

Search history

Search 1: CPC=(A61M5/3145 or A61M5/3202) (Results 2658)
Search 2: FT=(syringe and filter) (Results 74270)
Search 3: 1 and 2 (Results 427)
Search 4: cap and 3 (Results 206)
Search 5: hub and 4 (Results 101)
Search 6: space and 5 (Results 59)
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Search 8: 6 and 7 (Results 42)

1) Family number: 29567014 (US3090383A)

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Title: HYPODERMIC SYRINGES

Abstract: 858,915. Hypodermic syringes. BROOKS, E. R. March, 24, 1959 [March 24, 1958], No. 9275/58. Class 81 (2) A hypodermic syringe. has a form of plug valve mounted in its outlet, an outer conical member being secured to the syringe and a rotatable inner conical member extending through the. smaller end of the outer member and carrying the needle. The inner member 34 carries the needle 36 and has a communicating duct 34b extending to its upper surface where it may be aligned with an aperture 39 in the closure cap 37, mounted on the outer conical member 31. The outer member is moulded or otherwise secured in the end of the syringe body and the plug is rotated to open or close the outlet duct. The two conical parts are resiliently secured together by a spring circlip 35. Modified forms of construction are described.

Classifications:

International (IPC 8-9): A61B5/15 A61M5/28

A61M5/32 (Advanced/Invention);

A61M5/31 A61M5/315 A61M5/34 (Advanced/Non-invention);

A61B5/15 A61M5/28 A61M5/32 (Core/Invention);

A61M5/31 A61M5/315 A61M5/34 (Core/Non-invention)

International (IPC 1-7): A61M5/28 A61M5/31 A61M5/32

CPC: A61B5/15003 A61B5/150221 A61B5/150236 A61B5/150244

A61B5/150251 A61B5/150259 A61B5/150389 A61B5/150503

A61B5/150732 A61B5/153 A61M5/28 A61M5/282 A61M5/284 A61M5/288

A61M5/3145 A61M5/31505 A61M5/31586 A61M5/32 A61M5/3202

A61M2005/3128 A61M2005/31516 A61M2005/341 A61M2205/582

A61M2205/583

European: A61B5/14B A61B5/153 A61B5/15B18B10 A61B5/15B18B2

A61B5/15B20 A61B5/15B2D A61B5/15B8D A61B5/15B8H A61B5/15B8J

A61B5/15B8L A61B5/15B8N A61M5/28 A61M5/32 K61M205/58C

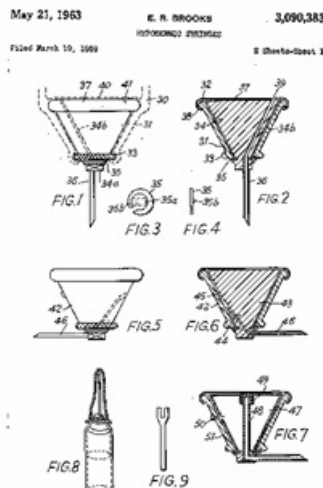
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K61M5/315C3 K61M5/315F2B2 K61M5/31A9 K61M5/31F K61M5/32B

K61M5/34A2D

US: 604/236

PatBase - US3090383_R



Family:

Publication number	Publication date	Application number	Application date
DE1137833 B	19621011	DE1959B052607	19590324
GB858915 A	19610118	GB19580009275	19580324
US3090383 A	19630521	US19590800528	19590319

Priority:

GB19580009275 19580324

Probable Assignee: EGAN RUPERT BROOKES M B CH B E

Assignee(s): (std): BROOKS EGAN R ; EGAN RUPERT BROOKES M B CH B E ; EGAN RUPERT BROOKES

Assignee(s): EGAN RUPERT BROOKES M B CH B ED ; EGAN RUPERT BROOKES MB ; EGAN RUPERT BROOKES M B
Inventor(s): (std): BROOKS EGAN RUPERT ; BROOKS EGAN R

2) Family number: 63315086 (US2015073303A)

PatBase

Title: RETRACTABLE NEEDLE FOR BLOOD GAS SAMPLING

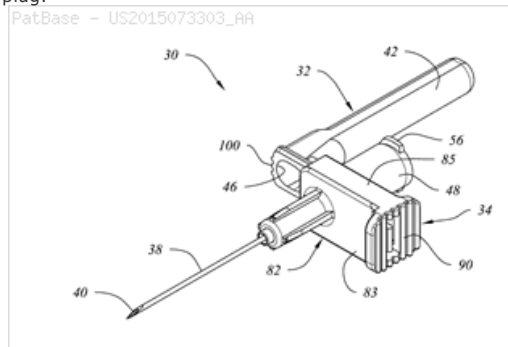
Abstract: A medical device having a frontal attachment and a connector housing having at least a body part of an associated medical apparatus, the frontal attachment slidably engaging the connector housing and having a forwardly projecting, rearwardly biased needle and a needle retraction assembly, and the connector housing having a needle retraction cavity laterally offset from the needle in a first position, the needle retraction cavity being selectively movable relative to the frontal attachment following use to reposition the needle retraction cavity into alignment with the needle to permit retraction. The subject device is desirably specially modified for use in blood gas sampling by the addition of a filter plug.

Classifications:

International (IPC 8-9): A61B5/145 A61B5/15 A61B5/153
A61M5/32 (Advanced/Invention)

CPC: A61B5/153 A61B5/150236 A61B5/150717 A61B5/150244
A61B5/150351 A61B5/150755 A61B5/14542 A61M5/3232 A61M5/3202
A61M2005/3227 A61M2205/6045 A61M2205/7536

US: 1/1 600/576



Family:

Publication number	Publication date	Application number	Application date
US2015073303 AA	20150312	US20140546483	20141118
US9320469 BB	20160426	US20140546483	20141118

Priority:

US20120737263P 20121214 US20130836723P 20130619 US20130020440 20130906
US20130906313P 20131119 US20130091113 20131126 US20140546483 20141118

Probable Assignee: RETRACTABLE TECHNOLOGIES INC

Assignee(s): (std): RETRACTABLE TECHNOLOGIES INC ; SHAW THOMAS J

Inventor(s): (std): SHAW THOMAS J ; ZHU NI ; SMALL MARK

Agent(s): ROBIN L; ROSS BARNES LLP; MONTY L

3) Family number: 34457122 (US2007106208A)

PatBase

Title: DELIVERY OF AGENTS TO TISSUE

Abstract: A system for injecting an injectate into patient includes a first pressurizable container for holding the injectate; a patient interface in fluid connection with the first pressurizable container, the patient interface being adapted to pass the injectate into tissue of the patient; a powered injector in operative connection with the first pressurizable container to pressurize the injectate; a controller system in operative connection with powered injector; and a stereotactic localization frame adapted to be placed in operative connection with the patient interface to assist in controlling localization of the patient interface. A system for processing cells (and/or other injectate components) includes a container and a plunger adapted to be slidably positioned within the container. The system includes at least one inlet port through which a fluid can enter the system and at least one effluent port through which an effluent can exit the system. The plunger section forms a sealing engagement with the inner wall of the container such that rearward motion of the plunger is adapted to draw fluid into the system via the inlet and forward motion of the plunger is adapted to force effluent out of the system via the effluent port.

