



(43) International Publication Date
13 November 2014 (13.11.2014)

- (51) International Patent Classification:
A61J 1/20 (2006.01) *A61M 5/32* (2006.01)
- (21) International Application Number:
PCT/IL2014/050319
- (22) International Filing Date:
25 March 2014 (25.03.2014)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
226281 9 May 2013 (09.05.2013) IL
- (71) Applicant: **EQUASHIELD MEDICAL LTD.** [IL/IL];
P.o.b. 26, 24959 Tefen Industrial Park (IL).
- (72) Inventor: **KRIHELI, Marino**; 7 Marc Chagall Street,
6967203 Tel Aviv (IL).
- (74) Agents: **LUZZATTO & LUZZATTO** et al.; P.O. Box
5352, 8415202 Beer Sheva (IL).
- (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, DK, DM,
DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,
HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR,
KZ, LA, LC, LK, LR, LS, LT, 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, SM, ST, SV, SY, TH, TJ, TM,

[Continued on next page]

(54) Title: NEEDLE VALVE AND CONNECTORS FOR USE IN LIQUID TRANSFER APPARATUSES

(57) Abstract: The invention is a needle valve and connectors for use in liquid transfer apparatuses. The needle valve of the invention is not the conventional type of needle valve known in the art that comprises a threaded valve stem, which allows very accurate control of the flow through the valve, and that uses elastic materials, such as rubber, as a sealing component. The needle valve of the invention comprises two components: the first component is a hollow needle having a smooth exterior surface and a port at the side of the cylindrical shaft, the second component is a seat made of rigid material e.g. plastic with low friction properties.

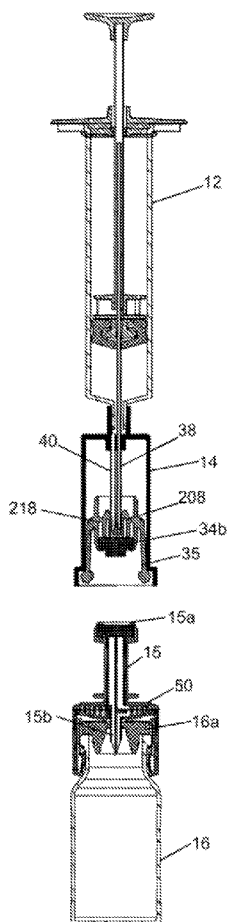


Fig. 10a



WO 2014/181320 A1



TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

(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, 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,

Declarations under Rule 4.17:

— *of inventorship (Rule 4.17(iv))*

Published:

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