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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
23 June 2011 (23.06.2011)

PCT

(10) International Publication Number
WO 2011/073644 A2

(51) International Patent Classification:
A61M 5/178 (2006.01)

(21) International Application Number:
PCT/GB2010/052078

(22) International Filing Date:
13 December 2010 (13.12.2010)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0921939.5 16 December 2009 (16.12.2009) GB
1007934.1 12 May 2010 (12.05.2010) GB

(71) Applicant *(for all designated States except US)*: **STAR SYRINGE LIMITED** [GB/GB]; One Vine Street, London W1J OAH (GB).

(72) Inventor; and

(75) Inventor/Applicant *(for US only)*: **MADIN, Graham, John** [GB/DE]; Kieler Strasse 70, 24247 Mielkendorf (DE).

(74) Agent: **BARKER BRETTELL LLP**; 100 Hagley Road, Edgbaston, Birmingham, West Midlands B16 8QQ (GB).

(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, 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, IS, JP, KE, KG, KM, 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, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, 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, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, 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, ML, MR, NE, SN, TD, TG).

Published:

— *without international search report and to be republished upon receipt of that report (Rule 48.2(g))*

WO 2011/073644 A2

(54) Title: SYRINGES

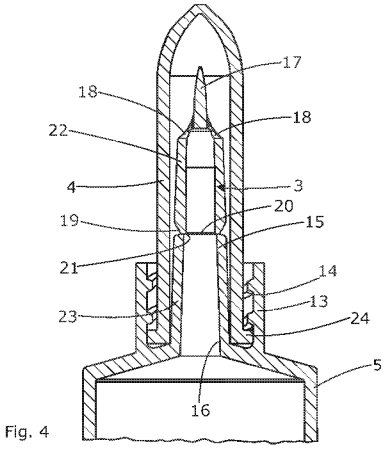


Fig. 4

(57) Abstract: A syringe for delivering medication through an intravenous port, or for providing a combination of medications comprises a barrel (1) having a plunger (2) in slidable and sealing engagement therein, and a piercing member (3) formed integrally with the barrel. The piercing member (3) has a bore (15) in communication with the distal end of the barrel, and a piercing point (17) and an aperture(18) at its distal end(22). The distal end of the barrel is also able to sealingly connect to a transport cap (30), an intravenous port or an injection needle. The distal end (22) of the piercing member (3) is removable and has an external recess (19) and a corresponding internal step 21) to define a separation plane (20) for the distal end(22).The piercing member (3) is used to draw up one or more medications into the barrel(1), and is then removed to enable the transport cap (30) to be attached to seal the contents. For injection, the transport cap(30) is removed and a standard needle attached. For delivery through an intravenous port, the transport cap (30) is removed and the syringe attached to the port. The external recess (19) and internal step (21) enables the distal end (22) to be removed with a minimum of force, and with a clean break, to reduce the risk of plastics particles entering the barrel.