



- (51) International Patent Classification:
E21B 33/06 (2006.01)
- (21) International Application Number:
PCT/US2013/036010
- (22) International Filing Date:
10 April 2013 (10.04.2013)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
61/622,458 10 April 2012 (10.04.2012) US
- (71) Applicant: NATIONAL OILWELL VARCO, L.P.
[US/US]; 7909 Parkwood Circle Drive, Houston, TX
77036 (US).
- (72) Inventor: JAHNKE, Douglas, A.; 5526 Pinewilde Drive,
Houston, TX 77066 (US).
- (74) Agent: SALAZAR, Jennie JL; JL Salazar Law Firm,
PLLC, 1934 West Gray Street, Suite 401, Houston, TX
77019 (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, BN, 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, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU,
RW, 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, RW, SD, SL, SZ, TZ,
UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, 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: BLOWOUT PREVENTER WITH LOCKING RAM ASSEMBLY AND METHOD OF USING SAME

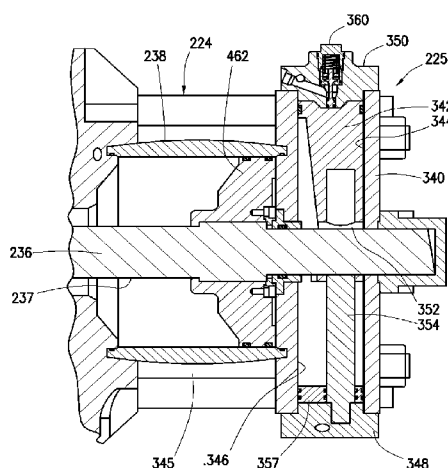


FIG. 4A-1

(57) Abstract: A lock assembly of a blowout preventer is provided. The blowout preventer includes a ram assembly slidably positionable in the channel and engageable with a tubular. The ram assembly includes a ram block, a ram cylinder, and a ram shaft. The lock assembly includes a lock cylinder and a lock piston. The lock cylinder is operatively connectable to the ram cylinder. The ram shaft has an end slidably extendable into a lock cavity of the lock cylinder. The lock piston is slidably positionable in the lock cylinder and separates the lock cavity into a lock and a closing chamber. The lock piston has a ram surface engageable with the end when the lock piston is in a locked position, and a ram hole therethrough to receive the end when the lock piston is in an unlocked position whereby the ram block is selectively lockable about the tubular.

