

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
06 October 2022 (06.10.2022)



(10) International Publication Number
WO 2022/212649 A1

(51) International Patent Classification:
A61B 18/00 (2006.01)

(21) International Application Number:
PCT/US2022/022752

(22) International Filing Date:
31 March 2022 (31.03.2022)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
63/170,389 02 April 2021 (02.04.2021) US

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

(72) Inventors: **SCHERICH, Megan**; 253 Wilson Avenue S,
Salt Lake City, UT 84115 (US). **HARDING, Weston**,
F.; 2421 N 910 W, Lehi, UT 84043 (US). **HORTIN,**

Justin, G.; 973 Country Lane, Farmington, UT 84025 (US).
BURKHOLZ, Jonathan, Karl; 1971 South Wasatch Drive,
Salt Lake City, UT 84108 (US). **PETERSON, Bart, D.**;
1988 Silver Spur Way, Farmington, UT 84025 (US).

(74) Agent: **QUEEN, Lara, Northrop et al.**; The Webb Law
Firm, One Gateway Center, 420 Ft. Duquesne Blvd., Suite
1200, Pittsburgh, PA 15222 (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,

(54) Title: INSTRUMENT ADVANCEMENT DEVICE HAVING AN ANTI-BUCKLING FEATURE

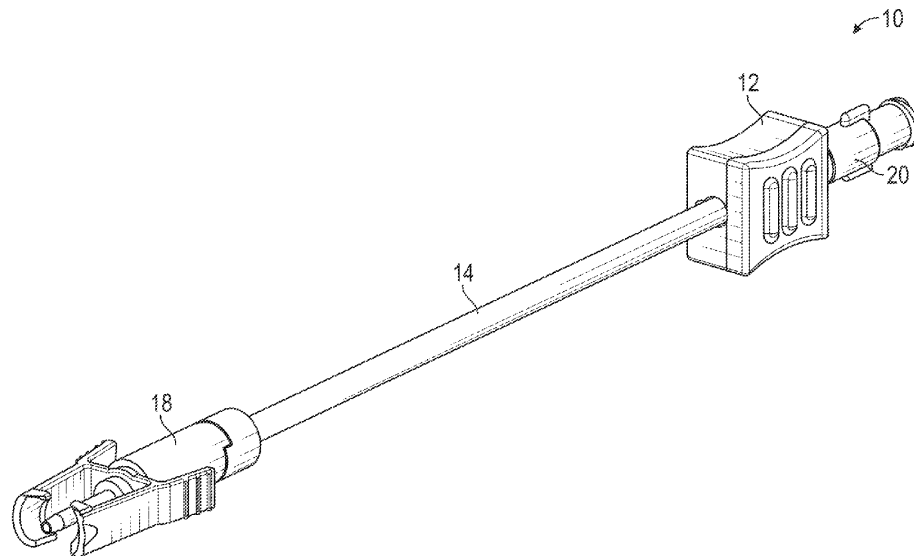


FIG. 1

(57) Abstract: An instrument advancement device may include a housing and an extension tube extending through the housing. A wedge may be disposed within the housing. The wedge may include an arc-shaped channel. A pair of opposing pinch members configured to pinch the extension tube may be disposed within the housing and configured to move along the extension tube. An instrument may extend through the arc-shaped channel. A first end of the instrument may be fixed. In response to moving the housing distally along the extension tube, the pair of opposing pinch members may push the wedge distally. In response to movement of the wedge distally a first distance, a second end of the instrument may be configured to advance distally a second distance. A support element or compressible element may be disposed within a lumen of the extension tube to support the instrument.

[Continued on next page]

WO 2022/212649 A1

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).

Declarations under Rule 4.17:

- *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))*

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))*