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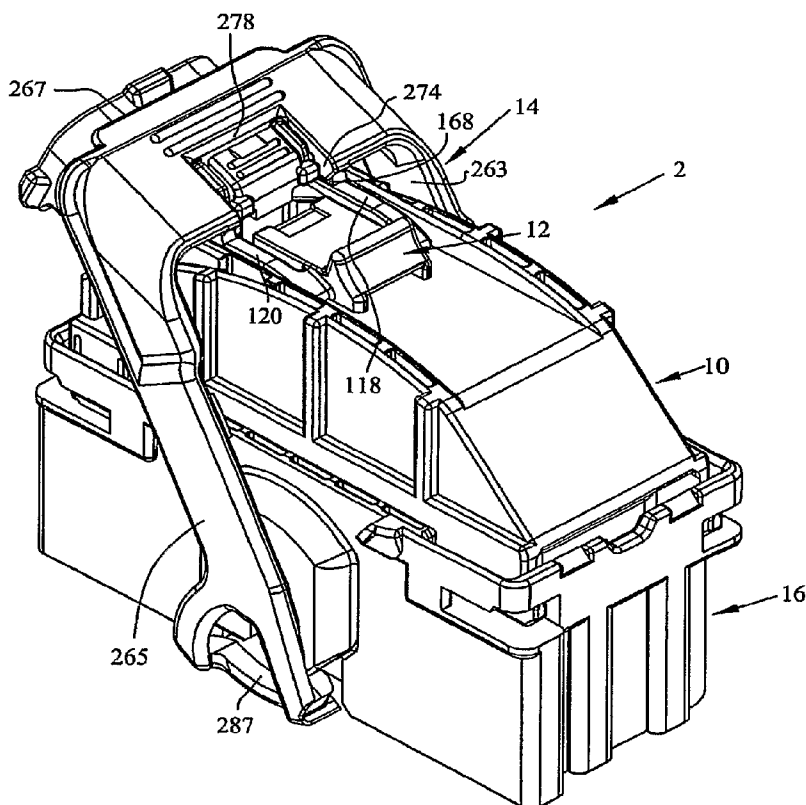
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[Continued on next page]

(54) Title: LEVER MATED CONNECTOR ASSEMBLY



(57) Abstract: A lever mated connector assembly including a housing (16) configured to mate with a header, a wire guide (10) mounted to the housing having a latch (86) with a retaining surface (96), and a lever (14) having a catch (278) with a retaining surface and being coupled to the housing for rotational movement between an unlocked position and a locked position wherein the catch retaining surface engages the latch retaining surface to inhibit movement of the lever out of the locked position. A connector position assurance (CPA) member (12) has an interengaging locking assembly (67, 73; 131, 133) connecting to the CPA member to the wire guide in a low profile configuration for movement between a first position and a second position. The CPA is attached to the wire guide by way of a dovetail interlocking arrangement comprised of dovetail slot (67a, 73a) and dovetail flange (131a, 133a). The wire guide and latch are provided with an overstress mechanism (83a, 85a; 97) to prevent over extension of the latch to a position where the latch would be plastically deformed.



RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA,  
GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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amendments*

**Published:**

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# INTERNATIONAL SEARCH REPORT

International application No  
PCT/US2007/004645

**A. CLASSIFICATION OF SUBJECT MATTER**  
INV. H01R13/629

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)  
H01R

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 practical, search terms used)

EPO-Internal

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

| Category* | Citation of document, with indication, where appropriate, of the relevant passages                                             | Relevant to claim No. |
|-----------|--------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| P,X       | WO 2006/101816 A (TYCO ELECTRONICS CORP [US]; SHUEY JOHN RAYMOND [US])<br>28 September 2006 (2006-09-28)<br>the whole document | 1-7                   |
| X         | US 2003/109155 A1 (YAMASHITA KAZUNORI [JP]) 12 June 2003 (2003-06-12)<br>the whole document                                    | 1-5                   |
| Y         |                                                                                                                                | 7                     |
| Y         | EP 0 674 362 A1 (CINCH CONNECTEURS SA [FR]) 27 September 1995 (1995-09-27)<br>figure 5                                         | 7                     |
| X         | US 2004/192090 A1 (FLOWERS ROBERT J [US] ET AL) 30 September 2004 (2004-09-30)<br>the whole document                           | 1-6                   |
|           | -/--                                                                                                                           |                       |

☒ 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 document 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

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- \*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

19 November 2007

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Name and mailing address of the ISA/

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# INTERNATIONAL SEARCH REPORT

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| C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT |                                                                                                                              |                       |
|------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| Category*                                            | Citation of document, with indication, where appropriate, of the relevant passages                                           | Relevant to claim No. |
| Y                                                    | US 6 217 354 B1 (FENCL DUANE M [US] ET AL)<br>17 April 2001 (2001-04-17)<br>figures 1-3<br>-----                             | 8-10                  |
| Y                                                    | US 5 401 179 A (SHINCHI AKIRA [JP] ET AL)<br>28 March 1995 (1995-03-28)<br>column 2, line 60 - line 63; figures 1-4<br>----- | 8-10                  |
| A                                                    | EP 0 926 772 A (MOLEX INC [US])<br>30 June 1999 (1999-06-30)<br>paragraph [0025]; figure 4<br>-----                          | 10                    |

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US2007/004645

### 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 allsearchable 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 reportcovers only those claims for which fees were paid, specifically claims Nos.:
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.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

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

1. claims: 1-7

A connector assembly comprising an interengaging locking mechanism provided between the connector housing first portion and the locking member.

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2. claims: 8-10

An electrical connector system comprising a latch and a wire shroud which cooperatively provide an overstress mechanism preventing said latch from over-deflection.

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No  
PCT/US2007/004645

| Patent document<br>cited in search report | Publication<br>date | Patent family<br>member(s) | Publication<br>date |
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