



- (51) **International Patent Classification:**  
E21B 19/00 (2006.01) E21B 19/24 (2006.01)  
E21B 19/10 (2006.01)
- (21) **International Application Number:**  
PCT/US2010/047504
- (22) **International Filing Date:**  
1 September 2010 (01.09.2010)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**  
12/552,156 1 September 2009 (01.09.2009) US
- (71) **Applicant (for all designated States except US):** **TESCO CORPORATION** [CA/CA]; 6204-6a Street Se, Calgary, Alberta T2H 2B7 (CA).
- (72) **Inventor; and**
- (75) **Inventor/Applicant (for US only):** **SCHNEIDER, Warren, P.** [US/US]; 115 W. Laurelhurst, The Woodlands, TX 77382 (US).
- (74) **Agent:** **MORGAN, Linda, L.;** Bracewell & Giuliani LLP, P.O. Box 61389, Houston, TX 61389 (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,

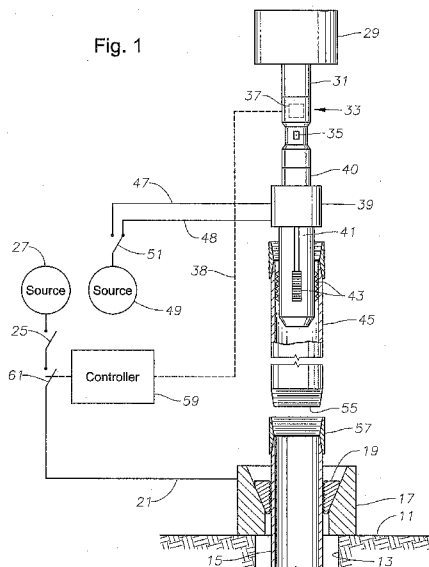
CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, 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, LR, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**  
— 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))

(88) **Date of publication of the international search report:**  
3 June 2011

(54) **Title:** METHOD OF PREVENTING DROPPED CASING STRING WITH AXIAL LOAD SENSOR



(57) **Abstract:** A method of running casing into a well utilizes a load sensor to avoid dropping the casing string accidentally. The rig has a spider (17) at the rig floor (11) that suspends a casing string (15) in the well when in a gripping position. A casing lifting mechanism will place a new joint of casing (45) on the casing string (15) suspended in the spider (17). The new joint of casing (45) is rotated to make up with the casing string (15). After makeup, the casing lifting mechanism lifts the new joint of casing and the casing string (15). The operator releases the spider (17) to allow the casing string (15) to be lowered further into the well. Before releasing the spider (17), a load sensor will send a signal indicating that the casing lifting mechanism is supporting a minimum amount of weight.

WO 2011/028786 A3

**A. CLASSIFICATION OF SUBJECT MATTER***E21B 19/00(2006.01)i, E21B 19/10(2006.01)i, E21B 19/24(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)

E21B 19/00; E21B 47/00; E21B 19/16; E21B 19/07; E21B 33/16

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) &amp; Keywords: load sensor, spider, top drive

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

| Category* | Citation of document, with indication, where appropriate, of the relevant passages                                     | Relevant to claim No. |
|-----------|--|-----------------------|
| Y         | US 2002-0170720 A1 (DAVID M. HAUGEN) 21 November 2002<br>See paragraphs 0032-0036 and figures 6 and 7                  | 1-12                  |
| Y         | US 2008-0264648 A1 (PIETRAS BERND-GEORG et al.) 30 October 2008<br>See the abstract, paragraphs 0044-0051 and figure 6 | 1-12                  |
| A         | US 2007-0131416 A1 (ALBERT ODELL et al.) 14 June 2007<br>See the abstract, paragraph 0027 and figure 1                 | 1-12                  |
| A         | US 2008-0149326 A1 (ANGELLE JEREMY R. et al.) 26 June 2008<br>See the abstract, paragraphs 0046,0051 and figures 1,2   | 1-12                  |

