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[EPODOC: SS 8] ..fi EPODOC

Database: EPODOC

[EPODOC: SS 8] (apparatus or device)and(connect+ or coupl+)and(medic+)and(fluid+)and(line+)and(inject+)

Results in EPODOC **73**

[SS 9] ..v

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[SS 9] ..li

1/73 © EPODOC / EPO

PN - US2018050187 A1 20180222

PR - DE201510205517 20150326; WO2016EP55024 20160309

AP - US201615561152 20160309

DT - **

CCI - A61M39/10 ; A61M39/22 ; F16K11/0853 ; F16K15/147

CUI - A61M39/225

CUA - A61M39/26 ; A61M2039/229

PA - BRAUN MELSUNGEN AG [DE]

TI - **MEDICAL FLUID** CONTROL **DEVICE** FOR A **MEDICAL FLUID LINE** SYSTEM

AB - A **medical fluid** control **device** for a **medical fluid line** system includes a **fluid** flow housing with at least one **connection** port for **connecting** to a further functional

component of the **fluid line** system and which has an **injection** port with an openable closure element, and also having an adjustment member which is mounted movably in the **fluid** flow housing and which has flow channel sections which, depending on an adjustment position of the adjustment member, can be moved toward the at least one **connection** port and/or the **injection** port for a **fluid** throughflow. Assigned to at least one flow channel section of the adjustment member and/or to the **injection** port is at least one mechanical flow acceleration mechanism which assists with inside flushing of the **injection** port during a **fluid** throughflow.

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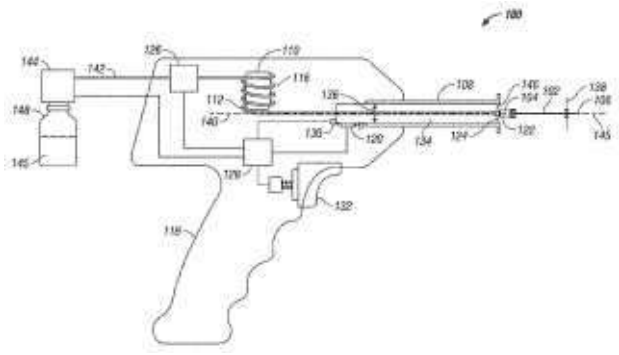


PN - US2018028754 A1 20180201

PR - US201715718888 20170928; US201514679756 20150406; US201113298742 20111117; US20080276637 20081124; US20080078674P 20080707

AP - US201715718888 20170928

DT - **

CCI - A61M5/172 ; A61M5/1785 ; A61M5/2053 ; A61M5/32 ; A61M5/46 ; A61M5/484

CUI - A61M5/284

CCA - A61M5/16886 ; A61M2202/049 ; A61M2205/3334 ; A61M2206/20

PA - GABRIEL INST INC [US]

TI - Delivery system for **injections** throughout zone of body

AB - A dispensing **device** which disperses **medicate** through a needle across a zone within a body. The **device** includes a needle which is, during use, becomes encapsulated within a tubular needle-receiving member, a reservoir in **fluid** communication with the needle, positioned within the housing, and in communication with the needle, a second reservoir, a reservoir- **connecting** conduit in communication with the reservoir, a **fluid** drive in communication with the **fluid** in the second reservoir and in

communication with the reservoir- **connecting** conduit, and a **linear** drive attached to the needle or to the needle-receiving member. The **fluid** drive impel **fluids** from the second reservoir to the reservoir-**connecting** conduit and thus drives the therapeutic agent from the reservoir during the **linear** displacement of the needle towards the housing. **Fluid** communication from the therapeutic agent reservoir to the needle is maintained by the tubing during operation of the **linear** drive.

3/73 © EPODOC / EPO

PN - CN107198799 A 20170926

PR - DE201610104937 20160317

AP - CN2017175001 20170210

DT - I

CCI - A61M39/10 ; A61M39/1011

CUI - A61M5/1413 ; A61M5/142

CCA - A61M2039/1027 ; A61M2039/1044 ; A61M2205/6018 ; A61M2205/6027

CUA - A61M2205/11 ; A61M2205/12 ; A61M2205/18 ; A61M2205/502

PA - ULRICH GMBH & CO KG

TI - **CONNECTING DEVICE**, **INJECTION DEVICE** FOR **INJECTING** A **MEDICAL** LIQUID, AND METHOD FOR OPERATING SUCH AN **INJECTION DEVICE**

