



(51) International Patent Classification:

A61B 34/30 (2016.01) A61F 2/82 (2013.01)
A61B 10/02 (2006.01) A61B 90/00 (2016.01)
A61N 5/10 (2006.01)

(21) International Application Number:

PCT/US2021/014628

(22) International Filing Date:

22 January 2021 (22.01.2021)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

62/965,070 23 January 2020 (23.01.2020) US

(71) Applicant: **PROMAXO, INC.** [US/US]; 70 Washington
Street, Suite 407, Oakland, California 94607 (US).

(72) Inventors: **KUMAR, Dinesh**; 6941 Cherry Ridge Circle,
Roseville, California 95678 (US). **NACEV, Aleksandar**;
3828A 19th Street, San Francisco, California 94114 (US).
NARAYANAN, Ram; 1448 Courtyard Drive, San Jose,
Pennsylvania 95118 (US). **VOHRA, Amit**; 1851 Sorrell
Circle, Rocklin, California 95765 (US).

(74) Agent: **MURRAY, Lauren S.** et al.; K&L Gates LLP, 210
Sixth Avenue, Pittsburgh, Pennsylvania 15222-2613 (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, 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,

(54) Title: MRI-GUIDED ROBOTIC SYSTEMS AND METHODS FOR BIOPSY

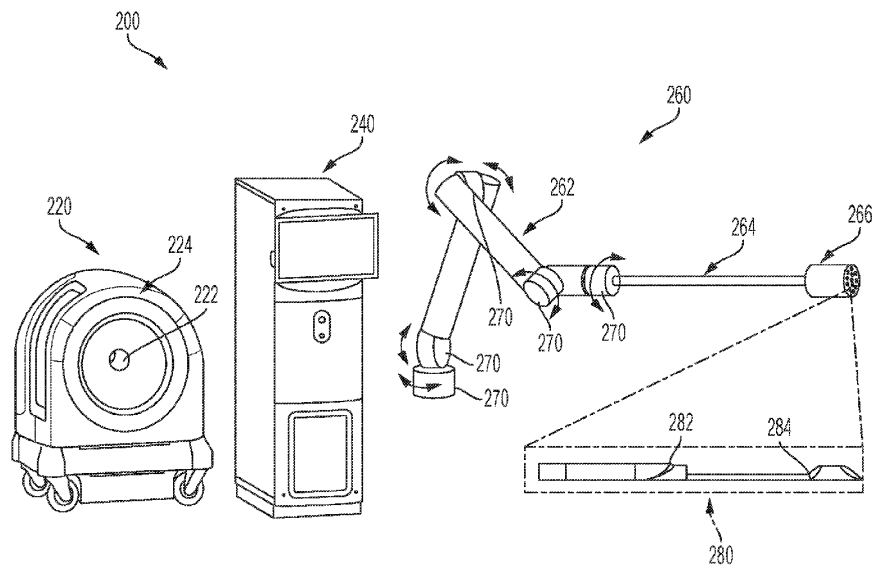


FIG. 2

(57) Abstract: A guided robotic system is disclosed. The guided robotic system includes a magnetic resonance imaging apparatus for real-time imaging of a subject, a computer system for analyzing images in real-time, and a robotic system for guiding a robotic arm based on real-time analysis of the images. A method of using a guided robotic system is also disclosed. The method includes acquiring live magnetic resonance images of a subject, analyzing the live magnetic resonance images to continuously identify a target portion of the subject, guiding a robotic arm towards an identified target portion of the subject based on the live magnetic resonance images, and performing a procedure at the target portion of the subject. The non-limiting procedures using the guided robotic system may include, for example, biopsy, stent insertion.

[Continued on next page]

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, 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))*
- *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))*