

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY
(PCT Rule 43bis.1)**

To:

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Date of mailing
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Applicant's or agent's file reference
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FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/US2018/040126

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28.06.2017

International Patent Classification (IPC) or both national classification and IPC
INV. G02B6/38 G02B6/44

Applicant
CORNING RESEARCH & DEVELOPMENT CORPORATION

1. This opinion contains indications relating to the following items:

- Box No. I Basis of the opinion
- Box No. II Priority
- Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- Box No. IV Lack of unity of invention
- Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement
- Box No. VI Certain documents cited
- Box No. VII Certain defects in the international application
- Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA:



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see form
PCT/ISA/210

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Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of:
 - the international application in the language in which it was filed.
 - a translation of the international application into , which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1 (b)).
2. This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43bis.1(a))
3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing:
 - a. forming part of the international application as filed:
 - in the form of an Annex C/ST.25 text file.
 - on paper or in the form of an image file.
 - b. furnished together with the international application under PCT Rule 13ter.1(a) for the purposes of international search only in the form of an Annex C/ST.25 text file.
 - c. furnished subsequent to the international filing date for the purposes of international search only:
 - in the form of an Annex C/ST.25 text file (Rule 13ter.1(a)).
 - on paper or in the form of an image file (Rule 13ter.1(b) and Administrative Instructions, Section 713).
4. In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that forming part of the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
5. Additional comments:

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	<u>1-46</u>
	No: Claims	
Inventive step (IS)	Yes: Claims	
	No: Claims	<u>1-46</u>
Industrial applicability (IA)	Yes: Claims	<u>1-46</u>
	No: Claims	

2. Citations and explanations

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

1 Reference is made to the following documents:

- D1 WO 2015/144883 A1 (TYCO ELECTRONICS RAYCHEM BVBA [BE]) 1 October 2015
- D2 WO 2016/156610 A1 (COMMSCOPE CONNECTIVITY BELGIUM BVBA [BE]) 6 October 2016
- D3 US 2015/253528 A1 (CORBILLE CHRISTOPHE [FR] ET AL) 10 September 2015
- D4 US 2014/016902 A1 (PEPE PAUL JOHN [US] ET AL) 16 January 2014
- D5 US 2003/063866 A1 (MELTON STUART R [US] ET AL) 3 April 2003

Re Item V :

The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of the independent claims 1, 3, 6, 9, 15, 19, 22, 40 and 41 does not involve an inventive step in the sense of Article 33(3) PCT:

2 Independent claims 1, 3, 40, 41 - Inventive step objection

- 2.1 The subject-matter of claims 1, 3, 40, 41 does not involve an inventive step in the sense of Article 33(3) PCT, and the criteria of Article 33(1) PCT are therefore not met.
- 2.2 Document D1 is considered the closest prior art, it discloses (the references in parentheses referring to this document, see p.18, first paragraph; fig. 19) the following features of **claim 3**:

A port module insert (836) for making an optical connection, comprising:

- a housing (850) comprising an inner housing (852) and an outer housing (851),
- the ~~inner~~ *outer* housing comprising
 - at least one connection port having an optical connector opening (853) extending from an outer surface of the ~~inner~~ *outer* housing into a cavity and defining a connection port passageway, and
 - at least one securing feature passageway (870); and
- at least one securing feature (868) associated with the connection port passageway, wherein a portion (869) of the at least one securing feature is disposed (p. 19, l. 16-18) within a portion of the at least one securing feature passageway; and
- at least one securing feature resilient member (880) for biasing (p. 20, l. 3ff) a portion of the at least one securing feature.

- 2.3 The apparatus defined in independent claim 3 differs from that disclosed in D1 merely in that the connection port and securing feature passageway are formed in the outer housing, while D1 discloses them to be formed in the inner housing.
- 2.4 Both of these alternatives have the same technical effect of providing a connection port with a securing feature passageway on the housing.
- 2.5 Putting these features on the inner housing is therefore an obvious constructional alternative the skilled person would contemplate as a matter of routine design considerations without the need for any inventive activity.
- 2.6 As a consequence, **claim 3** of the present application cannot be considered to involve an inventive step according to Articles 33(2) and 33(3) PCT.
- 2.7 The same reasoning applies to independent device **claim 1**, which is a generalisation of claim 3, and which is also not considered to involve an inventive step.
- 2.8 The same reasoning applies, mutatis mutandis, to independent method **claims 40 and 41** which correspond in subject matter to claims 1 and 3, respectively.

