

- (51) International Patent Classification:
E21B 25/08 (2006.01) *G01N 1/08* (2006.01)

(21) International Application Number:
PCT/US2024/013859

(22) International Filing Date:
31 January 2024 (31.01.2024)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
63/442,762 01 February 2023 (01.02.2023) US

(71) Applicant: **EARTHGRID PBC** [US/US]; 1150 Brickyard Cove Rd., Richmond, California 94801 (US).

(72) Inventors: **HELMING, Troy Anthony**; 1150 Brickyard Cove Rd., Richmond, California 94801 (US). **LANE, Gregory Scott**; 1150 Brickyard Cove Rd., Richmond, California 94801 (US). **DOWNING, Miles L.**; 1150 Brickyard Cove Rd., Richmond, California 94801 (US). **TEMPLE, Michelle**; 1150 Brickyard Cove Rd., Richmond, California 94801 (US). **FRUCI, Carmelo**; 1150 Brickyard Cove Rd., Richmond, California 94801 (US). **IRVINE, Jeffrey**
- O.**; 1150 Brickyard Cove Rd., Richmond, California 94801 (US). **DZADO, Jeffrey Allen**; 1150 Brickyard Cove Rd., Richmond, California 94801 (US). **ALSPAUGH, David**; 1150 Brickyard Cove Rd., Richmond, California 94801 (US). **HARVISON, Tylee**; 1150 Brickyard Cove Rd., Richmond, California 94801 (US). **KRETSCH, Brian**; 1150 Brickyard Cove Rd., Richmond, California 94801 (US). **LANE, Brian**; 1150 Brickyard Cove Rd., Richmond, California 94801 (US). **LANE, Sam**; 1150 Brickyard Cove Rd., Richmond, California 94801 (US). **PROPST, Chad**; 1150 Brickyard Cove Rd., Richmond, California 94801 (US).

(74) Agent: **SZEPESI, Judith**; 99 Almaden Boulevard, Suite 575, San Jose, California 95113 (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, 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, MU, 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,

(54) Title: GEOLOGIC MATERIAL REMOVAL SYSTEM

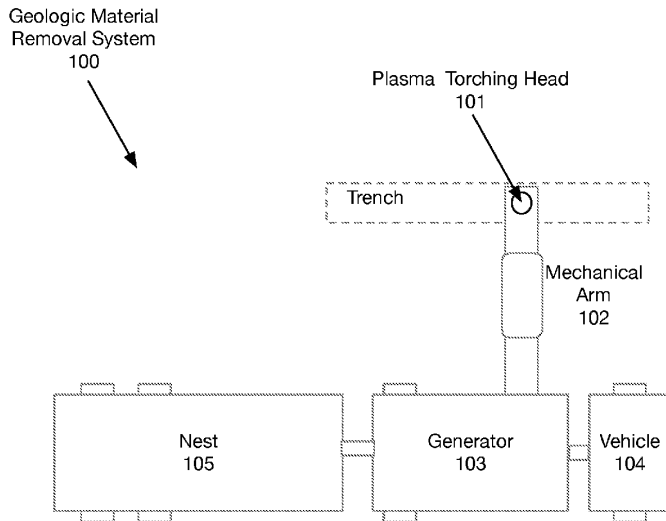


Fig. 1A

(57) Abstract: A plasma excavation system comprising a moveable support structure including a controller, an attachment mechanism removably coupled to the moveable support structure, and a plasma torching head coupled to the attachment mechanism, the plasma torching head moveable along two axes.

[Continued on next page]

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, CV, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SC, 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, 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).

Published:

— *without international search report and to be republished upon receipt of that report (Rule 48.2(g))*