AB - A **connecting** system for **connecting** a **medical** tubular **line** to a **medical fluid** transfer system, the tubular **line** including a plug-in component with a first **fluid** channel and the **fluid** transfer system including a **coupling** component with a second **fluid** channel. The

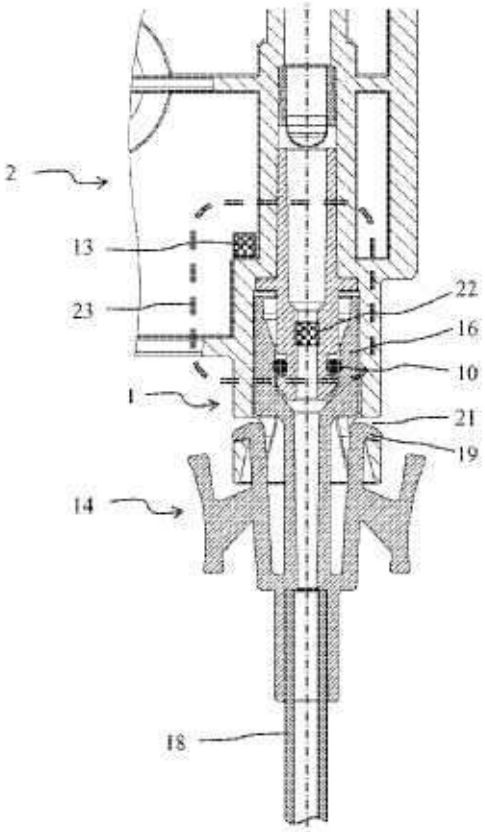


Fig. 3

plug-in component can engage in the **coupling** component to establish a passageway for a **medical fluid**, which passageway **connects** the **fluid** channels to one another. By disposing a first passive transponder in the plug-in component and a second passive transponder in the **coupling** component at a distance below a predefined threshold value relative to one another, communication of a read/write unit with both transponders via a single antenna is made possible when the plug-in component is engaged in the **coupling** component so that identification data for the identification of the tubular **line** and the **fluid** transfer system stored in the transponders can be read by a read/write unit via a single antenna.

4/73 © EPODOC / EPO

PN - **CN107041974** A 20170815

PR - CN20171129152 20170306

AP - CN20171129152 20170306

DT - I

CNOI - **A61M1/0072**

PA - WUXI KANGTEJIA HEALTH TECH CO LTD

TI - Multifunctional body **fluid** collector

AB - The invention provides a multifunctional body **fluid** collector comprising a diversion pipe and a **fluid** storage **device**. The front end of the diversion pipe is provided with a collection end head; the back end of the diversion pipe is **connected** with a **fluid** storage **device**; a tee-joint structure member is arranged in any position of the diversion pipe; any two ends of the tee-joint structure member **connect** the diversion pipe; the rest end of the tee-joint structure member works as an introduction end **connected** with an external **device**; the **fluid** storage **device** is a hard cubic or cylindrical plastic bottle; scales **lines** and a color card are arranged on the side surface of the plastic bottle; a scavenge port is arranged on the bottom of the plastic bottle; and the scavenge port is provided with a lock structure member. With the tee-joint structure on the multifunctional body **fluid** collector, sampling or **medicine injection** can be facilitated; the storage **device** is achieved by a hard plastic bottle and equipped with the scavenge port, and deformation and overspill can be avoided; with the scale **lines** and the color

card mounted on the storage **device**, the volume can be accurately calculated and data can be more objective; and **fluid** color can be compared and observed, so a patient body condition can be learnt.

5/73 © EPODOC / EPO

PN - KR101719456B B1 20170323

PR - KR20160080036 20160627

AP - KR20160080036 20160627

DT - I

CT - || STSE (B1)
JP2006002457 A 20060105 [ ] (TOTO DENKI KOGYO KK);
KR101622880B B1 20160519 [ ] (JEON KI PYO [KR]);
KR100797846B B1 20080124 [ ] (SEJONG INDUSTRY DEV CO LTD [KR]);
JP2005113523 A 20050428 [ ] (TOTO DENKI KOGYO KK)

PA - JEON KI PYO [KR]

TI - GROUTING **APPARATUS** HAVING FLOWAGE ADJUSTING DISTRIBUTOR FOR CONTROLLING CONCENTRATION OF CHEMICAL **FLUID**

AB - The present invention relates to a grouting **device** having a flow rate adjusting distributor. A **medicinal fluid line**, through which **medicinal fluid** flows for grouting is communicated to be **connected** on the upstream side. On the downstream side, a **medicinal fluid line connection** pipe into which an **injection line** is communicated to be **connected**, and on the upstream side, a diluted solution through which the diluted solution flows, are communicated to be **connected**. Furthermore, a diluted solution **line connection** pipe, communicated with a U-turn **line**, is provided on the downstream side, and at least one mixing tube is communicated to be installed for supplying the diluted solution from the diluted solution **line connection** pipe to the **medicinal fluid line connection** pipe, and separately has an opening-controlled valve.

