

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
30 June 2022 (30.06.2022)



(10) International Publication Number
WO 2022/140406 A1

(51) International Patent Classification:
A61M 25/06 (2006.01)

(21) International Application Number:
PCT/US2021/064642

(22) International Filing Date:
21 December 2021 (21.12.2021)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
63/128,677 21 December 2020 (21.12.2020) US

(71) Applicant: **BARD ACCESS SYSTEMS, INC.** [US/US];
605 North 5600 West, Salt Lake City, UT 84116 (US).

(72) Inventors: **SPATARO, Joe**; 7701 South Summerhill Circle,
Cottonwood Heights, UT 84121 (US). **MCKINNON, Austin, J.**; 5618 Adeline Court, Herriman, UT 84096 (US).

HAYMOND, Bryan; 2016 Pinecrest Canyon Road, Emigration Canyon, UT 84108 (US).

(74) Agent: **WIGHT, Todd, W.**; Rutan & Tucker LLP, 18575 Jamboree Road, 9th Floor, Irvine, CA 92612 (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, 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,

(54) Title: FLUID PATH OPTIMIZATION IN CATHETER INSERTION SYSTEMS

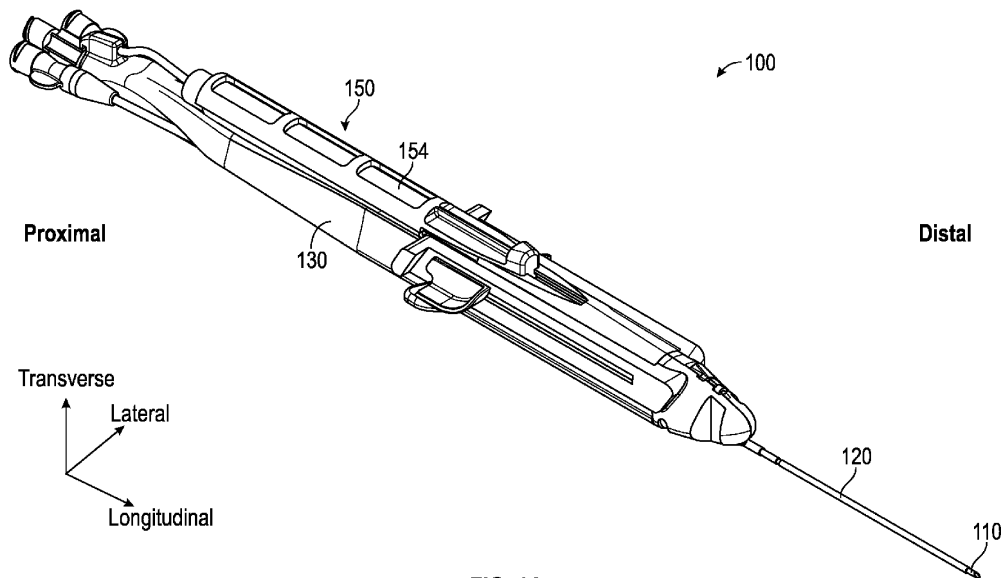


FIG. 1A

(57) Abstract: Elongate blood flash flow paths can be detrimental to the operation of catheter placement systems by delaying the indication time, reducing the efficacy of the vacuum, or increasing the chance of clotting. Embodiments disclosed herein are directed to catheter placement systems with reduced blood flash fluid paths, including blood flash indicators having a proximally slidable syringe barrel and plunger that is fixedly attached to the system housing. By reversing the operation of the blood flash indicator syringe, the clinician maintains the advantages of a visual and tactile feedback while shortening the blood flow path between the needle tip and syringe barrel. Also disclosed is a needle interface structure configured to further shorten the blood flash fluid path.

[Continued on next page]

WO 2022/140406 A1

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:

- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

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))*