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(72) Inventor; and

(71) Applicant : KONISHI, Howard, M. [US/US]; 12530
135th Avenue NE, Kirkland, Washington 98034 (US).

(74) Agents: GRAYBEAL JACKSON LLP et al.; 400 108th
Avenue NE, Suite 700, Bellevue, Washington 98004
(US).

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(54) Title: RAPID-CONNECT COUPLER

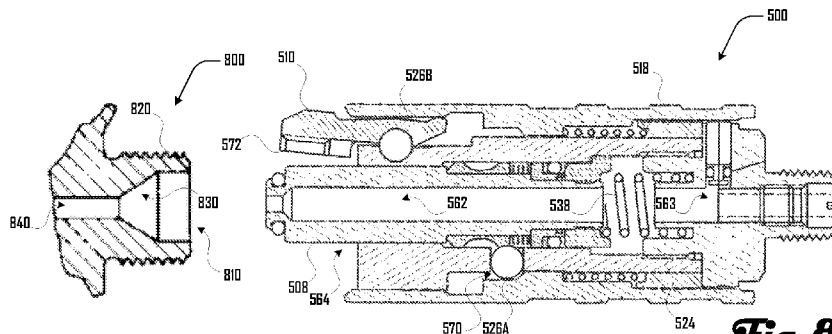


Fig. 8

(57) Abstract: A rapid-connect gas coupler is shown and described herein. In an embodiment, the rapid-connect gas coupler includes a spring-loaded probe within a probe cavity, which is defined by a housing and one or more latch segment. The probe can engage with a gas connector, which causes the latch segment to engage and couple with the gas connector.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2011/047282**A. CLASSIFICATION OF SUBJECT MATTER***F17C 13/04(2006.01)i, F17C 13/08(2006.01)i, B60S 5/02(2006.01)i, F17C 7/00(2006.01)i*

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)

F17C 13/04; F16L 21/04; F16L 37/00; F16L 37/12; F16L 37/28; F16L 29/00

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

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

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

eKOMPASS(KIPO internal) & Keywords:coupler, quick connect, ball cam

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	US 2008-0185837 A1 (DANIELSON ROBERT B.) 07 August 2008 See paragraphs [0028]-[0052] and figures 2-6.	1,2,5,8-17,20 ,23-31,33 3,4,6,7,18,19,21 ,22
X A	US 04884830A A (MEISINGER; STANLEE W.) 05 December 1989 See column 10 and figures 1 and 2.	27 11,12,28-31,33
A	US 2007-0001143 A1 (M. HOWARD KONISHI et al.) 04 January 2007 See paragraphs [0016]-[0022] and figure 1.	1-31,33
A	US 06039303A A (DANIELSON; ROBERT B. et al.) 21 March 2000 See abstract and figure 1.	1-31,33
A	US 05293902A A (LAPIERIE; GEORGE W.) 15 March 1994 See abstract and figure 1.	1-31,33
A	US 2009-0140519 A1 (PAVNASKAR SANDEEP JAYANT et al.) 04 June 2009 See abstract and figure 1.	1-31,33

 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

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"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

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"&" document member of the same patent family

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Authorized officer

Park Sang Hyun

Telephone No. 82-42-481-5434



INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2011/047282**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.: 32
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:

Claims 32 is dependent on claim 39. However, claim 39 does not exist. Therefore, claim 32 does not meet the PCT article 6.

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:

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 fee, this Authority did not invite payment of any additional fee.
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.:

- 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.

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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US 2009-0140519 A1	04.06.2009	None	