Classifications:

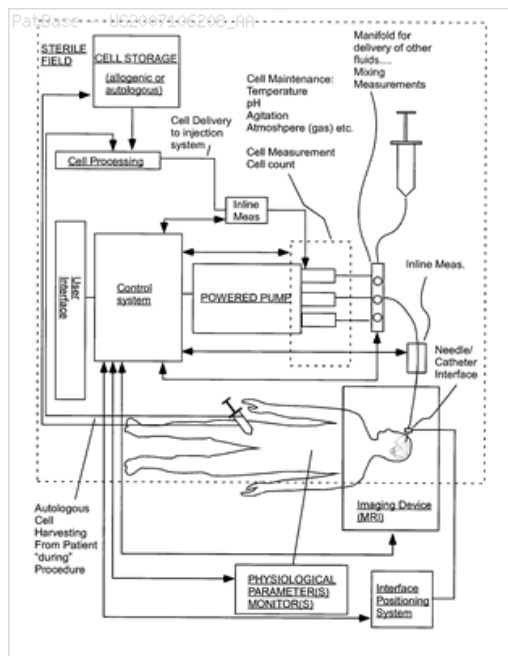
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A61J1/14 A61K35/12 A61M31/00 A61M5/00 A61M5/142 A61M5/168
A61M5/172 A61M5/30 A61M5/31 B01L3/00 B65D1/24 B65D1/36
B65D25/04 B65D57/00 B65D85/00 C12M1/12 C12M1/24 C12M3/00
C12M3/02 C12N5/00 G01N35/10 G06F11/00 (Advanced/Invention);
C12N1/04 G06F19/00 (Advanced/Non-invention);
A01N1/00 A01N1/02 A61M31/00 A61M5/00 A61M5/168 A61M5/30
B65D1/22 B65D1/34 B65D25/04 B65D57/00 B65D85/00 C12M1/12
C12M1/24 C12M3/00 G01N35/10 G06F11/00 (Core/Invention)
CPC: A61M5/3291 A61M5/1452 A61M25/007 A61M25/04 A61M2025/0089
A61M2025/009 A61M2025/0092 A61J1/1443 A61J1/1475 A61M5/3145
A61J1/1456 B01L3/502 B01L2300/044 B01L2300/0681 A61M5/142
A61M5/1723 A61M31/005 G06F19/3468

European: A61M31/00R A61M5/142 A61M5/172B K61M25/00T10C
K61M25/00T40A3 K61M25/00T40A3B K61M25/00T40A4 K61M25/04
K61M5/145B S06F19/34L3

US: 210/117 210/359 210/398 220/500 220/500S 422/100 422/101
422/102 422/103 422/537 435/1.1 435/1.100S 435/297.1 435/297.100S
435/304.1 435/304.100S 435/307.1 435/308.1 604/190 604/190P
604/191 604/191S 604/218 604/406 604/406S 604/407 604/407S
604/411 604/411S 604/416 604/65 604/65P 604/66 604/66P 604/67
604/93.01

JP F-Term: 4C066 4C066/AA09 4C066/BB01 4C066/CC01 4C066/DD12

4C066/EE14 4C066/FF04 4C066/QQ35 4C066/QQ72 4C066/QQ74
4C066/QQ77 4C066/QQ84 4C066/QQ85 4C066/QQ92
JP F-Index: A61M39/24 A61M5/00/320 A61M5/00/330 A61M5/145/500
A61M5/165 A61M5/168/540 A61M5/172/500



Family:

Publication number	Publication date	Application number	Application date
CA2630686 AA	20080526	CA20062630686	20061106
EP1942981 A2	20080716	EP20060836954	20061106
EP1942981 A4	20101006	EP20060836954	20061106
JP2009524442 T2	20090702	JP20080539103T	20061106
US2007106208 AA	20070510	US20060460635	20060728
US2008294096 AA	20081127	US20060092448	20061106
US2011028908 AA	20110203	US20100732250	20100326
US2014163475 AA	20140612	US20130845713	20130318
US7713232 BB	20100511	US20060460635	20060728
US8182444 BB	20120522	US20060092448	20061106
US8414765 BB	20130409	US20100732250	20100326
US9629780 BB	20170425	US20130845713	20130318
WO07053779 A2	20070510	WO2006US43134	20061106
WO07053779 A3	20071108	WO2006US43134	20061106
WO07056247 A2	20070518	WO2006US43133	20061106
WO07056247 A3	20090507	WO2006US43133	20061106

Priority:

US20050734035P 20051104	US20050742224P 20051205	US20060771206P 20060207
US20060460635 20060728	US20060092448 20061106	WO2006US43134 20061106
WO2006US43133 20061106	US20100732250 20100326	US20130845713 20130318

Probable Assignee: BAYER AG

Assignee(s): (std): MEDRAD INC ; RHINEHART EDWARD J ; CEDARHOLM PAGE ; GELBLUM EUGENE A ; HIRSCHMAN ALAN D ; COWAN KEVIN P ; REILLY DAVID M ; FACHER EVAN ; GRIFFITHS DAVID M ; MISHLER DAVID ; PARKS ROBERT ; UBER ARTHUR E ; TROMBLEY FREDERICK W ; TROMBLEY FREDERICK W III ; TROCKI MARK ; UBER ARTHUR E III ; TUCKER BARRY L ; UBER III ARTHUR E ; BARTONY HENRY E JR ; BAYER AG ; BAYER HEALTHCARE LLC

Assignee(s): BAYER MEDICAL CARE INC ; BIOMEDICAL ENTERPRISES INC ; BARTONY HENRY E

Inventor(s): (std): FACHER EVAN ; GRIFFITHS DAVID M ; TUCKER BARRY L ; MISHLER DAVID ; BARTONY HENRY E JR ; PARKS ROBERT ; UBER III ARTHUR E ; BARTONY JR HENRY E ; TROMBLEY III FREDERICK W ; TROMBLEY FREDERICK W III ; RHINEHART EDWARD J ; CEDARHOLM PAGE ; GELBLUM EUGENE A ; TROCKI MARK ; UBER ARTHUR E III ; HIRSCHMAN ALAN D ; COWAN KEVIN P ; REILLY DAVID M ; UBER ARTHUR E ; TROMBLEY FREDERICK W

