

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
6 March 2008 (06.03.2008)

PCT

(10) International Publication Number
WO 2008/027579 A1

(51) International Patent Classification:
A61M 5/30 (2006.01)

(21) International Application Number:
PCT/US2007/019247

(22) International Filing Date: 31 August 2007 (31.08.2007)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/841,794 1 September 2006 (01.09.2006) US

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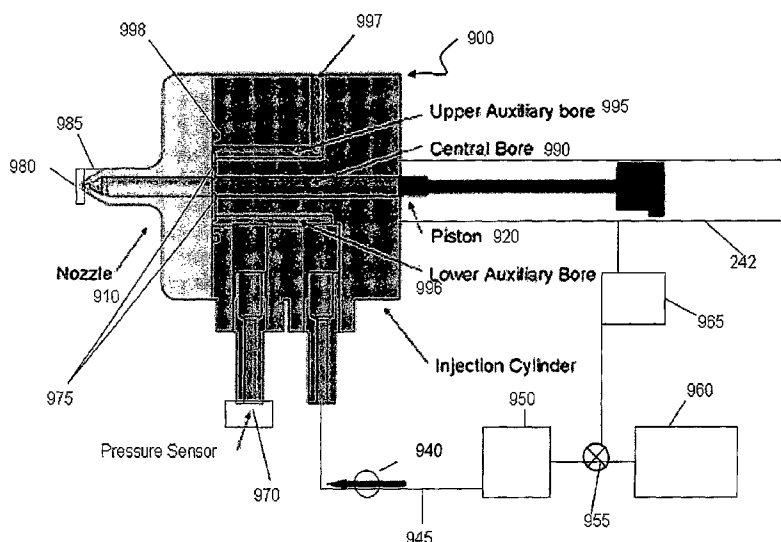
(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, 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, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, 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, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

(54) Title: NEEDLE-FREE INJECTOR DEVICE WITH AUTOLOADING CAPABILITY



(57) Abstract: A needle-free transdermal transport device includes a chamber (900) for holding the substance to be injected, a nozzle (910) in fluid communication with the chamber, and a drug reservoir (950) for storing the substance to be transferred to the chamber. The needle-free transdermal transport device also includes a controllable magnet and coil electromagnetic actuator (242) in communication with the chamber. The actuator receives an electrical input and generates in response a force. The force then causes a needle-free transfer of the substance from the chamber to the biological body. The force is variable responsive to variations in the received input during actuation. The actuator draws the substance from the drug reservoir or alternatively, the substance can be pressurized from the drug reservoir into the chamber by a pressure source.

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