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DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN,
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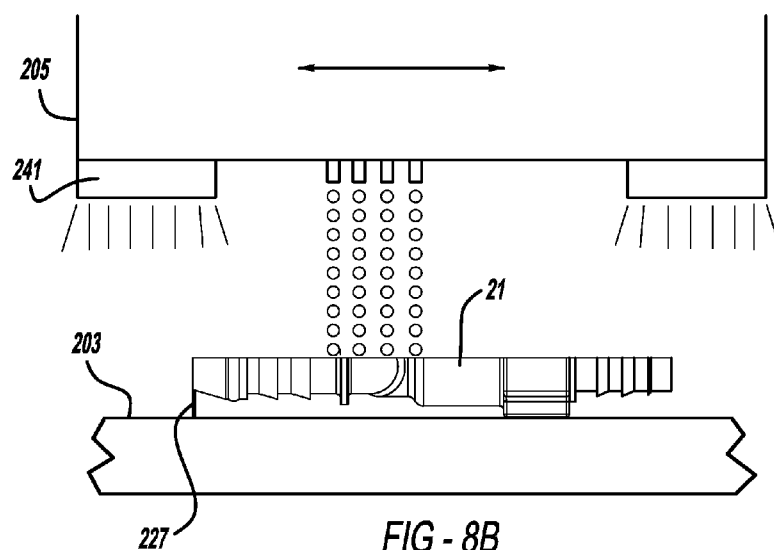
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Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a
patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the
earlier application (Rule 4.17(iii))
- of inventorship (Rule 4.17(iv))

[Continued on next page]

- (54) Title: CONNECTORS MANUFACTURED BY THREE-DIMENSIONAL PRINTING



- (57) Abstract: A hollow conduit is provided. In another aspect, a quick connector, suitable to carry fluid therethrough, is made of layers of material, a light curable material and/or multiple built-up materials. Another aspect uses a three-dimensional printing machine to emit material from an ink jet printing head to build up a conduit.

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7 March 2013

- *with international search report (Art. 21(3))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2012/039432

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
3. ☒ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
1-9, 11-29, 31-46, 57-60, 62-66
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☒ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2012/039432

A. CLASSIFICATION OF SUBJECT MATTER
INV. F16L37/00 B29C67/00
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

F15C F16L B29C B29L B60R B29D F28F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 10 2006 062373 A1 (UNIV DRESDEN TECH [DE]) 26 June 2008 (2008-06-26)	1,2,4,57
Y	figures 1b , 3, 4 page 2, paragraph [0009] page 3, paragraph [0020]	11,58, 59,62,63
X	EP 2 156 942 A1 (ECOLE NATIONALE D INGENIEURS D [FR]; INST PHYSIQUE B I STEPANOV DE [BY]) 24 February 2010 (2010-02-24)	12, 16-18,21
Y	figures 1, 14a column 1, lines 46-50, 57-58	11, 13-15, 19,20, 22,32-41
	----- -/-	



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

7 January 2013

Date of mailing of the international search report

14/01/2013

Name and mailing address of the ISA/

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INTERNATIONAL SEARCH REPORT

International application No
PCT/US2012/039432

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2010/108883 A2 (BASF SE [DE]; SEELER FABIAN [DE]; DEGEN GEORG [DE]; REESINK BENNIE [DE]) 30 September 2010 (2010-09-30)	1,5-9, 23, 26-29, 60,64,66
Y	page 13, line 30 page 14, lines 8-11, 19-21 page 6, lines 29-34	3,24,25, 31,65
Y	----- EP 2 224 158 A1 (NIFCO INC [JP]) 1 September 2010 (2010-09-01)	11, 13-15, 19,20, 22, 31-46, 58,59, 62,63
	figures 15, 38	
Y	----- EP 0 490 546 A1 (WEISS LEE E [US]; PRINZ FRITZ B [US]; GURSOZ E LEVENT [US] PRINZ FRITZ) 17 June 1992 (1992-06-17) figure 10	42-46
Y	----- US 2008/111372 A1 (TREDE MICHAEL [FR] ET AL) 15 May 2008 (2008-05-15) cited in the application figure 2	3,24,25, 65
X	----- Bre Pettis: "Using Makerbot for Dishwasher Repair", Digital Design	1,57
	5 August 2010 (2010-08-05), XP002682531, Retrieved from the Internet: URL: http://www.makerbot.com/blog/2010/08/05/using-makerbot-for-dishwasher-repair/ [retrieved on 2012-08-28]	
Y	the whole document	58,59, 62,63

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2012/039432

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FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-9, 23-29, 57, 60, 64-66

A layerwise produced conduit adapted for carrying fluid comprising a flexible coupling and rigid insert.

2. claims: 10, 30, 61

A layerwise produced conduit adapted for carrying fluid comprising a fluid flow-blocking member.

3. claims: 11-22, 31, 62

A layerwise produced conduit adapted for carrying fluid comprising first and second materials.

4. claims: 32-41, 58, 59, 63

A layerwise produced quick connector.

5. claims: 42-46

A layerwise produced functional fluid valve.

6. claims: 47-56

A layerwise produced conduit adapted for carrying fluid comprising a flexible seal.