Inventor(s): UBER ARTHUR EIII ; TROMBLEY FREDERICK WIII ; BARTONY HENRY E ; GELBLUM EUGENE ; RHINEHART EDWARD ; COWAN KEVIN ; HIRSCHMAN ALAN ; UBER ARTHUR ; REILLY DAVID ; TROMBLEY FREDERICK

Agent(s): SMART AND BIGGAR; ZINNECKER ARMIN ET AL; MARUYAMA TOSHIYUKI; GREGORY L BRADLEY, MEDRAD INC; GREGORY L BRADLEY MEDRAD INC; MEDRAD PATENTS AND TRADEMARKS; GREGORY L; HENRY E; DAVID; JAMES R; JOSEPH L

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD MG MK ML MN MR MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Abstract: Therapeutic delivery systems comprising gaseous precursor-filled microspheres comprising a therapeutic are described. Methods for employing such microspheres in therapeutic delivery applications are also provided. Therapeutic delivery systems comprising gaseous precursor-filled liposomes having encapsulated therein a contrast agent or drug are preferred. Methods of and apparatus for preparing such liposomes and methods for employing such liposomes in therapeutic delivery applications are also disclosed.

Classifications:

International (IPC 8-9): A61K41/00 A61K47/48 A61K49/04 A61K49/18 A61K49/22 A61K8/14 A61K9/127 A61K9/14 A61Q19/00 B28B1/54 (Advanced/Invention);

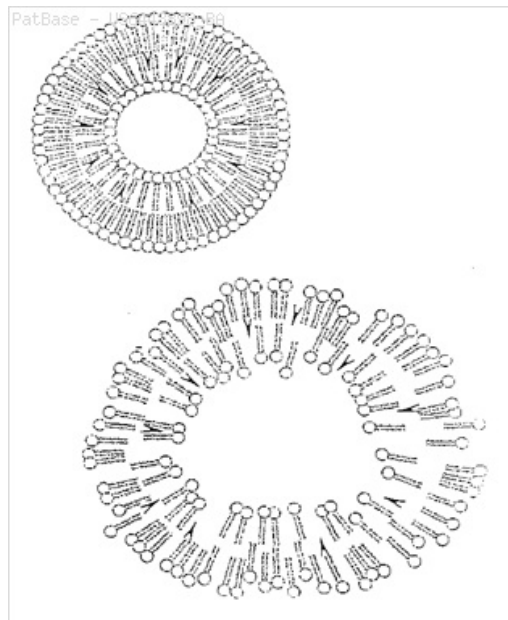
A61M5/31 (Advanced/Non-invention)

International (IPC 1-7): A61B8/00 A61K9/127

CPC: A61K9/127 A61K9/1277 A61K9/1278 A61K41/0028 A61K41/0052 A61K47/6911 A61K47/6925 A61K49/1815 A61K49/22 A61K49/223 A61K49/227 A61M5/3145 Y10S977/904 Y10S977/907

European: A61K41/00M A61K41/00U A61K47/48W6D A61K47/48W8D A61K49/18K12 A61K49/22 A61K49/22P16 A61K49/22P4 A61K9/127 A61K9/127P A61K9/127P2 K61M5/31F

US: 424/450 424/9.51 600/458



Family:

Publication number	Publication date	Application number	Application date
US6443898 BA	20020903	US19950485998	19950607

Priority:

US19890455707 19891222	US19900569828 19900820	US19910716899 19910618
US19910717084 19910618	US19930076250 19930611	US19930160232 19931130
US19930159687 19931130	US19930159674 19931130	US19950485998 19950607

Probable Assignee: CEREVAST MEDICAL INC

Assignee(s): (std): IMARX PHARMACEUTICAL CORP

Assignee(s): IMARX PHARMACEUTICAL CORP ; IMARX THERAPEUTICS INC ; BRISTOL MYERS SQUIBB MEDICAL IMAGING INC ; CEREVAST MEDICAL INC ; CHASE MANHATTAN BANK NA ; CHASE MANHATTAN BANK NA AGENT FOR BANKS AS ; DUPONT CONTRAST IMAGING INC ; DUPONT PHARMACEUTICALS CO

Inventor(s): (std): YELLOWHAIR DAVID ; UNGER EVAN C ; WU GUANLI ; MATSUNAGA TERRY ; RAMASWAMI VARADARAJAN ; FRITZ THOMAS A

5) Family number: 43843137 (US5770222A)

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Title: THERAPEUTIC DRUG DELIVERY SYSTEMS

Abstract: Therapeutic drug delivery systems comprising gas-filled microspheres comprising a therapeutic are described. Methods for employing such microspheres in therapeutic drug delivery applications are also provided. Drug delivery systems comprising gas-filled liposomes having encapsulated therein a drug are preferred. Methods of and apparatus for preparing such liposomes and methods for employing such liposomes in drug delivery applications are also disclosed.

Classifications:

International (IPC 8-9): A61B8/00 A61K31/70 A61K39/395 A61K41/00 A61K47/48 A61K49/18 A61K49/22 A61K8/14 A61K9/127 A61Q19/00 (Advanced/Invention);

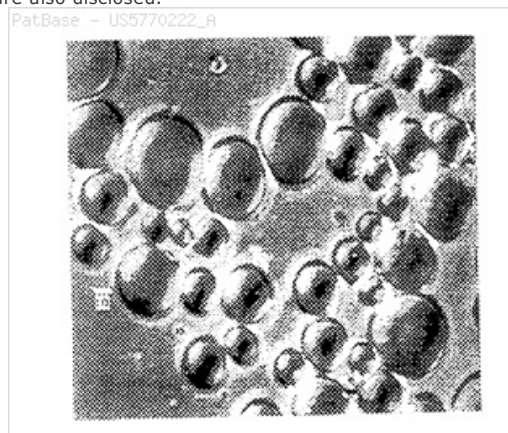
A61M5/31 (Advanced/Non-invention)

International (IPC 1-7): A61K9/127

CPC: Y10S436/829 Y10S977/801 Y10S977/907 Y10S977/915 A61K49/22 A61K9/127 A61K9/1277 A61K9/1278 A61K41/0028 A61K41/0052 A61K47/6925 A61K49/1815 A61K49/223 A61K49/227 A61M5/3145

European: A61K41/00M A61K41/00U A61K47/48W6D A61K47/48W8D A61K49/18K12 A61K49/22 A61K49/22P16 A61K49/22P4 A61K9/127 A61K9/127P A61K9/127P2 K61M5/31F

US: 264/4.1 264/4.3 264/4.6 424/1.21 424/450 424/489 424/9.321 424/9.51 436/829 935/54 977/801 977/907 977/915



Family:

