non-threadable fiber optic adapter (26).

The term "separate" in the expressions "separate threadable fiber optic adapter" and "separate non-threadable fiber optic adapter" of claim 1 is considered by the board as being a clarification that the two adapters are effectively not forming part of the claimed connector, as it is apparent from the original application as a whole.

2. Clarity and interpretation of the claim wording

In the board's communication annexed to the summons to oral proceedings, various issues about clarity were raised.

The board considers that the clarity issues have been overcome by amendment of claim 1:

- Adding the term "separate" in claim 1 clarifies that the two adapters are not forming part of the connector of claim 1 (point 6.1.1 of the board's communication).
- It has been clarified in claim 1 that the threadable fiber optic connector (32), comprising the threadable retention member, includes a threaded member (75). Moreover, it has been clarified that the threadable fiber optic adapter (34) includes threads (76).

The remaining issues in points 6.1.2 to 6.1.5 of the board's communication dealt with the interpretation of the claim wording and are not relevant under Article 84 EPC. In particular, the expressions "non-threadable", "catch structure" and "retention latch" of claim 1 are to be interpreted in their broadest meaning.

It follows that claim 1 is clear within the meaning of Article 84 EPC.

3. Novelty and inventive step

3.1 D1 discloses, with reference to figures 1 to 3, a threadable fiber optic connector (6, 8, 10) *[the connector (6, 8, 10) of D1 includes an inner fiber connector assembly (6) and an outer housing assembly (4) comprised of an outer housing portion (8) and a rotatable collar portion (10); the connector (6, 8, 10) of D1 is threadable in view of the threaded opening (16) (see figure 7) of the outer housing (8)]*, the connector comprising:

a ferrule (82) aligned along a central longitudinal axis *[see figure 5]*,

a connector housing (80) including a plug portion having an interface end sized to fit within an adapter,

the ferrule (82) being positioned at the interface end of the plug portion *[see figure 5]*,

the plug portion having

a first catch structure (106) for engaging the retention latch (24) of the outer housing portion (8, 10) to retain the plug portion within the outer housing portion (8, 10) *[see figure 3; the outer housing portion (8, 10) forms part of the connector of D1 and cannot be considered as a separate adapter as defined in claim 1]*

and a second catch structure (114) *[see figure 5]* for engaging the retention latch of a mating connector (200, 202) to retain the plug portion within the mating connector (200) *[the mating connector (200, 202) of D1 is an exemplary adapter; see figure 7 showing a mating connector (200) having a profiled opening (202) including a complementary alignment structure to receive and latch in engagement with the locking edge (126) of the second catch structure (114); see figure 5 and paragraph [0042] of D1]*,

a threadable retention member (8, 10) mounted on the connector housing (80) *[the outer housing (8) and the rotatable collar portion (10) of D1 play the role of the threadable retention member referred to in claim 1]*, the threadable retention member (8, 10) engaging the mating connector (200) to retain the plug portion within the mating connector (200) *[see figures 7 and 11]*,

wherein the threadable retention member (8, 10) includes a threaded member (16) mounted on the connector housing (80) via a catch-latch structure (106; 24) and a collar portion (10) rotatably mounted on the connector housing (80) (see figures 3, 4 and 7; paragraph [0041]).

The connector of D1, formed by the inner (6) and the outer housing assemblies (4; 8, 10), is connectable to a single adapter via the second catch structure (114), whereas claim 1 defines a connector which is connectable with two different types of adapters.

3.2 It follows that the subject-matter of claim 1 is novel with respect to the disclosure of D1 (Article 54(1) EPC) and differs from the connector of D1 in that

- the claimed threadable fiber optic connector is configured to be connectable to *two separate* adapters,

- it comprises a first catch structure which engages the retention latch of a *separate* adapter and in that

- it comprises a threadable retention member which includes a *threaded* member *rotatably* mounted on the connector housing that engages threads of the threadable fiber optic adapter.

3.3 The technical effect of the differing feature is, depending on the environmental constraints, to allow the connector to be connected to two different adapters, one at a time. The board agrees with the appellant that the objective technical problem may be formulated as "to provide a more flexible fiber optic connector usable in a connector-adapter-connector arrangement".

D1 is not concerned with the problem of improving the flexibility of connecting optical fibers. D1 does not provide any hint towards a dual functional connector connectable to two separate adapters either. Moreover, if feasible at all, substantial modifications of the connector of D1 would be necessary to provide a dual functional

connector. The skilled person has neither the motivation to, nor the guidance on how to, provide a connector as claimed. Therefore, the board agrees with the appellant that the claimed connector is not obvious in the light of the disclosure of D1.

3.4 Claim 1 underlying the appealed decision did not comprise the features of present claim 1 relating to the separate adapters and the threaded member rotatably mounted about the connector housing. Hence, the examining division's finding that the claimed connector lacks an inventive step is not applicable to the subject-matter of present claim 1.

3.5 The other prior art document mentioned during first-instance proceedings, D2, is not more relevant than D1. In particular, even though the connector of D2 comprises two connecting means (flange 40; lock arms 41; figure 23) for connecting the connector with an adapter, the connector of D2 is neither connectable with two separate adapters, nor comprises a threaded member rotatably mounted on the connector housing. In order to arrive at the claimed connector, if feasible at all, substantial modifications of the connector of D2 would be necessary which the skilled person could not devise without inventive achievement.

3.6 As a result, the subject-matter of claim 1 comprises an inventive step over the disclosure of D1 and D2 (Article 56 EPC).

3.7 The same applies to the subject-matter of claims 2 to 14 which are dependent on claim 1.

4. Accordingly, the appellant's main request is allowable.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

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

   - Claims 1 to 14 of the main request as filed with the letter of 19 July 2017,

   - Description pages 1 to 3 and 59 as filed with the letter of 6 September 2017 and pages 5 to 58 as originally filed, and

   - Drawing sheets 1/82 to 82/82 as originally filed.

The Registrar: The Chairman:

M. Kiehl R. Bekkering

Decision electronically authenticated