

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
05 August 2021 (05.08.2021)



(10) International Publication Number
WO 2021/154091 A1

(51) International Patent Classification:
E21B 17/02 (2006.01) *E21B 43/12* (2006.01)
E21B 34/06 (2006.01)

(21) International Application Number:
PCT/NO2021/050028

(22) International Filing Date:
29 January 2021 (29.01.2021)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
20200124 31 January 2020 (31.01.2020) NO

(71) Applicant: **PETROLEUM TECHNOLOGY COMPAN-
NY AS** [NO/NO]; Slettestrandveien 13, 4032 STA-
VANGER (NO).

(72) Inventor: **GUEST, Oliver**; Blåfjørvegen 6, 4053 RÆGE
(NO).

(74) Agent: **ZACCO NORWAY AS**; P.O. Box 488 Skøyen,
0213 OSLO (NO).

(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, IT, 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, ST, SV, SY, TH, TJ, TM, TN,
TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,

(54) Title: A DOWNHOLE CONTROL ARRANGEMENT, A VALVE ARRANGEMENT, A SIDE POCKET MANDREL, AND
METHOD FOR OPERATING A DOWNHOLE VALVE ARRANGEMENT

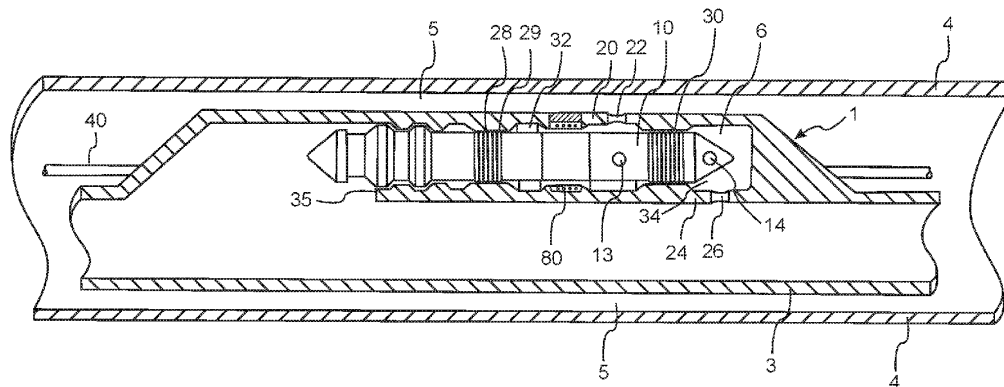


FIG. 2

(57) Abstract: A downhole control arrangement (60) for installation in hydrocarbon well and for controlling the operation of a downhole valve arrangement (10) comprising an electrically controlled control valve, wherein the control arrangement comprises a control system (70) and an electric power supply source configured for supplying electric power to the control system. Further is disclosed downhole valve arrangement for controlling the flow of an injection fluid into a production tubing of a hydrocarbon well, comprising a control arrangement, and a side pocket mandrel (1) for installation in a production tubing (3) for use in a hydrocarbon well, wherein the side pocket mandrel comprises an interior pocket space (6) and a valve arrangement (10).

[Continued on next page]

WO 2021/154091 A1

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).

Published:

— with international search report (Art. 21(3))