PCT WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

IPOS
20010099 3-5

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 7 : E21B 17/00 | A1

(11) International Publication Number: WO 00/06867

(43) International Publication Date: 10 February 2000 (10.02.00)

(21) International Application Number: PCT/US99/17194

(22) International Filing Date: 29 July 1999 (29.07.99)

(30) Priority Data:
60/095,003 30 July 1998 (30.07.98) US

(71) Applicant: ABB VETCO GRAY INC. [US/US]; 10777 Northwest Freeway, Houston, TX 77252–2291 (US).

(72) Inventors: CARAWAY, Miles, F.; 2915 Risinger Drive, Shreveport, LA 71119 (US). HALL, Douglas, D.; 1622 Althea Drive, Houston, TX 77018 (US).

(74) Agents: BRADLEY, James, E. et al.; Felsman, Bradley, Vaden, Gunter & Dillon, LLP, Suite 1100, One Riverway, Houston, TX 77056–1920 (US).

(81) Designated States: SG, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).

Published
With international search report.

(54) Title: DRILL PIPE PROTECTION RINGS

(57) Abstract

Drill pipe protection rings for filling external identification slots in drill pipe tool joints prevent damage to the internal seals of a drilling head. The rings are formed from resilient elastomeric materials. In cross section, each ring has slightly convex inner and outer surfaces, and a series of circumferentially spaced–apart, hemispherical bumps located along its inner surface. One ring is mounted within each slot on each drill pipe section. The rings stretch slightly while being installed, but form a tight fit once they are properly seated. When installed, the outer surfaces of the rings will protrude slightly outward from or beyond the slots. The hemispherical bumps help align and center the rings within the slots. Without the rings, sharp edges of the slots on the drill pipe tool joints could cause severe damage as they passed through the drill head. However, with the rings, the outer surfaces of the slots are substantially filled to prevent their edges from cutting or gouging the elastomers.

