

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
01 December 2022 (01.12.2022)



(10) International Publication Number
WO 2022/250833 A1

(51) International Patent Classification:

A61M 25/06 (2006.01) A61M 5/178 (2006.01)
A61M 5/158 (2006.01)

(21) International Application Number:

PCT/US2022/026814

(22) International Filing Date:

28 April 2022 (28.04.2022)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/194,054 27 May 2021 (27.05.2021) US
17/731,119 27 April 2022 (27.04.2022) US

(71) Applicant: **BECTON, DICKINSON AND COMPANY**
[US/US]; 1 Becton Drive, Franklin Lakes, New Jersey
07417 (US).

(72) Inventors: **HARPER, Blake**; 1260 N. 850 E., Bountiful,
Utah 84010 (US). **DIAMOND, Jordan**; 1401 Hollywood
Ave., Salt Lake City, Utah 84105 (US). **TRAN, Huy**; 11878
S. Reeves Lane, Riverton, Utah 84065 (US).

(74) Agent: **BLAIR, Whitney**; Kirton McConkie, 36 South
State Street, Suite 1900, Salt Lake City, Utah 84111 (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, JM, 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,
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,

(54) Title: NEEDLE ASSEMBLY FOR VISUALIZATION OF FLUID MOVEMENT

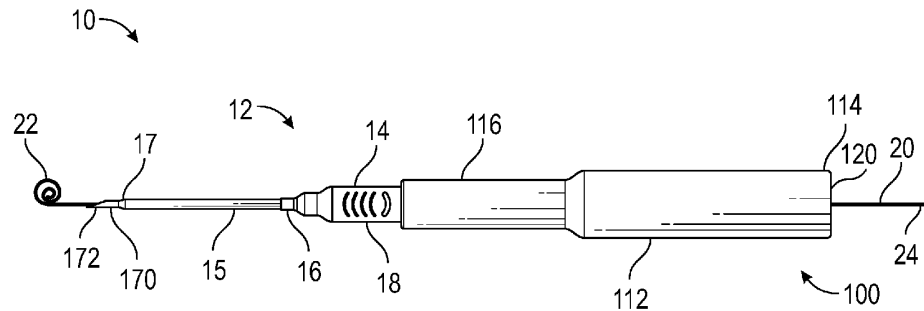


FIG. 1

(57) Abstract: A needle assembly (100) of a catheter system (10) may include one or more features to facilitate flashback confirmation of catheterization while also preventing buildup of positive pressure within a flashback chamber (190) of the needle assembly. The needle assembly may include a plug (150, 250), which may include an aperture (156, 256) for receiving an introducer needle (170). A proximal opening (174) of the introducer needle may be accessible from the proximal end (114) of the needle hub. The plug may include a vent (160, 260) between an outer surface of the plug and an inner surface (123) of the needle hub to prevent the buildup of positive pressure. The plug may include an extended distal end that reduces a volume of the flashback chamber. The plug may include a window (253) in fluid communication with a notch (180) of the introducer needle. Blood may flow from the notch into the flashback chamber with a reduced volume via the window of the plug.

[Continued on next page]

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 applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

Published:

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