 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 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

"&amp;" document member of the same patent family

Date of the actual completion of the international search

14 APRIL 2011 (14.04.2011)

Date of mailing of the international search report

**18 APRIL 2011 (18.04.2011)**

Name and mailing address of the ISA/KR

Korean Intellectual Property Office  
Government Complex-Daejeon, 189 Cheongsu-ro,  
Seo-gu, Daejeon 302-701, Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

YOO, Hyun Duk

Telephone No. 82-42-481-8308



**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

**PCT/US2010/047504**

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
|--|------------------|-------------------------|------------------|
| US 2002-0170720 A1                     | 21.11.2002       | AU 1999-54332 A1        | 14.03.2000       |
|  |                  | AU 2001-48585 A1        | 30.10.2001       |
|  |                  | AU 2002-253377 B2       | 17.04.2008       |
|  |                  | AU 2002-253377 B8       | 04.09.2008       |
|  |                  | AU 2002-253377 B8       | 17.04.2008       |
|  |                  | AU 2003-264601 A1       | 23.12.2004       |
|  |                  | AU 2003-264601 B2       | 24.09.2009       |
|  |                  | AU 2008-203190 A1       | 14.08.2008       |
|  |                  | CA 2302231 A1           | 11.03.1999       |
|  |                  | CA 2302231 C            | 21.11.2006       |
|  |                  | CA 2404752 A1           | 25.10.2001       |
|  |                  | CA 2404752 C            | 15.09.2009       |
|  |                  | CA 2446687 A1           | 21.11.2002       |
|  |                  | CA 2446687 C            | 19.10.2010       |
|  |                  | CA 2451263 A1           | 27.05.2004       |
|  |                  | CA 2451263 C            | 05.01.2010       |
|  |                  | CA 2517990 A1           | 16.09.2004       |
|  |                  | CA 2517990 C            | 18.05.2010       |
|  |                  | CA 2517993 A1           | 16.09.2004       |
|  |                  | CA 2573670 A1           | 30.07.2007       |
|  |                  | CA 2605256 A1           | 02.03.2000       |
|  |                  | CA 2710362 A1           | 21.11.2002       |
|  |                  | CA 2714327 A1           | 16.09.2004       |
|  |                  | CA 2726769 A1           | 30.07.2007       |
|  |                  | EP 1012439 A1           | 28.06.2000       |
|  |                  | EP 1012439 B1           | 19.02.2003       |
|  |                  | EP 1108111 A1           | 20.06.2001       |
|  |                  | EP 1108111 B1           | 24.03.2004       |
|  |                  | EP 1274919 A1           | 15.01.2003       |
|  |                  | EP 1274919 B1           | 15.02.2006       |
|  |                  | EP 1387924 A1           | 11.02.2004       |
|  |                  | EP 1387924 B1           | 20.12.2006       |
|  |                  | EP 1426550 A1           | 09.06.2004       |
|  |                  | EP 1426550 B1           | 19.03.2008       |
|  |                  | EP 1659258 A2           | 24.05.2006       |
|  |                  | EP 1659258 A3           | 05.07.2006       |
|  |                  | EP 1659258 B1           | 20.08.2008       |
|  |                  | EP 1793079 A2           | 06.06.2007       |
|  |                  | EP 1793079 A3           | 29.08.2007       |
|  |                  | EP 1793079 B1           | 14.07.2010       |
|  |                  | EP 1813768 A1           | 01.08.2007       |
|  |                  | EP 1813768 B1           | 10.12.2008       |
|  |                  | EP 1970526 A2           | 17.09.2008       |
|  |                  | EP 1970526 A3           | 28.01.2009       |
|  |                  | GB 2340859 A            | 01.03.2000       |
|  |                  | GB 2414757 A            | 07.12.2005       |
|  |                  | GB 2415723 A            | 04.01.2006       |
|  |                  | GB 2428059 A            | 17.01.2007       |
|  |                  | NO20034937D0            | 06.11.2003       |

