

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
7 August 2008 (07.08.2008)

PCT

(10) International Publication Number
WO 2008/094631 A3

- (51) **International Patent Classification:**
F16L 33/00 (2006.01)
- (21) **International Application Number:**
PCT/US2008/001268
- (22) **International Filing Date:** 31 January 2008 (31.01.2008)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
60/887,542 31 January 2007 (31.01.2007) US
- (71) **Applicant (for all designated States except US):** EATON CORPORATION [US/US]; Eaton Center, 1111 Superior Avenue, Cleveland, OH 44114 (US).
- (72) **Inventor; and**
- (75) **Inventor/Applicant (for US only):** HENRY, Ty, A. [US/US]; 689 Ida Maybee Road, Monroe, MI 48161 (US).
- (74) **Agent:** KOLOCOURIS, Gregory, S.; Benesch, Friedlander, Coplan & Aronoff LLP, 2300 BP Tower, 200 Public Square, Cleveland, OH 44114 (US).
- (81) **Designated States (unless otherwise indicated, for every kind of national protection available):** AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.
- (84) **Designated States (unless otherwise indicated, for every kind of regional protection available):** ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:**
— with international search report
- (88) **Date of publication of the international search report:**
6 November 2008

(54) **Title:** HOSE COUPLING ASSEMBLY

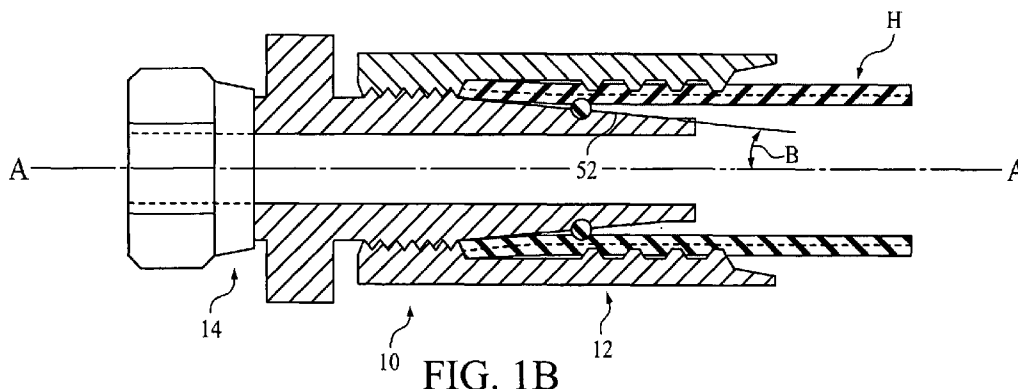


FIG. 1B

(57) **Abstract:** A hose coupling assembly for attachment to a hose having an inner surface and an outer surface. The hose coupling assembly includes a first member (e.g., a nipple) and a second member (e.g., a socket). The nipple includes a tapered outer surface, an outwardly facing groove extending inwardly from the tapered outer surface, and a set of external threads disposed rearward of the tapered outer surface. An annular seal is positioned within the groove. The socket includes a nipple receiving portion and a hose receiving portion secured to the outer surface of the hose, where the nipple receiving portion has a set of internal threads configured to mesh with and threadably engage the external threads on the nipple.



WO 2008/094631 A3

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 08/01268

<p>A. CLASSIFICATION OF SUBJECT MATTER IPC(8) - F16L 33/00 (2008.04) USPC - 285/245 According to International Patent Classification (IPC) or to both national classification and IPC</p>														
<p>B. FIELDS SEARCHED</p> <p>Minimum documentation searched (classification system followed by classification symbols) IPC(8): F16L 33/00 (2008.04) USPC: 285/245</p> <p>Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched USPC: 285/245, 242, 305; D23/262; 29/890.144. (see search terms)</p> <p>Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) USPTO - West - DB: PGPB, USPT, EPAB, JPAB Search terms: hose, coupling, thread, nipple, crimping, seal, socket, internal, nut, hexagonal, annular, protrusion, trapezoidal, wrench, flats and groove.</p>														
<p>C. DOCUMENTS CONSIDERED TO BE RELEVANT</p> <table border="1"> <thead> <tr> <th>Category*</th> <th>Citation of document, with indication, where appropriate, of the relevant passages</th> <th>Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td>Y</td> <td>US 3,863,958 A (TODD) 04 February 1975 (04.02.1975), figure 1-4; column 2, line 10 to column 4, line 11.</td> <td>1-20</td> </tr> <tr> <td>Y</td> <td>US 4,522,435 A (MILLER et al.) 11 June 1985 (11.06.1985), figure 1-5; column 2, line 17 to column 4, line 26.</td> <td>1-20</td> </tr> <tr> <td>Y</td> <td>US 5,042,849 A (KERSTING) 27 August 1991 (27.08.1991), figure 1-3; column 2, line 20 to column 3, line 2.</td> <td>7</td> </tr> </tbody> </table>			Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	Y	US 3,863,958 A (TODD) 04 February 1975 (04.02.1975), figure 1-4; column 2, line 10 to column 4, line 11.	1-20	Y	US 4,522,435 A (MILLER et al.) 11 June 1985 (11.06.1985), figure 1-5; column 2, line 17 to column 4, line 26.	1-20	Y	US 5,042,849 A (KERSTING) 27 August 1991 (27.08.1991), figure 1-3; column 2, line 20 to column 3, line 2.	7
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.												
Y	US 3,863,958 A (TODD) 04 February 1975 (04.02.1975), figure 1-4; column 2, line 10 to column 4, line 11.	1-20												
Y	US 4,522,435 A (MILLER et al.) 11 June 1985 (11.06.1985), figure 1-5; column 2, line 17 to column 4, line 26.	1-20												
Y	US 5,042,849 A (KERSTING) 27 August 1991 (27.08.1991), figure 1-3; column 2, line 20 to column 3, line 2.	7												
<p><input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/></p>														
<p>* Special categories of cited documents:</p> <table border="0"> <tr> <td> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent but published on or after the international filing date</p> <p>"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)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> </td> <td> <p>"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</p> <p>"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</p> <p>"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</p> <p>"&" document member of the same patent family</p> </td> </tr> </table>			<p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent but published on or after the international filing date</p> <p>"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)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p>	<p>"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</p> <p>"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</p> <p>"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</p> <p>"&" document member of the same patent family</p>										
<p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent but published on or after the international filing date</p> <p>"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)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p>	<p>"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</p> <p>"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</p> <p>"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</p> <p>"&" document member of the same patent family</p>													
<p>Date of the actual completion of the international search</p> <p>30 May 2008 (30.05.2008)</p>		<p>Date of mailing of the international search report</p> <p align="center">01 AUG 2008</p>												
<p>Name and mailing address of the ISA/US</p> <p>Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201</p>		<p>Authorized officer:</p> <p align="center">Lee W. Young</p> <p>PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774</p>												