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**Datasheet for the decision  
of 22 September 2009**

**Case Number:** T 1734/07 - 3.4.02

**Application Number:** 01120584.6

**Publication Number:** 1189085

**IPC:** G02B 6/38

**Language of the proceedings:** EN

**Title of invention:**

Fiber optic receptacle with protective shutter

**Applicant:**

MOLEX INCORPORATED

**Headword:**

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**Relevant legal provisions:**

-

**Relevant legal provisions (EPC 1973):**

EPC Art. 56

**Keyword:**

"Inventive step (yes)"

**Decisions cited:**

-

**Catchword:**

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Case Number: T 1734/07 - 3.4.02

**D E C I S I O N**  
of the Technical Board of Appeal 3.4.02  
of 22 September 2009

**Appellant:** MOLEX INCORPORATED  
2222 Wellington Court  
Lisle, Illinois 60532 (US)

**Representative:** Blumbach - Zinngrebe  
Patentanwälte  
Alexandrastraße 5  
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**Decision under appeal:** Decision of the Examining Division of the  
European Patent Office posted 27 April 2007  
refusing European patent application  
No. 01120584.6 pursuant to  
Article 97(1) EPC 1973.

**Composition of the Board:**

**Chairman:** A. G. Klein  
**Members:** F. J. Narganes-Quijano  
M. J. Vogel

## Summary of Facts and Submissions

- I. The appellant (applicant) lodged an appeal against the decision of the examining division refusing European patent application No. 01120584.6 (publication No. 1189085).

In its decision the examining division held that the subject-matter of claim 1 then on file did not involve an inventive step (Article 56 EPC 1973) in view of the disclosure of document

D5 : EP-A-0697607

and the common general knowledge of the person skilled in the art. The examining division also referred in this respect to documents:

D1 : US-A-5956444

D3 : US-A-4779950.

- II. With the statement setting out the grounds of appeal dated 27.08.2007 the appellant submitted two new sets of claims 1 to 4 amended according to a main and an auxiliary request and requested setting aside of the decision under appeal and the grant of a patent on the basis of one of the amended sets of claims and, among others, pages 6 and 6a of the description filed with the letter dated 02.05.2005.

- III. In reply to a communication of the Board, the appellant made the auxiliary request its main request and confirmed that the request for grant encompassed amended pages 2 and 2a of the description filed with

the letter dated 21.02.2007 and the amended drawing sheets 1/2 and 2/2 filed with the letter dated 12.09.2001.

Claim 1 amended according to the present main request of the appellant reads as follows:

"A receptacle for receiving a fiber optic connector along an optic axis (22), comprising:

a housing (12) having a housing part (12b) with side walls, a bottom wall and a top wall (46) which define a generally rectangular open end (24) for receiving the fiber optic connector inserted thereinto on said optic axis (22), said top wall (46) having a generally flat outside extending along an outside length rearwardly from said open end (24); and

a generally rectangular, generally planar shutter member (14) pivotally mounted on the housing (12) with an axis of pivotion (42) adjacent to one edge at said open end (24), said shutter member (14) having a member length extending perpendicular to said axis of pivotion and being pivotally movable to close and open said open end (24), the shutter member (14) being biased toward its closed position in which it extends across the optic axis (22),

characterized in that

said outside length of said top wall (46) is greater than said member length of said shutter member (14), and in that

the axis of pivotion (42) is located at the top edge of said open end (24) such that the shutter member (14) is pivotable approximately 270° away from said closed position to an open position wherein the shutter

member (14) is juxtaposed against the rearwardly extending outside top wall (46) of the housing (12)."

Claims 2 to 4 are all dependent claims referring back to claim 1.

IV. The arguments of the appellant in support of its requests are essentially the following:

With a receptacle as that disclosed in document D5 having a shutter hinged at the top end of the receptacle opening and biased to its closed position, there are difficulties in keeping the shutter open while one hand of the operator holds the receptacle and the other hand inserts the connector into the receptacle. None of the prior art documents teaches to overcome these difficulties by arranging the shutter so as to be pivotable about 270° as claimed, thus enabling the operator to grasp the receptacle and to pinch the shutter against the rearwardly extending outside wall of the receptacle using the thumb and the forefinger of one hand, whereas the other hand is free to grip the connector and to insert it into the receptacle.

### **Reasons for the Decision**

1. The appeal is admissible.
2. *Amendments - Main request*

The Board is satisfied that the application documents amended according to the present main request satisfy the formal requirements of the EPC, and in particular

those set forth in Article 123(2) EPC 1973. More particularly, claim 1 is based on claim 1 together with dependent claims 3 to 7, the passage on page 6, lines 7 to 21 and the figures of the application as originally filed, dependent claims 2 and 3 are based on dependent claims 2 and 8 as originally filed, and dependent claim 4 is based on dependent claim 9 together with page 5, lines 2 to 13 of the application as originally filed. The description has been brought into conformity with the invention defined in the amended claims and the pertinent prior art has been appropriately acknowledged (Article 84, second sentence and Rule 27(1), paragraphs (b) and (c) EPC 1973).