**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

**PCT/US2010/047504**

| Patent document<br>cited in search report | Publication<br>date | Patent family<br>member(s) | Publication<br>date |
|---|---------------------|----------------------------|---------------------|
|   |                     | US 2003-0111233 A1         | 19.06.2003          |
|   |                     | US 2003-0164276 A1         | 04.09.2003          |
|   |                     | US 2003-0173073 A1         | 18.09.2003          |
|   |                     | US 2004-0003490 A1         | 08.01.2004          |
|   |                     | US 2004-0035587 A1         | 26.02.2004          |
|   |                     | US 2004-0069500 A1         | 15.04.2004          |
|   |                     | US 2004-0144547 A1         | 29.07.2004          |
|   |                     | US 2004-0149451 A1         | 05.08.2004          |
|   |                     | US 2004-0173358 A1         | 09.09.2004          |
|   |                     | US 2004-0216924 A1         | 04.11.2004          |
|   |                     | US 2004-0251050 A1         | 16.12.2004          |
|   |                     | US 2005-0000691 A1         | 06.01.2005          |
|   |                     | US 2005-0161227 A1         | 28.07.2005          |
|   |                     | US 2006-0000600 A1         | 05.01.2006          |
|   |                     | US 2006-0032638 A1         | 16.02.2006          |
|   |                     | US 2006-0124316 A1         | 15.06.2006          |
|   |                     | US 2006-0169461 A1         | 03.08.2006          |
|   |                     | US 2007-0084598 A1         | 19.04.2007          |
|   |                     | US 2007-0107912 A1         | 17.05.2007          |
|   |                     | US 2007-0131416 A1         | 14.06.2007          |
|   |                     | US 2007-0137868 A1         | 21.06.2007          |
|   |                     | US 2007-0169930 A1         | 26.07.2007          |
|   |                     | US 2007-0193751 A1         | 23.08.2007          |
|   |                     | US 2008-0023192 A1         | 31.01.2008          |
|   |                     | US 2008-0047749 A1         | 28.02.2008          |
|   |                     | US 2008-0059073 A1         | 06.03.2008          |
|   |                     | US 2008-0083540 A1         | 10.04.2008          |
|   |                     | US 2008-0110637 A1         | 15.05.2008          |
|   |                     | US 2008-0185140 A1         | 07.08.2008          |
|   |                     | US 2009-0218090 A1         | 03.09.2009          |
|   |                     | US 2010-0224376 A1         | 09.09.2010          |
|   |                     | US 6527047 B1              | 04.03.2003          |
|   |                     | US 6536520 B1              | 25.03.2003          |
|   |                     | US 6591471 B1              | 15.07.2003          |
|   |                     | US 6688398 B2              | 10.02.2004          |
|   |                     | US 6742596 B2              | 01.06.2004          |
|   |                     | US 6938697 B2              | 06.09.2005          |
|   |                     | US 7021374 B2              | 04.04.2006          |
|   |                     | US 7043814 B2              | 16.05.2006          |
|   |                     | US 7073598 B2              | 11.07.2006          |
|   |                     | US 7140445 B2              | 28.11.2006          |
|   |                     | US 7191840 B2              | 20.03.2007          |
|   |                     | US 7219744 B2              | 22.05.2007          |
|   |                     | US 7249637 B2              | 31.07.2007          |
|   |                     | US 7281587 B2              | 16.10.2007          |
|   |                     | US 7296623 B2              | 20.11.2007          |
|   |                     | US 7325610 B2              | 05.02.2008          |
|   |                     | US 7353880 B2              | 08.04.2008          |
|   |                     | US 7503397 B2              | 17.03.2009          |
|   |                     | US 7509722 B2              | 31.03.2009          |