Publication number	Publication date	Application number	Application date
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US5770222 A	19980623	US19950472305	19950607
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Priority:

US19890455707 19891222 US19900569828 19900820 US19910716899 19910618
US19910717084 19910618 US19930076250 19930611 US19950472305 19950607

Probable Assignee: CEREVAST THERAPEUTICS INC

Assignee(s): (std): IMARX PHARMACEUTICAL CORP

Assignee(s): IMARX THERAPEUTICS INC ; SILICON VALLEY BANK ; CEREVAST THERAPEUTICS INC ; IMARX LLC

Inventor(s): (std): YELLOWHAIR DAVID ; UNGER EVAN C ; WU GUANLI ; MATSUNAGA TERRY ; RAMASWAMI VARADARAJAN ; FRITZ THOMAS A

6) Family number: 54913150 (US2015283032A)

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Title: NEEDLE FILTER APPARATUS

Abstract: Disclosed is a disposable needle filter apparatus with a universal truncated syringe-receiving neck to enable the filtration of fluids/solutions aspirated into a needle-bearing syringe. The apparatus includes a needle seal stopper and needle stop to create a substantially airtight chamber to facilitate fluid aspiration through an enclosed filter and into the syringe. In an alternative embodiment, the filter apparatus includes an extended syringe-receiving neck configured to receive a specifically sized syringe/needle combination. In a further embodiment, the receiving neck is constructed as a modular unit to allow for interchangeable necks to accommodate different needle and syringe sizes with different cross-sectional diameters. In a yet further embodiment, the neck is constructed with stepped tapered segments of serially larger cross-sectional diameters to accommodate differently sized syringes. In a still further embodiment, the apparatus includes an accessory needle secured to the apparatus inlet.

Classifications:

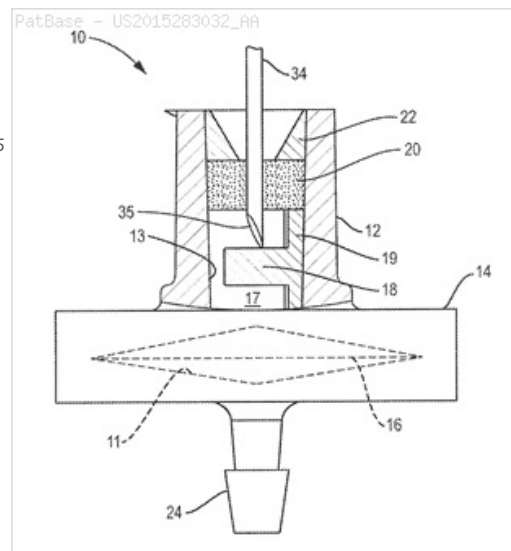
International (IPC 8-9): A61B10/00 A61B10/02 A61B19/00 A61J1/20 A61M5/165 A61M5/178 A61M5/31 A61M5/32

A61M5/38 (Advanced/Invention);

A61M39/10 (Advanced/Non-invention)

CPC: A61J1/2086 A61J1/2048 A61M5/38 A61M2039/1077 A61M5/3202 A61M2205/7545 A61M2205/7527 A61M2205/7536 A61J1/2096 A61M5/165 A61M5/1782 A61M5/3145 A61M5/3148 A61M2005/3114 A61M2039/0241

US: 1/1 604/406



Family:

Publication number	Publication date	Application number	Application date
CN104334215 A	20150204	CN201380026509	20130329
CN104334215 B	20170517	CN201380026509	20130329
CN107638614 A	20180130	CN201710255991	20130329
EP2830683 A1	20150204	EP20130767759	20130329
EP2830683 A4	20160106	EP20130767759	20130329
EP2830683 B1	20180829	EP20130767759	20130329
EP3444000 A1	20190220	EP20180191085	20130329
US2015283032 AA	20151008	US20130853609	20130329
US2018092808 AA	20180405	US20170830907	20171204
US9833382 BB	20171205	US20130853609	20130329
US10568810 BB	20200225	US20170830907	20171204
WO13149175 A1	20131003	WO2013US34653	20130329

Priority:

US20120617077P 20120329 CN201380026509 20130329 EP20130767759 20130329
US20130853609 20130329 WO2013US34653 20130329 US20170830907 20171204

Probable Assignee: SAINT GOBAIN SA

Assignee(s): (std): SAINT GOBAIN PERFORMANCE PLAST ; SAINT GOBAIN PERFORMANCE PLASTICS CORP ; SAINT GOBAIN SA ; ZENPURE AMERICAS INC ; ZENPURE HANGZHOU CO LTD ; ZENPURE AMERICANS INC

Assignee(s): ZENPURE CORP ; ZENPURE HANGZHOU CO

Inventor(s): (std): ANDREWS JACOB ; ADRIAN KENNETH D ; LIN ZHENWU ; RENFREW KENNETH ; ADNAN KENNETH D

Agent(s): GERVASI GEMMA ; ZIMMERMANN AND PARTNER PATENTANWALTE MBB; LORUSSO AND ASSOCIATES; LORUSSO MARK D

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST

7) Family number: 44121160 (US2010010450A)

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Title: RETRACTABLE SYRINGE WITH IMPROVED STEM RING AND NEEDLE INTERCHANGEABILITY

Abstract: A syringe includes a needle assembly at least partially secured within a barrel of the syringe, the needle assembly including a needle stem, a resilient member biasing the needle stem toward a proximal end opening of the barrel, a needle holder connectable to the needle stem during assembly of the syringe and that is further securable to a needle, and a cap that is dimensioned to surround the needle secured to the needle holder and a portion of the needle holder during assembly of the needle holder with the needle stem. In another embodiment, a syringe includes a needle assembly including a section secured within the barrel, the needle assembly including a needle holder, a resilient member biasing the needle holder toward a proximal end opening of the barrel, and a retaining member releasably secured to the needle holder, where the retaining member includes a first material that connects the retaining member to the needle holder and a second material that engages an interior wall section of the barrel, the second material having a hardness or durometer value that is less than that of the first material.

