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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
31 December 2003 (31.12.2003)

PCT

(10) International Publication Number
WO 2004/001190 A3

(51) International Patent Classification[7]: E21B 29/12

(21) International Application Number:
PCT/US2003/018961

(22) International Filing Date: 17 June 2003 (17.06.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10/176,305 20 June 2002 (20.06.2002) US

(71) Applicant: **DRIL-QUIP, INC.** [US/US]; 13550 Hempstead Highway, Houston, TX 77040 (US).

(72) Inventors: **MARROQUIN, Daniel, A.**; 11426 Hambleton Way, Houston, TX 77065 (US). **NISENBAUM, Flavio**; 8723 Cypressbrook, Houston, TX 77095 (US).

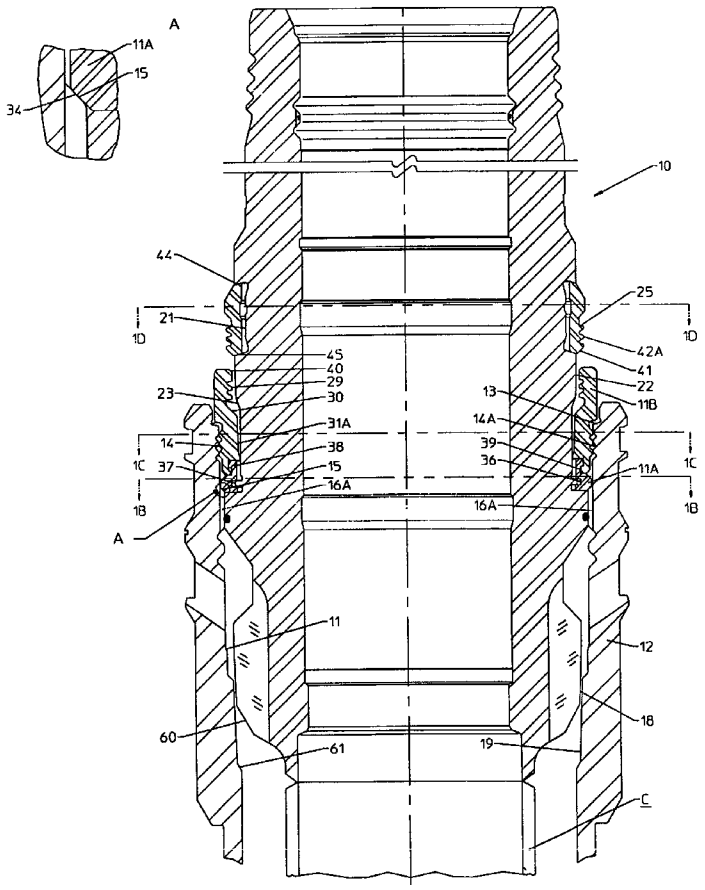
(74) Agent: **HELMREICH, Loren, G.**; Browning Bushman P.C., 5718 Westheimer, Suite 1800, Houston, TX 77057 (US).

(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: SUBSEA WELL APPARATUS



(57) Abstract: There is disclosed subsea well apparatus having a wellhead member body adapted to be lowered into and latched within the bore of a conductor by means of split locking (LR) and ratchet rings (25) carried by the body in response to the weight of the casing suspended from the body. The locking ring (LR) has locking teeth (14) engageable with locking grooves (14A) in the bore, and the ratchet ring (25) has ratchet teeth engageable ratchet grooves (29) within the locking ring. Upper and lower coaxial downwardly and inwardly extending wedge surfaces are tightly engaged as the body is latched within the conductor.

WO 2004/001190 A3

WO 2004/001190 A3

Published:
— *with international search report*
— *with amended claims*

(88) Date of publication of the international search report:
1 April 2004

Date of publication of the amended claims: 1 July 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.