**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

**PCT/US2010/047504**

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
|--|------------------|-------------------------|------------------|
|  |                  | US 7513300 B2           | 07.04.2009       |
|  |                  | US 7568522 B2           | 04.08.2009       |
|  |                  | US 7594540 B2           | 29.09.2009       |
|  |                  | US 7654325 B2           | 02.02.2010       |
|  |                  | US 7669662 B2           | 02.03.2010       |
|  |                  | US 7712523 B2           | 11.05.2010       |
|  |                  | US 7717184 B2           | 18.05.2010       |
|  |                  | US 7740078 B2           | 22.06.2010       |
|  |                  | US 7793719 B2           | 14.09.2010       |
|  |                  | US 7874352 B2           | 25.01.2011       |
|  |                  | US 7896084 B2           | 01.03.2011       |
|  |                  | US 7918273 B2           | 05.04.2011       |
|  |                  | WO 00-11309 A1          | 02.03.2000       |
|  |                  | WO 01-79652 A1          | 25.10.2001       |
|  |                  | WO 02-092959 A1         | 21.11.2002       |
|  |                  | WO 2004-079147 A2       | 16.09.2004       |
|  |                  | WO 2004-079147 A3       | 16.09.2004       |
|  |                  | WO 2004-079155 A2       | 16.09.2004       |
|  |                  | WO 2004-079155 A3       | 16.09.2004       |
|  |                  | WO 99-11902 A1          | 11.03.1999       |
| US 2008-0264648 A1                     | 30.10.2008       | CA 2685373 A1           | 06.11.2008       |
|  |                  | EP 2142752 A2           | 13.01.2010       |
|  |                  | WO 2008-134581 A2       | 06.11.2008       |
|  |                  | WO 2008-134581 A2       | 06.11.2008       |
|  |                  | WO 2008-134581 A3       | 22.01.2009       |
| US 2007-0131416 A1                     | 14.06.2007       | AU 1999-54332 A1        | 14.03.2000       |
|  |                  | AU 2001-48585 A1        | 30.10.2001       |
|  |                  | AU 2002-253377 B2       | 17.04.2008       |
|  |                  | AU 2002-253377 B8       | 17.04.2008       |
|  |                  | AU 2002-253377 B8       | 04.09.2008       |
|  |                  | AU 2003-264601 A1       | 23.12.2004       |
|  |                  | AU 2003-264601 B2       | 24.09.2009       |
|  |                  | CA 2302231 A1           | 11.03.1999       |
|  |                  | CA 2302231 C            | 21.11.2006       |
|  |                  | CA 2404752 A1           | 25.10.2001       |
|  |                  | CA 2404752 C            | 15.09.2009       |
|  |                  | CA 2446687 A1           | 21.11.2002       |
|  |                  | CA 2446687 C            | 19.10.2010       |
|  |                  | CA 2451263 A1           | 27.05.2004       |
|  |                  | CA 2451263 C            | 05.01.2010       |
|  |                  | CA 2517990 A1           | 16.09.2004       |
|  |                  | CA 2517990 C            | 18.05.2010       |
|  |                  | CA 2517993 A1           | 16.09.2004       |
|  |                  | CA 2573670 A1           | 30.07.2007       |
|  |                  | CA 2605256 A1           | 02.03.2000       |
|  |                  | CA 2710362 A1           | 21.11.2002       |
|  |                  | CA 2714327 A1           | 16.09.2004       |
|  |                  | CA 2726769 A1           | 30.07.2007       |