6/73 © EPODOC / EPO

PN - CN206002968U U 20170308

PR - CN20162405927U 20160506

AP - CN20162405927U 20160506

DT - I

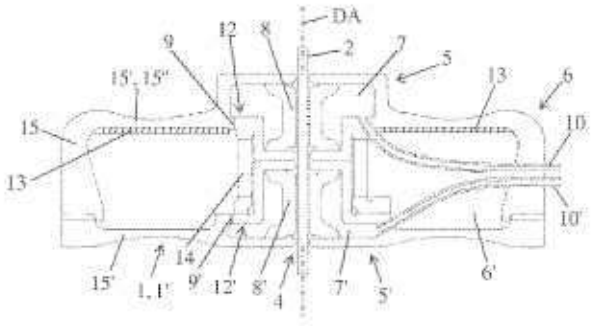
PA - LIAOHE PETROLEUM EXPLOR BUREAU

TI - Accent drives a dose flow automatic control **device**

AB - The utility model relates to an oil field is transferred and is driven profile control job site **medicament injection** technical field, in particular to accent drives a dose flow automatic control **device**. The **device**'s flow distributor is **connected** with automatic control system, is **connected** with the flowmeter on the pipeline of flow distributor front end, and flowmeter passing signal **line** is **connected** with automatic control system's current -limiting panel, and current -limiting panel and flowmeter all are **connected** with the switch board. The utility model discloses a combining together flow measurement and automatic control, can carrying out the real -time adjustment of automation according to the flow setting value, guarantee the accuracy, even, stable of **fluid injection** rate, the at utmost is guaranteed to transfer and is driven a

dose **injection** rate and reach the **injection** allocation, and operating personnel need not frequently to adjust flow distributor, has reduced intensity of labour.

7/73 © EPODOC / EPO



PN - **WO2017089711** A1 20170601

PR - FR20150061373 20151125

AP - WO2016FR53078 20161124

DT - **

CT - |EP| ISR (A1)
EP2875792 A1 20150527
[A] (BIOSENSE WEBSTER ISRAEL LTD [IL])
[A] 1-28,30
* paragraphs [0052] - [0061]; figures 7,8 *;
US2015297203 A1 20151022
[A] (SOHN ZEV [IL], et al)
[A] 1-28,30
* paragraphs [0149] - [0167]; figures 11A-11H *

CCI - **A61M25/0113** ; **A61M25/0116**

CCA - **A61B1/00147** ; **A61B2017/00544** ; **A61B2034/301**

PA - UNIV DE STRASBOURG (ETABLISSEMENT PUBLIC NAT A CARACTERE SCIENT CULTUREL ET PROFESSIONNEL) [FR]; CENTRE NAT DE LA RECH SCIENT (ETABLISSEMENT PUBLIC NAT A CARACTERE SCIENT ET TECHNOLOGIQUE) [FR]; INST HOSPITALO-UNIVERSITAIRE DE CHIRURGIE MINI-INVASIVE GUIDEE PAR L'IMAGE (FONDATION DE COOP SCIENT [FR]; INST NAT DES SCIENCES APPLIQUEES(ETABLISSEMENT PUBLIC NAT A CARACTERE SCIENT CULTUREL ET PROFESSION [FR]

TI - PNEUMATIC **DEVICE** FOR HOLDING AND MOVING AN ELONGATE OBJECT, AND **MEDICAL** SYSTEM INCORPORATING SUCH A **DEVICE**

AB - The present invention relates to a pneumatic **device** for holding

and moving an elongate object, comprising an annular hollow body through which the object passes and which is composed of two end parts forming jaws and a median segment **connecting** the two jaws to each other, with ease of movement of one with respect to the other under the effect of a controlled deformation of at least one portion of said median segment. **Device** (1) characterized in that the various parts (5, 5', 6) of the hollow body (1') define respective chambers (7, 7', 6'), in that the jaws (5, 5') have elastically deformable internal membranes (8, 8'), in that the chambers (7, 7') of the two end parts (5, 5') are in **fluidic** communication with the chamber (6') of the median segment (6), in each case by way of at least one respective calibrated flow means (9, 9'), the **injection** of pressurized gaseous **fluid** being effected by way of a single feed **line** (10, 10').