Classifications:

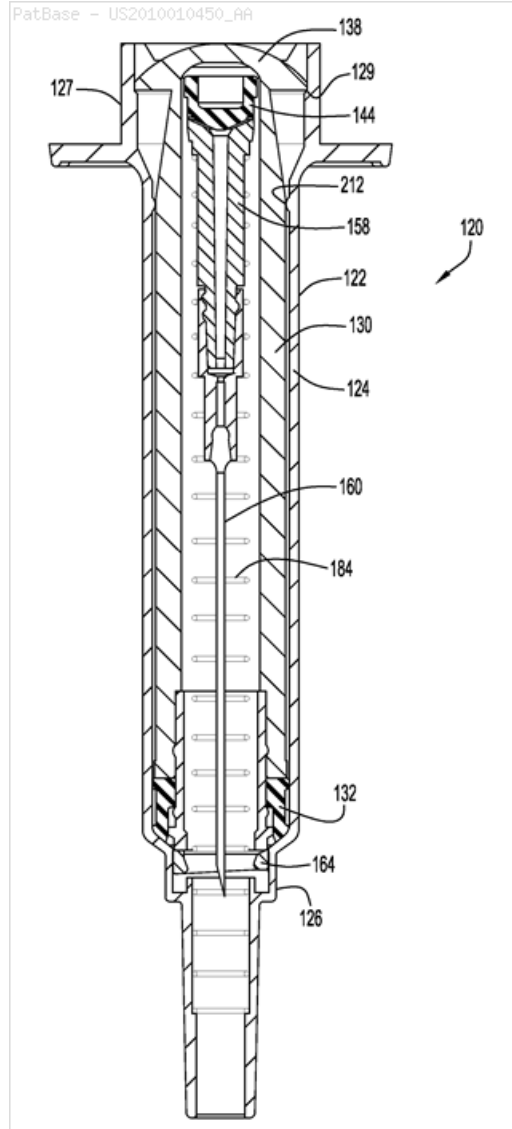
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A61M5/00 A61M5/31 A61M5/315 A61M5/32 A61M5/34 B23P11/00 (Core/Invention)

CPC: Y10T29/49826 A61M5/3234 A61M5/3202 A61M5/502 A61M5/508 A61M2005/3239

European: A61M5/32C2F2F K61M5/32B K61M5/32C2F2F3 K61M5/50B2 K61M5/50D

US: 29/428 29/428S 604/190 604/190P 604/192 604/192S 604/218 604/218S 604/240 604/240S

**Family:**

Publication number	Publication date	Application number	Application date
US2010010450 AA	20100114	US20090482697	20090611
WO09152397 A1	20091217	WO2009US47131	20090612

Priority:

US20080061224P 20080613 US20090482697 20090611

Probable Assignee: MIDLAND MEDICAL DEVICES HOLDINGS LLC

Assignee(s): (std): BOJAN JOHN J ; MIDLAND MEDICAL DEVICES HOLDIN ; RUNFOLA VINCENT

Assignee(s): MIDLAND MEDICAL DEVICES HOLDINGS LLC

Inventor(s): (std): BOJAN JOHN J ; RUNFOLA VINCENT

Agent(s): EDELL SHAPIRO AND FINNAN LLC ; ALDAG ANDREW J ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ

8) Family number: 20682204 (US5480385A)

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Title: SELF RETRACTING MEDICAL NEEDLE APPARATUS AND METHODS

Abstract: Method and apparatus associated with safe retraction of medical needles after use. Embodiments are disclosed for self-retracting needle systems for both blood withdrawal and catheter insertion systems. Two blood withdrawal embodiments are disclosed. Invention manufacture requires only a minimal number and complexity of parts such that a projected manufacturing cost is potentially low enough to permit the apparatus to be cost competitive with contemporary non-self retracting needle systems. Methods for making and assembling each of the disclosed the embodiments is also disclosed. One of the blood withdrawal embodiments can be made with as few as three molded parts. Energy storing retracting mechanisms comprise elastic tubing and vacuum generating piston parts. Triggerable release mechanisms generally comprise two parts or two segments of one part molded about a medical needle. Each release mechanism involves one part or segment which is securely affixed to the needle and one part or segment which is free to slide and rotate about the needle. The blood withdrawal embodiment effectively inhibits regurgitant flow from the needle. The catheter insertion embodiment captures blood effluent from the catheter upon retraction of the needle. In all embodiments, needle retraction is a single handed operation permitting a technicians other hand to be used in wound care. Use of frangible parts permits the apparatus housing to be hermetically sealed and used as a transport container to further reduce apparatus costs.

Classifications:

International (IPC 8-9): A61B A61B5/15 A61M A61M25/00 A61M25/06 A61M5/00 A61M5/158 A61M5/178 A61M5/28 A61M5/31 A61M5/32 A61M5/50 C08G18/00 C08G18/10 C08G18/40 C08G18/79 C08J9/12 C08J9/14 (Advanced/Invention); A61M5/00 A61M5/178 A61M5/31 C08G101/00 (Advanced/Non-invention); A61B5/15 A61M25/00 A61M25/06 A61M5/00 A61M5/14 A61M5/178 A61M5/28 A61M5/32 (Core/Invention); A61M5/31 A61M5/50 (Core/Non-invention); A61B A61M (Subclass/Invention)

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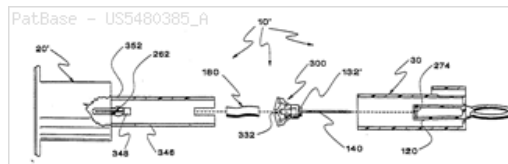
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European: A61B5/14B A61B5/14B12B A61M25/06D2 A61M5/28E2 A61M5/32C2F A61M5/32C2F2F A61M5/32C2H7 K61M25/06D K61M5/31A2 K61M5/31A3D K61M5/31A6C K61M5/32B K61M5/32C1B K61M5/32C2F1D K61M5/32C2F1D2 K61M5/32C2F1D4 K61M5/32C2F2 K61M5/32C2F2F5V K61M5/32C2H1D K61M5/50H

US: 128/763 600/576 604/110 604/164 604/164.11 604/192 604/195 604/198 604/263

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**Family:**

Publication number	Publication date	Application number	Application date
AT310547 E	20051215	AT19980945905T	19980903
AT479457 E	20100915	AT19970913712T	19971023
AU199648537 A1	19960731	AU19960048537	19951221
AU199717565 A1	19970822	AU19970017565	19970130
AU199850837 A1	19980529	AU19980050837	19971023
AU199893046 A1	19990329	AU19980093046	19980903
AU704966 B2	19990513	AU19960048537	19951221
AU720121 B2	20000525	AU19980050837	19971023
AU745765 B2	20020328	AU19980093046	19980903
BRPI9510270 A	19971104	BR1995PI10270	19951221
BRPI9702089 A	19980526	BR1997PI02089	19970130
BRPI9712875 A	20000201	BR1997PI12875	19971023
BRPI9811644 A	20000808	BR1998PI11644	19980903
CA2205831 AA	19970521	CA19952205831	19951221
CA2215036 AA	19970910	CA19972215036	19970130
CA2265908 AA	19990311	CA19972265908	19971023
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CA2302622 C	20070116	CA19982302622	19980903
CN100431493 C	20081112	CN200510003536	19980903
CN1170600 C	20041013	CN19951097281	19951221
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CN1187102 C	20050202	CN19971099417	19971023
CN1232224 C	20051221	CN19988008917	19980903
CN1235557 A	19991117	CN19971099417	19971023
CN1269731 A	20001011	CN19988008917	19980903
CN1799502 A	20060712	CN200510003536	19980903
CZ20000817 A3	20000614	CZ20000000817	19980903

