

**(19) World Intellectual Property
Organization**
International Bureau



WIPO | PCT



(10) International Publication Number
WO 2012/154362 A8

(43) International Publication Date
15 November 2012 (15.11.2012)

(51) International Patent Classification:

A61B 17/14 (2006.01) *A61B 10/02* (2006.01)
A61B 17/06 (2006.01)

(21) International Application Number:

PCT/US2012/032846

(22) International Filing Date:

10 April 2012 (10.04.2012)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

61/474,130	11 April 2011 (11.04.2011)	US
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(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, QA, RO, RS, RU, RW, 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, RW, 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))

(48) Date of publication of this corrected version:

20 December 2012

(15) **Information about Correction:**
see Notice of 20 December 2012

(54) Title: DEVICES AND METHODS FOR DELIVERY AND/OR WITHDRAWAL OF FLUIDS AND PRESERVATION OF WITHDRAWN FLUIDS

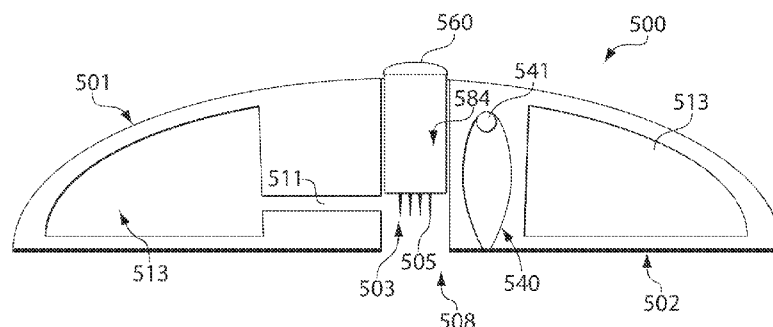


Fig. 8

(57) Abstract: The present invention generally relates to systems and methods for delivering and/or withdrawing a substance or substances such as blood or interstitial fluid, from subjects, e.g., from the skin and/or from beneath the skin. In one aspect, the present invention is generally directed to devices and methods for withdrawing or extracting blood from a subject, e.g., from the skin and/or from beneath the skin, using devices containing a fluid transporter (for example, one or more microneedles), and a storage chamber having an internal pressure less than atmospheric pressure prior to receiving blood. In some cases, the device may be self-contained, and in certain instances, the device can be applied to the skin, and activated to withdraw blood from the subject. The device, or a portion thereof, may then be processed to determine the blood and/or an analyte within the blood, alone or with an external apparatus. For example, blood may be withdrawn from the device, and/or the device may contain sensors or agents able to determine the blood and/or an analyte suspected of being contained in the blood. Other aspects of the present invention are directed at other devices for withdrawing blood (or other bodily fluids, e.g., interstitial fluid), kits involving such devices, methods of making such devices, methods of using such devices, and the like.