



(51) International Patent Classification:

F16K 27/02 (2006.01) *F16L 55/11* (2006.01)
F16K 27/08 (2006.01) *F16K 27/00* (2006.01)
F16J 13/02 (2006.01)

(21) International Application Number:

PCT/US2021/057808

(22) International Filing Date:

03 November 2021 (03.11.2021)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/110,443 06 November 2020 (06.11.2020) US

(71) Applicant: **SWAGELOK COMPANY** [US/US]; 29500
Solon Road, Solon, OH 44139 (US).

(72) Inventors: **GLIME, William, H., III**; 9825 Greenway Trail, Chagrin Falls, OH 44023 (US). **KEEPER, Branden, W.**; 9696 Johnnycake Ridge, Mentor, OH 44060 (US). **MC-COY, James, G.**; 26800 Amhearst Circle, #204, Beachwood, OH 44122 (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: VALVE CAVITY CAP ARRANGEMENTS

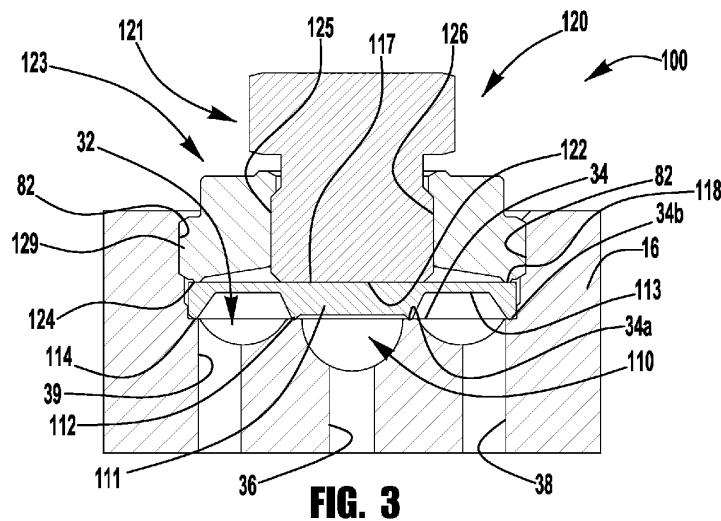


FIG. 3

(57) **Abstract:** A valve cavity cap arrangement (100) including an insert (110) and a threaded cap (120) is provided in combination with a valve body (16) defining a valve cavity (32), a central passage (36), and at least one offset passage (38, 39). The insert is received in the valve cavity and includes an inner annular sealing surface (112) sized to seal against a portion of the recessed surface surrounding the central passage, an outer annular sealing surface (114) sized to seal against an outer periphery of the recessed surface, surrounding the offset passage(s), and a solid web portion (113) extending between the inner and outer annular sealing surfaces. The threaded cap includes an outer threaded portion (125) threadably engaged with an internal threaded portion of the valve cavity, a central end portion (122) configured to apply a first sealing force to the inner annular sealing surface, and an outer end portion configured to apply a second sealing force to the outer annular sealing surface.

[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))