3 **Independent claims 6, 9 - Inventive step objection**

- 3.1 The subject-matter of claims 6 and 9 does not involve an inventive step in the sense of Article 33(3) PCT, and the criteria of Article 33(1) PCT are therefore not met.
- 3.2 Document D1 is considered the closest prior art, it discloses (the references in parentheses referring to this document, see p.18, first paragraph; fig. 19) the following features of **claim 9**:

A port module insert (836) for making an optical connection, comprising:

- a housing (850) comprising an inner housing (852) and an outer housing (851),
- the ~~inner~~ *outer* housing comprising
 - at least one connection port having an optical connector opening (853) extending from an outer surface of the ~~inner~~ *outer* housing into a cavity and defining a connection port passageway, and
 - at least one securing feature passageway (870); and
- at least one securing feature (868) associated with the connection port passageway, wherein the at least one securing feature is disposed (p. 19, l. 16-18) within a portion of the at least one securing feature passageway, and
- the at least one securing feature comprises a bore (872), and
- a portion of the at least one securing feature is capable of translating (e.g. p. 20, l. 12f) within a portion of the at least one securing feature passageway.

- 3.3 The apparatus defined in independent claim 9 differs from that disclosed in D1 merely in that the connection port and securing feature passageway are formed in the outer housing, while D1 discloses them to be formed in the inner housing.
- 3.4 Both of these alternatives have the same technical effect of providing a connection port with a securing feature passageway on the housing.

- 3.5 Putting these features on the inner housing is therefore an obvious constructional alternative the skilled person would contemplate as a matter of routine design considerations without the need for any inventive activity.
- 3.6 As a consequence, **claim 9** of the present application cannot be considered to involve an inventive step according to Articles 33(2) and 33(3) PCT.
- 3.7 The same reasoning applies to independent device **claim 6**, which is a generalisation of claim 9, and which is also not considered to involve an inventive step.

4 Independent claims 15, 19 - Inventive step objection

- 4.1 The subject-matter of claims 15 and 19 does not involve an inventive step in the sense of Article 33(3) PCT, and the criteria of Article 33(1) PCT are therefore not met.
- 4.2 Document D1 is considered the closest prior art, it discloses (the references in parentheses referring to this document, see p.18, first paragraph; fig. 19) the following features of **claim 19**:

A port module insert (836) for making an optical connection, comprising:

- a housing (850) comprising an inner housing (852) and an outer housing (851),
- the ~~inner~~ *outer* housing comprising
 - at least one connection port having an optical connector opening (853) extending from an outer surface of the ~~inner~~ *outer* housing into a cavity and defining a connection port passageway, and
 - at least one securing feature passageway (870); and
- at least one securing feature (868) associated with the connection port passageway,
- wherein the at least one securing feature comprises a bore (872) and a locking feature (876), and
- wherein a portion the at least one securing feature translates from a retain position to an open position as a suitable fiber optic connector (820) is inserted into the at least one connection port (p. 21, l. 10-13:

"as the connector 820 is inserted the slide clip moves from the coupling position, fig. 22 to the non-coupling position, fig. 23").

- 4.3 The apparatus defined in independent claim 19 differs from that disclosed in D1 merely in that the connection port and securing feature passageway are formed in the outer housing, while D1 discloses them to be formed in the inner housing.
- 4.4 Both of these alternatives have the same technical effect of providing a connection port with a securing feature passageway on the housing.
- 4.5 Putting these features on the inner housing is therefore an obvious constructional alternative the skilled person would contemplate as a matter of routine design considerations without the need for any inventive activity.
- 4.6 As a consequence, **claim 19** of the present application cannot be considered to involve an inventive step according to Articles 33(2) and 33(3) PCT.
- 4.7 The same reasoning applies to independent device **claim 15**, which is a generalisation of claim 19, and which is also not considered to involve an inventive step.

5 **Independent claim 22 - Inventive step objection**

- 5.1 The subject-matter of claim 22 does not involve an inventive step in the sense of Article 33(3) PCT, and the criteria of Article 33(1) PCT are therefore not met.
- 5.2 Document D1 is considered the closest prior art, it discloses (the references in parentheses referring to this document, see p.18, first paragraph; fig. 19) the following features of **claim 22**:

A port module insert (836) for making an optical connection, comprising:

- a housing (850) comprising an inner housing (852) and an outer housing (851),
- the ~~inner~~ *outer* housing comprising
 - at least one connection port having an optical connector opening (853) extending from an outer surface of the ~~inner~~ *outer* housing

into a cavity (the space between reference signs 853 and 859 in fig. 19) and defining a connection port passageway, and

- at least one securing feature passageway (870); and
- at least one securing feature (868) associated with the connection port passageway,
- the at least one securing feature comprises a securing member (the lower part of 868, i.e. excluding 874) and an actuator (release tab 874), and
- the at least one securing member is capable of translating ~~within a portion of the cavity,~~
- wherein a portion the at least one securing feature translates from a retain position to an open position as a suitable fiber optic connector (820) is inserted into the at least one connection port (p. 21, l. 10-13: "as the connector 820 is inserted the slide clip moves from the coupling position, fig. 22 to the non-coupling position, fig. 23").

