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[Continued on next page]

(54) Title: MODULAR CONNECTOR WITH REDUCED TERMINATION VARIABILITY AND IMPROVED PERFORMANCE

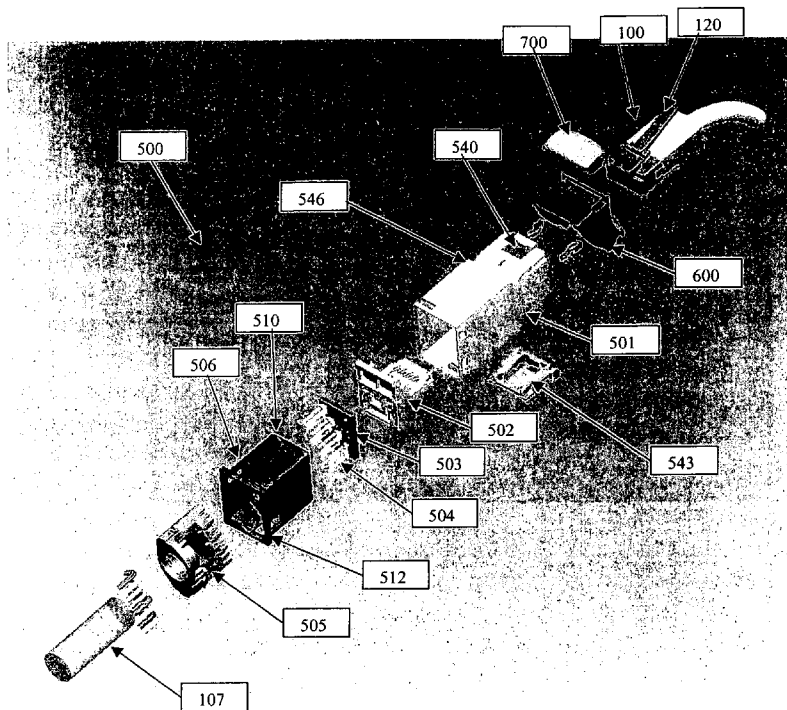


FIGURE 6

(57) Abstract: A telecommunications connector including a connector housing; a plurality of connector contacts in the connector housing; a substrate having first plated through holes for receiving termination ends of the connector contacts, the first plated through holes arranged in an area on the substrate; a plurality of termination contacts, the plurality of termination contacts positioned in second plated through holes in the substrate; the second plated through holes intersecting the area on the substrate.

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER IPC(8) - H01R 4/00 (2008.04) USPC - 439/344 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) USPC - 439/344		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched USPC - 439/344, § Search Terms Below		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) PubWEST (USPT, PGPB, EPAB, JPAB); google.com Search Terms Used: telecommunications, contacts, plated, holes, slots, termination, axis, lateral, laterally, angled, plane, housing, cover, rectangular, square, telephone, data, communications, substrate, body		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 6,371,794 B1 (Bauer et al.) 16 April 2002 (16.04.2002) entire document, especially Abstract; col. 1, ln. 60-67; col. 4, ln. 1-55; col. 5, ln. 26-49; col. 6, ln. 56-65	1, 2 ----- 3, 4
Y	US 6,193,526 B1 (Milner et al.) 27 February 2001 (27.02.2001) entire document, especially Abstract; FIG. 3, items 24, 26	3, 4
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/>		
* 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 26 August 2008 (26.08.2008)		Date of mailing of the international search report 11 SEP 2008
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201		Authorized officer: Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 08/04138

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 extra 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 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.:
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.:
1-4

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
Information on patent family members

International application No.

PCT/US 08/04138

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

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I: Claims 1-4: drawn to a telecommunications connector with a connector housing; a plurality of connector contacts in the connector housing; a substrate having plated through holes for receiving termination ends of the connector contacts; a plurality of termination contacts.

Group II: Claims 5-16: drawn to a telecommunications connector with a connector housing; a plurality of termination contacts; a termination block receiving a cable having a plurality of conductors, the conductors arranged in a plurality of pairs, the conductors laced into a termination bar of the termination block for termination with the termination contacts, such that no pair of conductors crosses another pair of conductors.

Group III: Claims 17-25, 28: drawn to a telecommunications assembly with a connector housing and a bezel mounted on the connector housing.

Group IV: Claims 26-27: drawn to a telecommunications assembly with a connector housing and a contact carrier positioned in the connector housing; a plurality of connector contacts supported on the contact carrier, at least one connector contact having a cantilevered beam; where the contact support section provides progressive constant radius support of the contact through the mating of a plug with the connector.

The inventions listed as Groups I - IV do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

Groups II - IV do not include the inventive concept of a substrate having plated through holes for receiving termination ends of the connector contacts, as required by Group I.

Groups I and III - IV do not include the inventive concept of a termination block receiving a cable having a plurality of conductors, the conductors arranged in a plurality of pairs, the conductors laced into a termination bar of the termination block for termination with the termination contacts, such that no pair of conductors crosses another pair of conductors, as required by Group II.

Groups I - II and IV do not include the inventive concept of bezel mounted on the connector housing, as required by Group III.

Groups I - III do not include the inventive concept of at least one connector contact having a cantilevered beam; where the contact support section provides progressive constant radius support of the contact through the mating of a plug with the connector, as required by Group III.

A telecommunications assembly with a connector housing is the only technical feature shared by all four groups, and connector contacts and termination contacts is a technical feature shared by groups I, II and IV. However, US 6,629,858 B2 to Lo et al., published October 7, 2003, discloses a telecommunications assembly with a housing (352) and connector contacts and termination contacts (contacts 160 FIG. 1, and see also FIG. 18 and col. 20, ln. 62-67)

Groups I - IV therefore lack unity under PCT Rule 13 because they do not share a same or corresponding special technical feature.