**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

**PCT/US2010/047504**

| Patent document<br>cited in search report | Publication<br>date | Patent family<br>member(s) | Publication<br>date |
|---|---------------------|----------------------------|---------------------|
|   |                     | EP 1012439 A1              | 28.06.2000          |
|   |                     | EP 1012439 B1              | 19.02.2003          |
|   |                     | EP 1108111 A1              | 20.06.2001          |
|   |                     | EP 1108111 B1              | 24.03.2004          |
|   |                     | EP 1274919 A1              | 15.01.2003          |
|   |                     | EP 1274919 B1              | 15.02.2006          |
|   |                     | EP 1387924 A1              | 11.02.2004          |
|   |                     | EP 1387924 B1              | 20.12.2006          |
|   |                     | EP 1426550 A1              | 09.06.2004          |
|   |                     | EP 1426550 B1              | 19.03.2008          |
|   |                     | EP 1659258 A2              | 24.05.2006          |
|   |                     | EP 1659258 A3              | 05.07.2006          |
|   |                     | EP 1659258 B1              | 20.08.2008          |
|   |                     | EP 1793079 A2              | 06.06.2007          |
|   |                     | EP 1793079 A3              | 29.08.2007          |
|   |                     | EP 1793079 B1              | 14.07.2010          |
|   |                     | EP 1813768 A1              | 01.08.2007          |
|   |                     | EP 1813768 B1              | 10.12.2008          |
|   |                     | EP 1970526 A2              | 17.09.2008          |
|   |                     | EP 1970526 A3              | 28.01.2009          |
|   |                     | GB 2340859 A               | 01.03.2000          |
|   |                     | GB 2414757 A               | 07.12.2005          |
|   |                     | GB 2415723 A               | 04.01.2006          |
|   |                     | GB 2428059 A               | 17.01.2007          |
|   |                     | US 2002-0170720 A1         | 21.11.2002          |
|   |                     | US 2003-0111233 A1         | 19.06.2003          |
|   |                     | US 2003-0164276 A1         | 04.09.2003          |
|   |                     | US 2003-0173073 A1         | 18.09.2003          |
|   |                     | US 2004-0003490 A1         | 08.01.2004          |
|   |                     | US 2004-0035587 A1         | 26.02.2004          |
|   |                     | US 2004-0069500 A1         | 15.04.2004          |
|   |                     | US 2004-0144547 A1         | 29.07.2004          |
|   |                     | US 2004-0149451 A1         | 05.08.2004          |
|   |                     | US 2004-0173358 A1         | 09.09.2004          |
|   |                     | US 2004-0216924 A1         | 04.11.2004          |
|   |                     | US 2004-0251050 A1         | 16.12.2004          |
|   |                     | US 2005-0000691 A1         | 06.01.2005          |
|   |                     | US 2005-0161227 A1         | 28.07.2005          |
|   |                     | US 2006-0000600 A1         | 05.01.2006          |
|   |                     | US 2006-0032638 A1         | 16.02.2006          |
|   |                     | US 2006-0124316 A1         | 15.06.2006          |
|   |                     | US 2006-0169461 A1         | 03.08.2006          |
|   |                     | US 2007-0084598 A1         | 19.04.2007          |
|   |                     | US 2007-0107912 A1         | 17.05.2007          |
|   |                     | US 2007-0137868 A1         | 21.06.2007          |
|   |                     | US 2007-0169930 A1         | 26.07.2007          |
|   |                     | US 2007-0193751 A1         | 23.08.2007          |
|   |                     | US 2008-0023192 A1         | 31.01.2008          |
|   |                     | US 2008-0047749 A1         | 28.02.2008          |
|   |                     | US 2008-0059073 A1         | 06.03.2008          |