CZ296796 A3	19970115	CZ19960002967	19950331
CZ296796 B6	20060614	CZ20000000817	19980903
DE69530005 D1	20030424	DE19956030005	19951221
DE69530005 T2	20040212	DE19956030005T	19951221
DE69739976 D1	20101014	DE19976039976	19971023
DE69832498 D1	20051229	DE19986032498T	19980903
DE69832498 D1	20051229	DE19986032498	19980903
DE69832498 T2	20060727	DE19986032498T	19980903
DK1011759 T3	20060227	DK19980945905T	19980903
EP0801579 A1	19971022	EP19950944713	19951221
EP0801579 A4	19980819	EP19950944713	19951221
EP0801579 B1	20030319	EP19950944713	19951221
EP0837705 A1	19980429	EP19970904890	19970130
EP1011755 A1	20000628	EP19970913712	19971023
EP1011755 A4	20070425	EP19970913712	19971023
EP1011755 B1	20100901	EP19970913712	19971023
EP1011759 A1	20000628	EP19980945905	19980903
EP1011759 A4	20040324	EP19980945905	19980903
EP1011759 B1	20051123	EP19980945905	19980903
ES2194932 T3	20031201	ES19950944713T	19951221
ES2253829 T3	20060601	ES19980945905T	19980903
HK1029538 A1	20060616	HK20010100298	20010111
HK1029538 B	20060616	HK20010100298	20010111
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HK1089917 A1	20090515	HK20060109676	20060830
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HK1089917 A3	20061215	HK20060109676	20060830
HK1089917 B	20090515	HK20060109676	20060830
IL134980 A0	20010520	IL19980134980	19980903
IL134980 A1	20061031	IL19980134980	19980903
IN01995DE1998 A	20080919	IN1998DE01995	19980713
IN02178DE1997 A	20050909	IN1997DE02178	19970806
IN03116DE1997 A	20090313	IN1997DE03116	19971029
IN214861 B	20080307	IN1997DE02178	19970806
IN232848 B	20090327	IN1998DE01995	19980713
JP11503358 T2	19990326	JP19970527766T	19970130
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JP2002501398 T2	20020115	JP19980521434T	19971023
JP2002514940 T2	20020521	JP19960521676T	19951221
JP2009112845 A2	20090528	JP20090043379	20090226
JP2009112846 A2	20090528	JP20090043395	20090226
JP3768533 B2	20060419	JP19960521676T	19951221
JP4330792 B2	20090916	JP20000510487T	19980903
JP4889755 B2	20120307	JP20090043379	20090226
JP4908534 B2	20120404	JP20090043395	20090226
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KR20010023856 A	20010326	KR20007002536	19980903
MX9704120 A1	19970930	MX19970004120	19951221
MX9707463 A1	19971129	MX19970007463	19970130
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NO326047 B1	20080908	NO20000001236	20000309
NZ302476 A	19981125	NZ19950302476	19951221
NZ328873 A	19990729	NZ19970328873	19970130
NZ334326 A	20000929	NZ19970334326	19971023
NZ503865 A	20030429	NZ19980503865	19980903
TW358743 B	19990521	TW19970116408	19971104
TW390818 B	20000521	TW19980114969	19980909
US5480385 A	19960102	US19950370728	19950110
US5487734 A	19960130	US19950436976	19950508
US5542927 A	19960806	US19950484533	19950607
US5549708 A	19960827	US19950455514	19950531
US5616135 A	19970401	US19950565881	19951201
US5656031 A	19970812	US19960595802	19960202
US5823997 A	19981020	US19970927053	19970910
US5836917 A	19981117	US19960744108	19961105
US5928200 A	19990727	US19980105078	19980625
US5980488 A	19991109	US19980118624	19980717
US6024727 A	20000215	US19970882644	19970625
WO9621483 A1	19960718	WO1995US16665	19951221
WO9727890 A1	19970807	WO1997US01319	19970130
WO9819723 A1	19980514	WO1997US18959	19971023
WO9912592 A1	19990318	WO1998US18532	19980903

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DE19944412639 19940413 DE19944416623 19940511 US19950370728 19950110

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Probable Assignee: COVIDIEN LP

Assignee(s): (std): BAYER AG ; KPR U S LLC ; SAFETY SYRINGES CO ; SPECIALIZED HEALTH PROD INC ; SAFETY SYRINGE CORP ; SAFETY SYRINGE CORP TYCO HEALT ; THORNE GALE H ; TYCO HEALTHCARE GROUP LP ; TYCO HEALTHCARE ; TYCO HEALTHCARE GROUP LP MANSF ; TEICH HEALTH GROUP CORP

Assignee(s): TYCO HEALTHCARE GROUP LP MANSFIELD ; THORNE DAVID L ; THORNE SANDRA A ; SPECIALIZED HEALTH PRODUCTS INC US ; TYCO HEALTHCARE GROUP IP ; THORNE GALE H SPECIALIZED HEALTH PRODUCTS INC ; THORNE GALE H SPECIALIZED HEALTH PRODUCTS I ; OWEN CHARLES V ; NELSON MARK ; SAFETY SYRINGE TYCO HEALTHCARE GROUP LP CORP ; SPECIALIZED HEALTH PRODUCTS ; SPECIALIZED HEALTH PRODUCTS INC ; SAFETY SYRINGE TYCO HEALTHCARE GROUP L CORP ; KPR US ; KPR US LLC ; COVIDIEN LP

Inventor(s): (std): OWEN C V ; THORNE G H ; THORNE D L ; THORNE S A ; THORNE DAVID LYNN ; THORNE DAVID L ; RETTIG RAINER ; VEHLEWALD PETER ; KAPPS MANFRED ; GRUSS PETER ; OWEN CHARLES ; THORNE DAVID ; THORNE SANDRA ; THORNE GALE ; DAVID L THORNE ; THORNE DAVID I ; THORNE A ; OWEN V ; THORNE H ; THORNE L ; NELSON MARK ; THORNE SANDRA A ; OWEN CHARLES V ; THORNE GALE H

Inventor(s): CV OWEN ; DL THORNE ; GH THORNE ; CHARLES V OWENS ; GALE HARRISON THORNE ; DAVID I THORNE ; GALE HARRISON THORNE ; DAVID LYNN THORNE ; D L THORNE ; G H THORNE ; S A THORNE ; C V OWEN ; CHARLES V OWEN ; SANDRA A THORNE ; GALE H THORNE ; MARK NELSON

