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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
15 December 2011 (15.12.2011)

PCT

(10) International Publication Number
WO 2011/156373 A1

(51) International Patent Classification:
A61M 5/20 (2006.01) *A61M 5/142* (2006.01)

(21) International Application Number:
PCT/US2011/039444

(22) International Filing Date:
7 June 2011 (07.06.2011)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/352,201 7 June 2010 (07.06.2010) US

(71) Applicant *(for all designated States except US)*: **AMGEN INC.** [US/US]; One Amgen Center Drive, Patent Operations M/S 28-2-C, Thousand Oaks, CA 91320-1799 (US).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **HOLT, Mark Dominis** [US/US]; 11607 Blossomwood Court, Moorpark, CA 93021 (US). **CAIRNS, Alexander, Stuart** [CA/US]; 1318 Euclid Ave., Apt. 7, Santa Monica, CA 90404 (US). **ROMACKER, Mathias** [DE/US]; 2539 Renata Ct., Thousand Oaks, CA 91362 (US).

(74) Agent: **CRAANE, Paul, C.**; Marshall, Gerstein & Borun LLP, 233 S. Wacker Drive, 6300 Willis Tower, Chicago, IL 60606-6357 (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, 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:

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

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

WO 2011/156373 A1

(54) Title: DRUG DELIVERY DEVICE

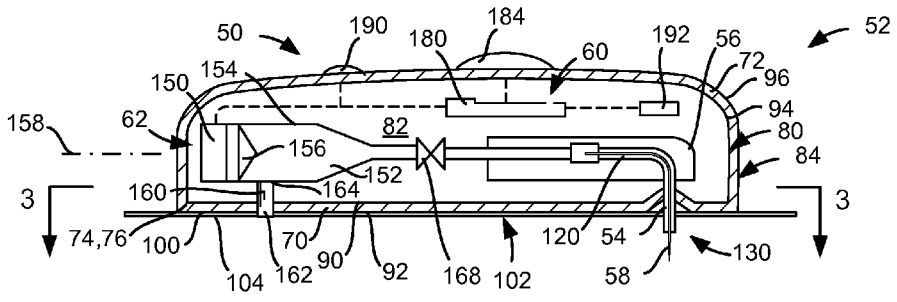


FIG. 2

(57) Abstract: A drug delivery device includes a housing having an interior space, a needle having retracted and deployed states, an injector to move the needle between retracted and deployed states, and a reservoir disposed within the interior space, the reservoir configured to receive a volume of a drug and to be in fluid communication with the needle. The drug delivery device also includes a controller coupled to the injector and the reservoir, and configured to actuate the injector to move the needle from the retracted state to the deployed state only once, and to actuate the reservoir to deliver the volume of the drug to the patient as a single bolus after a preselected time period has elapsed, the controller disposed within the interior space and configured prior to being disposed within the interior space. The delivery device is wearable, disposable, and single-use.