**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

**PCT/US2010/047504**

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
|--|------------------|-------------------------|------------------|
|  |                  | US 2008-0083540 A1      | 10.04.2008       |
|  |                  | US 2008-0110637 A1      | 15.05.2008       |
|  |                  | US 2008-0185140 A1      | 07.08.2008       |
|  |                  | US 2009-0218090 A1      | 03.09.2009       |
|  |                  | US 2010-0224376 A1      | 09.09.2010       |
|  |                  | US 6527047 B1           | 04.03.2003       |
|  |                  | US 6536520 B1           | 25.03.2003       |
|  |                  | US 6591471 B1           | 15.07.2003       |
|  |                  | US 6688398 B2           | 10.02.2004       |
|  |                  | US 6742596 B2           | 01.06.2004       |
|  |                  | US 6938697 B2           | 06.09.2005       |
|  |                  | US 7021374 B2           | 04.04.2006       |
|  |                  | US 7043814 B2           | 16.05.2006       |
|  |                  | US 7073598 B2           | 11.07.2006       |
|  |                  | US 7140445 B2           | 28.11.2006       |
|  |                  | US 7191840 B2           | 20.03.2007       |
|  |                  | US 7219744 B2           | 22.05.2007       |
|  |                  | US 7249637 B2           | 31.07.2007       |
|  |                  | US 7281587 B2           | 16.10.2007       |
|  |                  | US 7296623 B2           | 20.11.2007       |
|  |                  | US 7325610 B2           | 05.02.2008       |
|  |                  | US 7353880 B2           | 08.04.2008       |
|  |                  | US 7503397 B2           | 17.03.2009       |
|  |                  | US 7509722 B2           | 31.03.2009       |
|  |                  | US 7513300 B2           | 07.04.2009       |
|  |                  | US 7568522 B2           | 04.08.2009       |
|  |                  | US 7594540 B2           | 29.09.2009       |
|  |                  | US 7654325 B2           | 02.02.2010       |
|  |                  | US 7669662 B2           | 02.03.2010       |
|  |                  | US 7712523 B2           | 11.05.2010       |
|  |                  | US 7717184 B2           | 18.05.2010       |
|  |                  | US 7740078 B2           | 22.06.2010       |
|  |                  | US 7793719 B2           | 14.09.2010       |
|  |                  | US 7874352 B2           | 25.01.2011       |
|  |                  | US 7896084 B2           | 01.03.2011       |
|  |                  | US 7918273 B2           | 05.04.2011       |
|  |                  | WO 00-11309 A1          | 02.03.2000       |
|  |                  | WO 01-79652 A1          | 25.10.2001       |
|  |                  | WO 02-092959 A1         | 21.11.2002       |
|  |                  | WO 2004-079147 A2       | 16.09.2004       |
|  |                  | WO 2004-079147 A3       | 16.09.2004       |
|  |                  | WO 2004-079155 A2       | 16.09.2004       |
|  |                  | WO 2004-079155 A3       | 16.09.2004       |
|  |                  | WO 99-11902 A1          | 11.03.1999       |
| US 2008-0149326 A1                     | 26.06.2008       | CA 2572923 A1           | 23.02.2006       |
|  |                  | CA 2664196 A1           | 23.02.2006       |
|  |                  | CA 2664204 A1           | 23.02.2006       |
|  |                  | CA 2685204 A1           | 06.11.2008       |
|  |                  | EP 1781895 A2           | 09.05.2007       |

**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

**PCT/US2010/047504**

| Patent document<br>cited in search report | Publication<br>date | Patent family<br>member(s) | Publication<br>date |
|---|---------------------|----------------------------|---------------------|
|   |                     | EP 2150676 A2              | 10.02.2010          |
|   |                     | JP 2006-314793 A           | 24.11.2006          |
|   |                     | N020070744A                | 13.04.2007          |
|   |                     | US 2006-0011350 A1         | 19.01.2006          |
|   |                     | US 2006-0293589 A1         | 28.12.2006          |
|   |                     | US 2007-0191706 A1         | 16.08.2007          |
|   |                     | US 7322406 B2              | 29.01.2008          |
|   |                     | US 7467004 B2              | 16.12.2008          |
|   |                     | US 7869858 B2              | 11.01.2011          |
|   |                     | WO 2006-019693 A2          | 23.02.2006          |
|   |                     | WO 2006-019693 A3          | 03.05.2007          |
|   |                     | WO 2006-019693 A3          | 23.02.2006          |
|   |                     | WO 2008-134346 A2          | 06.11.2008          |
|   |                     | WO 2008-134346 A8          | 06.11.2008          |