Agent(s): GRIFFITH HACK ; CASSAN MACLEAN ; RIDOUT AND MAYBEE LLP ; GOWLING WLG CANADA LLP ; BELCHER SIMON JAMES ; BAKER AND MCKENZIE ; KANDA FUJIIHRO ; TOMITA HIROYUKI ; ONO SHINJIRO ; SHAMOTO ICHIO ; KOBAYASHI YASUSHI ; CHIBA AKIO

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9) Family number: 30516205 (US2002042592A)

PatBase

Title: WET/DRY AUTOMATIC INJECTOR ASSEMBLY

Abstract: The present invention is directed to an automatic injection device containing a pre-loaded charge of medicament for automatically self-administering the medicament upon actuation thereof. The automatic injection device includes a housing assembly having an interior chamber, an activation assembly and a needle assembly for dispensing a dissolved medicament to a user. A dry compartment for storing a predetermined dry charge of dry medicament is located within the interior chamber. A wet compartment for storing a predetermined amount of liquid injection solution is also located within the interior chamber. A separation assembly separates the dry compartment from the wet compartment. The separation assembly prevents transfer of the liquid injection solution from the wet compartment to the dry compartment prior to activation of the automatic injection device. One or more medicament support assemblies located within the dry compartment prevent the passage of undissolved medicament from the dry compartment.

Classifications:

International (ipc 8-9): A61J1/05 A61M A61M37/00 A61M5/00 A61M5/165 A61M5/178 A61M5/19 A61M5/20 A61M5/28 A61M5/31 A61M5/315 A61M5/32 A61M5/34 B23P11/00 B28B5/00 B65B1/04 B65B3/04 (Advanced/Invention); A61M5/20 A61M5/28 A61M5/31 A61M5/315 A61M5/32 A61M5/34 (Advanced/Non-invention); A61J1/05 A61M37/00 A61M5/00 A61M5/165 A61M5/20 A61M5/28 A61M5/31 A61M5/32 A61M5/34 B65B1/04 (Core/Invention); A61M5/28 A61M5/31 A61M5/32 (Core/Non-invention); A61M (Subclass/Invention)

International (ipc 1-7): A61J1/05 A61M37/00 A61M5/00 A61M5/178 A61M5/20 A61M5/28 A61M5/31 A61M5/315 A61M5/34

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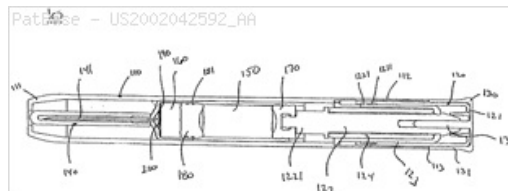
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JP F-Index: A61M5/20 A61M5/20/560 A61M5/28 A61J1/00/313/M A61J1/05/313/M A61M5/20/510 A61M5/28/532 A61M5/31/532 A61M5/31/540 A61M5/20/550 A61M5/16/334/T A61M5/315/510 A61M5/32 A61M5/34 A61J1/00/351/A A61J1/05/351/A A61M5/28/520

Family:

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AT312637 E	20051215	AT20010981845T	20011010
AT363307 E	20070615	AT20010983180T	20011010
AT553803 E	20120515	AT20050725400T	20050310
AU200213462 A1	20020422	AU20020013462	20011010



AU200213462 A5	20020422	AU20020013462	20011010
AU200213463 A1	20020422	AU20020013463	20011010
AU200213463 A5	20020422	AU20020013463	20011010
AU200214628 A1	20020422	AU20020014628	20011010
AU200214628 A5	20020422	AU20020014628	20011010
AU2002213462 AA	20020422	AU20020213462	20011010
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AU2002214628 AA	20020422	AU20020214628	20011010
AU2002332808 AA	20040329	AU20020332808	20020903
AU2002332808 BB	20080424	AU20020332808	20020903
AU2002332808 CA	20081113	AU20020332808	20020903
AU2004285456 AA	20050512	AU20040285456	20041021
AU2004285456 BB	20100527	AU20040285456	20041021
AU2005221705 AA	20050922	AU20050221705	20050310
AU2005221705 BB	20110428	AU20050221705	20050310
AU2010202607 AA	20100715	AU20100202607	20100623
AU2010202607 BB	20130502	AU20100202607	20100623
AU2010202619 AA	20100715	AU20100202619	20100623
AU2010202619 BB	20121129	AU20100202619	20100623
AU2013211487 AA	20130822	AU20130211487	20130731
AU2017201059 AA	20170309	AU20170201059	20170216
AU2018282337 AA	20190117	AU20180282337	20181219
CA2401094 AA	20040303	CA20022401094	20020903
CA2401094 C	20100316	CA20022401094	20020903
CA2425027 AA	20030403	CA20012425027	20011010
CA2425027 C	20110125	CA20012425027	20011010
CA2425028 AA	20030403	CA20012425028	20011010
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CA2425143 AA	20030403	CA20012425143	20011010
CA2425143 C	20100202	CA20012425143	20011010
CA2542204 AA	20060406	CA20042542204	20041021
CA2542204 C	20150505	CA20042542204	20041021
CA2559072 AA	20060908	CA20052559072	20050310
CA2877357 AA	20050512	CA20042877357	20041021
CN100553703 C	20091028	CN200580014629	20050310
CN100574822 C	20091230	CN200480032490	20041021
CN1874812 A	20061206	CN200480032490	20041021
CN1960776 A	20070509	CN200580014629	20050310
CY1112935 T1	20160413	CY20121100564T	20120626
CY1113410 T1	20160622	CY20121100818T	20120910
CY1113891 T1	20160727	CY20121100826T	20120912
CY1117627 T1	20170426	CY20161100382T	20160509
CY1118409 T1	20170628	CY20161101204T	20161123
DE60115931 D1	20060119	DE20016015931T	20011010
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DE60146712 D1	20120802	DE20016046712	20011010
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DK2308530 T3	20160425	DK20040153053T	20041021
EP1324790 A2	20030709	EP20010981845	20011010
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EP1324791 A1	20030709	EP20010983180	20011010
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EP1326662 A2	20030716	EP20010981846	20011010
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EP1393763 A1	20040303	EP20020256070	20020902
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EP1687047 A2	20060809	EP20040795687	20041021
EP1687047 B1	20120620	EP20040795687	20041021
EP1709984 A2	20061011	EP20060008388	20011010

