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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
1 March 2012 (01.03.2012)

PCT

(10) International Publication Number
WO 2012/025715 A2

(51) International Patent Classification:
E21B 33/038 (2006.01)

(21) International Application Number:
PCT/GB2011/001253

(22) International Filing Date:
22 August 2011 (22.08.2011)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
1014087.9 23 August 2010 (23.08.2010) GB

(71) Applicant *(for all designated States except US)*: **AKER SUBSEA LIMITED** [GB/GB]; Unit 59, Clivemont Road, Cordwallis Industrial Estate, Maidenhead, Berkshire SL6 7BZ (GB).

(72) Inventor; and

(75) Inventor/Applicant *(for US only)*: **ELLISON, Stuart, James** [GB/GB]; 11Tormentil Crescent, Aberdeen AB23 8SY (GB).

(74) Agent: **HORTON, Andrew**; Bowles Horton, Felden House, Dower Mews, High Street, Berkhamsted, Hertfordshire HP4 2BL (GB).

(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, QA, 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.

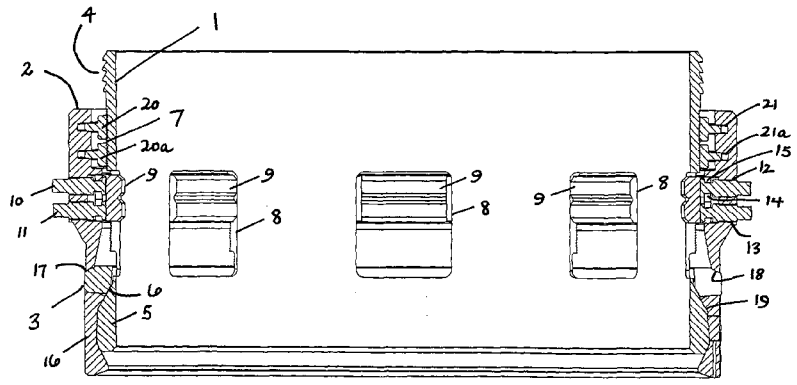
(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— *without international search report and to be republished upon receipt of that report (Rule 48.2(g))*

(54) **Title**: RATCHET AND LATCH MECHANISMS

FIGURE 1



(57) **Abstract**: A device for the application of a preload between a subsea wellhead and a conductor housing comprises an activating member (1), a support housing (2), a locking member (3), end means (9) for securing the support housing relative to the wellhead. Movement of the activating member causes an inclined lateral movement of the locking member. The activating member carries a ratchet (7) comprising a multiplicity of serrations which have a regular pitch in the activating direction and the support housing (1, 2) cames at least two latches (19, 20) which allow the relative movement and can engage the ratchet to inhibit movement reverse to the activating direction. The discrete locking positions provided by one of the latches are positionally out of phase with the discrete locking positions provided by the other latch or latches. A support member (16) is positioned to be moved laterally in response to movement of the activating member and to support the locking member (3) against the engagement zone (18) of the datum member (2).

WO 2012/025715 A2