

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
20 April 2023 (20.04.2023)



(10) International Publication Number
WO 2023/064214 A1

(51) International Patent Classification:
E21B 7/04 (2006.01) *E21B 33/06* (2006.01)
F24T 10/17 (2018.01)

(21) International Application Number:
PCT/US2022/046178

(22) International Filing Date:
10 October 2022 (10.10.2022)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
63/255,325 13 October 2021 (13.10.2021) US

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(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, CV, CZ, DE, DJ, DK, DM,
DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,
HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE,
KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU,
LY, MA, MD, 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,
GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ,
UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ,

(54) Title: OPTIMIZED CO2 SEQUESTRATION AND ENHANCED GEOTHERMAL SYSTEM

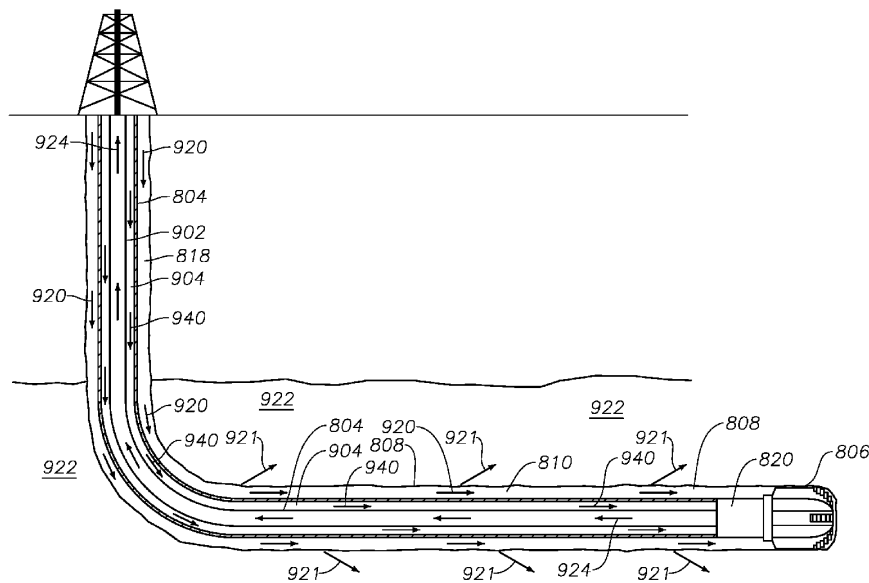


FIG. 9

(57) Abstract: Disclosed herein are various embodiments of systems for drilling and operating a well which may have dual uses. The well may be drilled and operated as a geothermal well using a hybrid approach where a heat transfer fluid is injected into a hot rock formation but is not removed, and heat is extracted using a closed loop method. The geothermal well is then evaluated for use as a carbon dioxide sequestration well. In other embodiments, the well is drilled as a carbon dioxide sequestration well and then evaluated for its potential for generating geothermal energy using a hybrid approach where supercritical carbon dioxide is injected into a hot rock formation but is not removed, and heat is extracted using a closed loop method. Both horizontal and vertical wells are disclosed, in sedimentary rocks and in basement granite.

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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, ME, 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:

- *as to the identity of the inventor (Rule 4.17(i))*
- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*
- *of inventorship (Rule 4.17(iv))*

Published:

- *with international search report (Art. 21(3))*