EP1709984 A3	20061018	EP20060008388	20011010
EP1758629 A1	20070307	EP20050725400	20050310
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EP2308529 A2	20110413	EP20110153043	20041021
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IL177944 A0	20061231	IL20050177944	20050310
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IL246440 A0	20160831	IL20040246440	20041021
IL268250 A0	20190926	IL20040268250	20041021
IN00312CN2005 A	20070330	IN2005CN00312	20050303
IN01806CN2006 A	20070608	IN2006CN01806	20060523
IN03771CN2006 A	20070622	IN2006CN03771	20061011
IN218795 B	20080523	IN2005CN00312	20050303
IN251330 B	20120309	IN2006CN01806	20060523
JP2004510553 T2	20040408	JP20020533930T	20011010
JP2004512869 T2	20040430	JP20020533932T	20011010
JP2004517651 T2	20040617	JP20020533931T	20011010
JP2005537106 T2	20051208	JP20040533986T	20020903
JP2006272006 A2	20061012	JP20060191513	20060712
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JP2010162414 A2	20100729	JP20100106654	20100506
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JP4896727 B2	20120314	JP20060536712T	20041021
JP5060709 B2	20121031	JP20040533986T	20020903
JP5183671 B2	20130417	JP20100106654	20100506
JP5491951 B2	20140514	JP20100106652	20100506
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KR20030065493 A	20030806	KR20037005021	20011010
KR20040022707 A	20040316	KR20037005008	20011010
KR20060108683 A	20061018	KR20067009940	20041021
KR20060134121 A	20061227	KR20067019681	20050310
MXPA05002354 A1	20050606	MX2005PA02354	20020903
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TR201615546 T4	20161221	TR20160015546T	20020902
TW200522984 A	20050716	TW20040132179	20041022
TW200533396 A	20051016	TW20050107292	20050310
TWI341214 B	20110501	TW20040132179	20041022
US2002042592 AA	20020411	US20010971768	20011009
US2002049406 AA	20020425	US20010972201	20011009
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US2015018761 AA	20150115	US20130939647	20130711
US2015283327 AA	20151008	US20150743905	20150618
US2016250419 AA	20160901	US20160147046	20160505
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US6656150 BB	20031202	US20010972201	20011009
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US7608055 BB	20091027	US20070698964	20070126
US7621887 BB	20091124	US20030690987	20031023
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US7757370 BB	20100720	US20090431850	20090429
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US8568367 BB	20131029	US20070698937	20070126
WO0230492 A2	20020418	WO2001US42593	20011010
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WO05042067 A3	20051006	WO2004US34556	20041021
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Priority:

US20000238447P	20001010	US20000238448P	20001010	US20000238458	20001010
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Probable Assignee: MERIDIAN MEDICAL TECHNOLOGIES INC

Assignee(s): (std): GRIFFITHS STEVEN M ; HILL ROBERT L ; MERIDIAN MEDICAL TECHNOLOGIES ; WILMONT JOHN G ; MERIDIAN MEDICAL TECHNOLOGY ; MERIDIAN MEDICAL TECHNOLOGIES INC ; MERIDAN MEDICAL TECHNOLOGIES I ; WHITTIER JOHN ; WILMOT JOHN G ; MERIDIAN MEDICAL TECH INC

Assignee(s): MERIDIAN MEDICAL TECHNOLOGIES INC ; MERIDIAN MEDICAL TECHNOLOGIES INC ; MERIDIAN MEDICAL TECHNOLOGIES INC COLUMBIA ; CREDIT SUISSE AG ; CREDIT SUISSE AGENT AS ; CREDIT SUISSE AS AGENT ; FLEET NATIONAL BANK ; GRIFFITHS STEVEN ; MEDICAL TECHNOLOGIES INC

Inventor(s): (std): JOHN G WILMOT ; ROBERT L HILL ; STEVEN GRIFFITHS ; WILMOT JOHN ; HILL ROBERT ; WILMOT G ; HILL L ; GRIFFITHS STEVEN M ; HILL ROBERT L ; GRIFFITHS STEVEN ; WILMOT JOHN G ; WILMONT JOHN G ; JOHN GLYNDWR WILMOT ; GRIFFITHS STEVEN M HILL ROBERT ; WHITTIER JOHN

Inventor(s): GRIFFITHS STEVEN M ELLICOTT CITY ; GRIFFITHS STEVEN M HILL ROBERT L WILMOT JOHN G ; JOHN WHITTIER ; WILMOT JOHN G MOUNT AIRY ; GRIFFITHS STEVEN M ELLIOTT CITY ; HILL ROBERT L ABINGDON ; GRIFFITHS STEVEN ELLICOTT CITY ; STEVEN M GRIFFITHS ; JOHN G WILMONT ; GREFFITHS STEVEN

Agent(s): PHILLIPS ORMONDE FITZPATRICK; C BRIAN BARLOW AND ASSOCIATES; RIDOUT AND MAYBEE LLP;

GOWAN INTELLECTUAL PROPERTY; OSLER HOSKIN AND HARCOURT LLP; SMART AND BIGGAR; KOHLER SCHMID MOEBUS PATENTANWAELTE PARTNERSCHAFTSGESELLSCHAFT MBB; KRAUS AND WEISERT PATENTANWAELTE PARTGMBB; FREEMAN AVI; BECK GREENER; JONES DAY; PFIZER; DE ELZABURU ALBERTO; CARPINTERO MARIO; SANFORD TCOLB AND CO; DR SHLOMO COHEN AND CO; NAZLI TUGBA KORKUT OEZSOY; MUESERREF AKYOL; TUMA GARRY J; GARRY J; STEPHANIE J
 AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NA NE NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SM SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

Designated states:

10) Family number: 41911241 (US2008140007A)

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Title: DRUG DELIVERY DEVICE AND METHODOLOGY

Abstract: Drug delivery devices adapted to receive liquid medication to fill a reservoir, utilize sliding through valves that are closed except when driven by force of liquid medication pushed by a plunger to an open position to feed the medication via needle to a patient or via a connection to an IV port. The devices have multiple seals and automatically close up when pressure on the plunger is released. The methodology is also included.

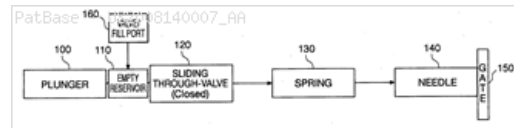
Classifications:

International (IPC 8-9): A61M5/20 (Advanced/Invention);
 A61M5/20 (Core/Invention)

CPC: A61M5/28 A61M5/31511 A61M5/3202 A61M5/3234 A61M2005/3104
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European: A61M5/28 K61M5/315B1E K61M5/315C K61M5/31A3C
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US2008140007 AA	20080612	US20060637275	20061211
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Probable Assignee: GLYNNTECH INC

Assignee(s): (std): GLYNNTECH INC ; KENERGY SCIENT INC ; GLYNN KENNETH P

Assignee(s): KENERGY SCIENTIFIC INC ; SPEECHSWITCH INC

Inventor(s): (std): GLYNN KENNETH P

Agent(s): KENNETH P GLYNN; DEIRDA M; KENNETH P