3. *Inventive step - Main request*

- 3.1 The Board concurs with the examining division that document D5 represents the closest state of the art. This document discloses a receptacle comprising a housing delimited by side walls forming an opening at the front side for receiving a fibre optic connector, the receptacle further comprising a protective planar shutter member pivotally mounted at the top edge of the opening of the housing and pivotally movable to close and open the opening of the housing (D5, Figures 1 and 2 and abstract). Document D5 further specifies that the shutter member is biased toward its closed position (column 3, line 56 to column 4, line 11) as required by the claimed subject-matter.

In agreement with the findings of the examining division, no indication can be found in document D5 that the shutter member is arranged so as to be pivotable approximately 270° away from the closed

position to an open position in which the shutter member is juxtaposed against the top side wall of the housing as required by the claimed subject-matter.

3.2 According to the description of the application (page 2, lines 20 to 25 and page 6, lines 21 to 27) and the submissions of the appellant (point IV above), while a receptacle as that disclosed in document D5 is difficult to manipulate by an operator in that two hands are normally required to open and to keep open the biased shutter, leaving little degree of freedom to the operator to simultaneously grasp the receptacle to manually insert the connector into the receptacle, the feature identified in the last paragraph of point 3.1 above and distinguishing the subject-matter of claim 1 from the disclosure of document D5 is such that the shutter member can be pivoted to an extent such that it can be pinched and held open against the adapter housing by only one hand of the operator, thus rendering easier the manual manipulation of the connector and the receptacle when inserting the former into the latter. In the decision under appeal the examining division disputed that these advantageous functional effects could be taken into account on the grounds that they were also achieved in document D5. However, although the device of document D5 would possibly allow, depending on the manual dexterity of the operator, grasping with only one hand the receptacle while maintaining the shutter member in its open position with the same hand, the functional features mentioned above would not be achieved to the same degree that are achieved with the claimed invention.

The objective problem solved by the claimed invention can therefore be seen in improving the receptacle so as to render easier the manual manipulation of the receptacle when inserting a connector through its opening.

- 3.3 In its decision the examining division referred to the common general knowledge and held that the skilled person not only could, but also would have modified the device of document D5 so as to arrive at the claimed subject-matter. In support of this view the examining division first noted that the skilled person is aware of a number of different types of pivotally mounted shutter members with various angular ranges of motion, and referred in this respect to the disclosure of documents D1 and D3. Document D1 discloses an adapter having an opening for receiving a connector and a shutter member for closing the opening and biased towards its closed position by means of a spring (Figures 1 and 2 together with the paragraph bridging columns 2 and 3), and document D3 discloses a receptacle for optical connectors comprising an opening, a cover movable between a position covering the opening and a position opening the receptacle to allow insertion of a plug, and means for locking the cover (abstract, Figures 1 and 4 to 6 and column 3, line 47 to column 4, line 22). However, none of these documents addresses the problem formulated in point 3.2 above or discloses or suggests to arrange the shutter or cover member so as to be pivotable to the claimed extent, i.e. to be pivotable within an angle of rotation of about  $270^\circ$ . Document D1 would at the most suggest making in document D5 the manual operation of moving the shutter member against the spring force easier by means of a



tab extending from the shutter member (D1, column 3, lines 11 to 15), and even assuming that this approach would, at least to some extent, solve the problem formulated above, it does not point towards the solution proposed by the claimed invention.

The examining division also noted that the skilled person, having a strong incentive to choose a range that suits his particular needs, is aware of the advantages and disadvantages of choosing approximately 270°. However, no documentary evidence on file supports the examining division's contention in this respect. In particular, none of the documents cited by the examining division teaches or suggests increasing the angle of rotation of a pivotable shutter member mounted on a housing to the extent required by the claimed subject-matter, let alone the advantages associated with this technical measure.

Finally, the examining division noted that document D5 does not teach against an angle of rotation of about 270°. The absence of a teaching towards a technical measure, however, does not support, in the absence of any other indication in the prior art, that the skilled person would have considered such a technical measure.

- 3.4 In the absence of any prior art document disclosing or suggesting the claimed solution and in the absence of documentary evidence in support of common general knowledge pointing at the claimed solution, the present Board cannot follow the examining division's view that the claimed subject-matter does not involve an inventive step with regard to the prior art on file.

- 3.5 In view of the above considerations, the Board concludes that the subject-matter of claim 1 of the present main request involves an inventive step within the meaning of Article 56 EPC 1973 with regard to the prior art presently on file. The same conclusion applies to dependent claims 2 to 4 by virtue of their dependence on claim 1.
4. The Board is also satisfied that the application documents amended according to the main request and the invention to which they relate meet the remaining requirements of the EPC within the meaning of Article 97(2) EPC. The Board therefore concludes that the decision under appeal is to be set aside and a patent be granted on the basis of the application documents amended according to the present main request of the appellant (Article 97(2) EPC together with Article 111(1) EPC 1973).

## 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 No. 1 to 4 of the main request corresponding to the set of claims No. 1 to 4 labelled "auxiliary request" filed with the letter dated 27.08.2007,
  - description pages 1, 3 to 5 and 7 as originally filed, pages 2 and 2a filed with the letter dated 21.02.2007, and pages 6 and 6a filed with the letter dated 02.05.2005, and
  - drawing sheets 1/2 and 2/2 filed with the letter dated 12.09.2001.

The Registrar:

The Chairman:

M. Kiehl

A. G. Klein