5.3 The apparatus defined in independent claim 22 thus differs from that disclosed in D1 in that:

- (a) the connection port and securing feature passageway are formed in the outer housing, while D1 discloses them to be formed in the inner housing; and
- (b) the at least one securing member is capable of translating *within a portion of* the cavity of the connection port, while the securing member of D1 translates *adjacent to* the cavity.

5.4 There is no functional interaction between the features of (a) and (b) which produces a technical effect that is greater than the respective technical effects of (a) and (b) individually. The combination of (a) and (b) is therefore a mere aggregation of features (see PCT Guidelines 13.05), so that difference (a) and (b) may be examined independently for inventive step.

5.5 Regarding feature (a), putting the connection port with a securing feature passageway on the inner housing, instead of the outer housing is an obvious constructional alternative in order to provide these features on the housing. The skilled person would contemplate this alternative as a matter of routine design considerations without the need for any inventive activity.

- 5.6 Regarding feature (b), placing the securing member so that it translates within, instead of adjacent to, the cavity is an obvious constructional alternative in order to provide a translating feature that may secure the fiber optic connector in the connection port. This solution is obvious, for example, in light of D2 (figs. 1-5) disclosing a housing (121) having connection ports (122) each having a cavity (at reference sign 122 in fig. 1) with securing members (140) translating within a portion of the cavity (compare figs. 1 and 2) in order to secure a connector (110) within the cavity.
- 5.7 As a consequence, **claim 22** of the present application cannot be considered to involve an inventive step according to Articles 33(2) and 33(3) PCT.

6 Further claims

- 6.1 Regarding the further claims, the following is noted
- claim 2: The subject-matter of this claim corresponds to that of claim 3, so that the same reasoning as for claim 3 applies.
 - claims 4 and 5: The same reasoning as for claim 15 applies.
 - claim 7: The same reasoning as for claim 9 applies.
 - claim 8: Implementing a plurality of ports and securing features is obvious in light of D2 (fig. 5).
 - claim 10: The same reasoning as for claim 15 applies.
 - claim 11: These features are obvious in light of D1 (p. 21, second but last paragraph).
 - claim 12: These features are obvious in light of D1 (p. 21, l. 7-16).
 - claims 13, 17: The same reasoning as for claim 19 applies.
 - claim 14: The same reasoning as for claim 22 applies.
 - claim 16: These features are obvious in light of D1 (p. 19, l. 18f).
 - claims 18, 23: see claim 3.
 - claims 20 and 21: These features are obvious in light of D1 (p. 19, l. 23-27).
 - claim 24: These features are obvious in light of D1 (tabs 859 in fig. 19).

- claim 25: These features are obvious in light of D1 (fig. 19: see the structure at the front of inner housing 852, acting as key).
- claims 26, 30-32, 34-39: The features of these claims are obvious alternatives for a person skilled in the art of telecommunications enclosures, for example in light of D3 (p. 5-10; figs. 1-3) or D4 (paragraphs 40-108; figs. 1-6).
- claims 27 and 28: The features of these claims are alternatives known in the art, for example from D5 (figs. 3 and 4; paragraph 9).
- claim 29: see claim 10.
- claim 33: This feature is obvious in light of D2 (passages 323 in fig. 23; paragraphs 69, 74) extend in the same direction as the connector port passageway (322).
- claim 42-45: The same reasoning as for claims 10-13 applies, mutatis mutandis.
- claim 46: The same reasoning as for claim 20 applies, mutatis mutandis.

The subject matter of these claims therefore cannot be considered to involve an inventive step according to Article 33(1) and 33(3) PCT.

Re Item VII :

7 Formal deficiencies

Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in D1 and D2 is not mentioned in the description, nor are these documents identified therein.

Re Item VIII :

8 Clarity

Although claims 1, 3, 6, 9, 15, 19, 22, 40 and 41 have been drafted as separate independent claims, they appear to relate effectively to the same

subject-matter and to differ from each other only with regard to the definition of the subject-matter for which protection is sought and/or in respect of the terminology used for the features of that subject-matter. The aforementioned claims therefore lack conciseness and as such do not meet the requirements of Article 6 PCT.