

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
21 July 2022 (21.07.2022)



(10) International Publication Number
WO 2022/155024 A1

- (51) International Patent Classification:
F16K 5/06 (2006.01) *F16K 31/60* (2006.01)
- (21) International Application Number:
PCT/US2022/011074
- (22) International Filing Date:
04 January 2022 (04.01.2022)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
63/137,818 15 January 2021 (15.01.2021) US
- (71) Applicant: **SWAGELOK COMPANY** [US/US]; 29500 Solon Road, Solon, OH 44139 (US).
- (72) Inventors: **DIXON, Matthew**; 2923 Commonwealth Drive, Parma, OH 44134 (US). **MAHRAZ, Karim**; 1359 N. Brooks Drive, Willoughby, OH 44094 (US).
- (74) Agent: **GROVER, David, J.**; Calfee, Halter & Griswold LLP, The Calfee Building, 1405 East Sixth St., Cleveland, OH 44114 (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: SPRING RETURN VALVE HANDLE

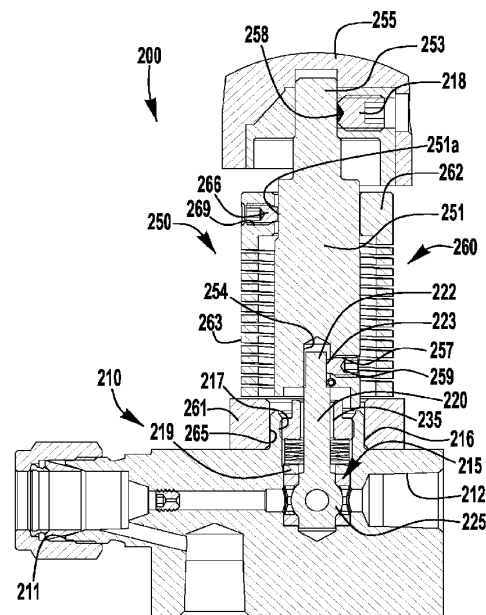


FIG. 2

(57) Abstract: A valve assembly includes a valve body defining an interior cavity extending to a bonnet portion, a valve stem including a valve element retained in the interior cavity of the valve body and an end portion extending beyond the bonnet portion, the valve stem being rotatable between a first limit position and a second limit position, and a spring return handle arrangement. The spring return handle arrangement includes a user graspable valve handle, a stem adapter, and a return spring. The stem adapter includes a first end portion secured to the valve stem and a second end portion secured to the valve handle. The return spring includes a first end portion secured to the valve body, an intermediate spring loaded portion, and a second end portion secured to the stem adapter to apply a torsional load to the stem adapter for returning the valve stem to the first rotational limit position.

[Continued on next page]

WO 2022/155024 A1

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))