(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
29 January 2009 (29.01.2009)

PCT

(10) International Publication Number
WO 2009/014795 A2

(51) International Patent Classification:
E21B 33/04 (2006.01)

(21) International Application Number:
PCT/US2008/064153

(22) International Filing Date: 19 May 2008 (19.05.2008)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/950,844 19 July 2007 (19.07.2007) US

(71) Applicant *(for all designated States except US)*: **CAMERON INTERNATIONAL CORPORATION** [US/US]; 4646 W. Sam Houston Parkway North, Houston, Texas 77041 (US).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **NGUYEN, Dennis P.** [US/US]; 3305 Aspenbrook Court, Pearland, Texas 77581 (US). **TAYLOR, Thomas E.** [US/US]; 1206 Ahrens, Houston, Texas 77017-5526 (US).

(74) Agent: **SWANSON, Tait R.**; 7915 FM 1960 West, Suite 330, Houston, TX 77070 (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,

[Continued on next page]

(54) Title: SEAL SYSTEM AND METHOD

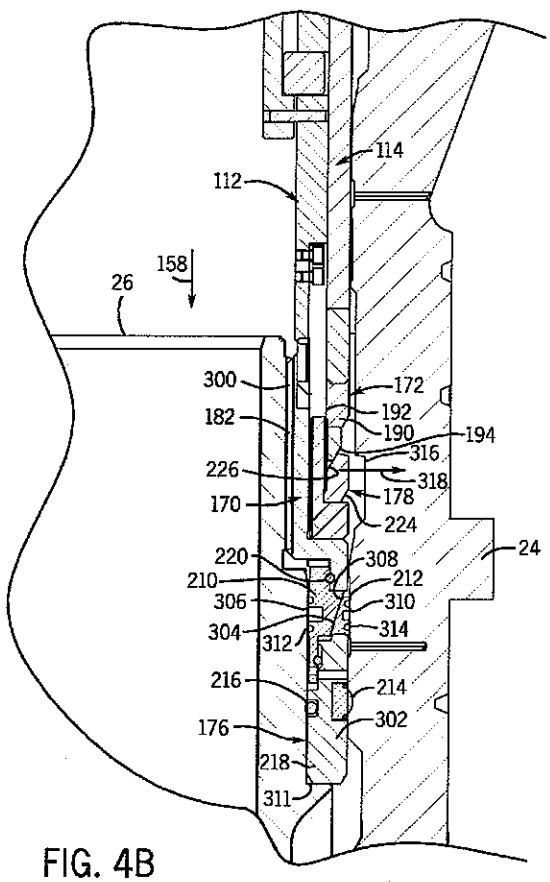


FIG. 4B

(57) Abstract: A system in some embodiments includes a system, having a seal assembly, including an inner energizing ring, an outer energizing ring, a load ring disposed between the inner energizing ring and the outer energizing ring, a sealing element, and a lock ring. Further other embodiments provide a method of sealing, including rotating an inner energizing ring in a direction to move the inner energizing ring in a first axial direction to seat a seal, rotating an outer energizing ring in the direction to wedgingly engage and set a lock ring in a radial direction, and rotating a load ring in the direction to move the load ring in a second axial direction to set the lock ring.

WO 2009/014795 A2

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).

Declarations under Rule 4.17:

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

Published:

— *without international search report and to be republished upon receipt of that report*