

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
25 June 2020 (25.06.2020)



(10) International Publication Number
WO 2020/131782 A1

(51) International Patent Classification:

E21B 23/06 (2006.01) E21B 33/16 (2006.01)
E21B 33/12 (2006.01)

(21) International Application Number:

PCT/US2019/066707

(22) International Filing Date:

17 December 2019 (17.12.2019)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

62/783,732 21 December 2018 (21.12.2018) US
62/811,679 28 February 2019 (28.02.2019) US

(71) Applicant: **DRIL-QUIP, INC.** [US/US]; 6401 N. Eldridge
Parkway, Houston, TX 77041 (US).

(72) Inventor: **WARNEKE, Jacob, S.**; 11410 Valley Stream
Drive, Houston, TX 77043 (US).

(74) Agent: **HAUSMAN, Brian et al.**; Baker Bolts LLP, 910
Louisiana Street, Houston, TX 77002 (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, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, 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, SA, 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, ST, 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, KM, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

— of inventorship (Rule 4.17(iv))

(54) Title: RELEASE MECHANISM FOR MECHANICALLY LOCKED WIPER PLUG SYSTEM

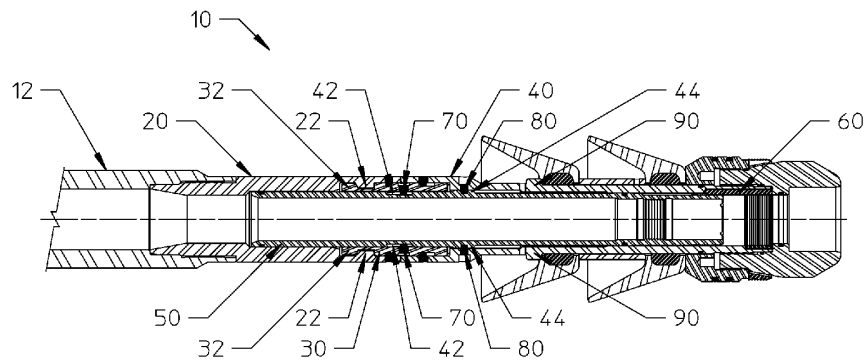


FIGURE 1

(57) Abstract: A release mechanism for a mechanically locked wiper plug system is provided. The release mechanism may utilize a shifting sleeve to rotate or pivot a release sub, thus: disengaging a load shoulder and releasing the plug system, in some embodiments, the plug system may be mechanically locked to a running tool via corresponding slotted load shoulders in the running tool and on a release sub. The release sub may be connected to an actuation sleeve via shear screws. Furthermore, the actuation sleeve may contain a guide consisting of one or more helical slotted guides which interact with the release sub shear screws.

[Continued on next page]

Published:

- *with international search report (Art. 21(3))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*