8/73 © EPODOC / EPO

PN - **CN205672344U** U 20161109

PR - CN20162400213U 20160506

AP - CN20162400213U 20160506

DT - I

PA - NANYANGMEDICALCOLLEGE

TI - Gastroenterology is with **device** of dosing

AB - The utility model relates to a gastroenterology is with **device** of dosing belongs to the gastroenterology **medical** instrument field, gastroenterology is with **device** of dosing include mixing arrangement, proportioning **device**, spout the **medicine device**, mixing arrangement includes agitator tank, water **injection** pipe, drag hook, agitator, buffer tank, electrothermal tube, proportioning **device** includes micropump, catheter, quantitative case, choke valve, air duct, gasbag, baffle, fixed band, magic subsides, transfer **line**, pipe box, it spouts the **medicine** mouth, inserts the component and spout **medicine** mouth, intercommunication groove, annular guiding gutter, arc portion including inserting component, **connecting** piece, drug spraying pipe, **connecting** pipe, pipeline to spout the **medicine device**, the terminal fixed **connection** of **connecting** piece

and transfer **line**, **connecting** piece cover establish in inserting the component and through the mounting with insert component fixed mounting, **medicine** and the enough misce benes of hydroenergy can not produce the friction with patient's bottleneck throat when the transfer **line** removes, can not influence the formation and the flow of normal body **fluid** digestive juice, and the liquid **medicine** is absorbed by traumatism surface more easily.

9/73 © EPODOC / EPO

PN - KR20160038885 A 20160407

PNFP - KR101739368B B1 20170608

PR - KR20160032055 20160317

AP - KR20160032055 20160317

DT - I

PA - (A)
LEE WOO SUK [KR]

TI - (A)
MEDICAL FLUID INJECTOR HAVING MULTI-TYPE FLOW RATE CONTROLLING **APPARATUS**
- (B1)
Medical Fluid Injector Having Multi-Type Flow Rate Controlling **Apparatus**

AB - (A)
The present invention provides a **medical fluid injector** comprising: a first transfer **line connected** to a **medical fluid** outlet **line** by being branched from a **medical fluid** inlet **line**; a control knob which can be rotatably control; a second transfer **line** which is branched from the **medical fluid** inlet **line**, and where each tube capable of elastic deformation is placed in the different height outer on circumference one side of the control knob; a support member where tubes between the control knobs are placed and arranged, and which supports the tubes; a joining **line** which supplies the **medical fluid** from the second transfer **line** to the outlet **line**; a bolus bag which is provided on the joining **line**, and stores the **medical fluid** introduced from the second transfer **line**; and a pipe **line** opening and closing means which selectively pressurizes or depressurizes the tubes with respect to the support member along angle where the control knob are rotated. The **medical fluid injector** can control time filling the **medical fluid** from the second transfer **line** in the bolus bag.

10/73 © EPODOC / EPO

PN - WO2016150707 A1 20160929

PR - DE201510205517 20150326

AP - WO2016EP55024 20160309

DT - **

CT - |EP| ISR (A1)
WO2014049810 A1 20140403 [X] (TERUMO CORP [JP])
[X] 1-5
* figures 1-8b *
* the whole document *;
EP0410898 A2 19910130 [A] (TERUMO CORP [JP])
[A] 1-5

* page 4, line 2 - line 18; figures 1-4 *;
EP2808586 A1 20141203 [A] (ELCAM MEDICAL AGRICULTURAL COOPERATIVE ASS LTD [IL])
[A] 1-5
* paragraph [0077]; figures 1-60 *
* the whole document *;
WO2007084214 A1 20070726 [A] (SMITHS MEDICAL ASD INC [US], et al)
[A] 1-5
* the whole document *;
WO2013146753 A1 20131003 [I] (TERUMO CORP [JP])
[I] 1-5
* the whole document *

CCI - A61M39/10 ; A61M39/22 ; F16K11/0853 ; F16K15/147

CUI - A61M39/225

CUA - A61M39/26 ; A61M2039/229

PA - BRAUN MELSUNGEN AG [DE]

TI - **MEDICAL FLUID** CONTROL **DEVICE** FOR A **MEDICAL FLUID LINE** SYSTEM

AB - The invention relates to a **medical fluid** control **device**, comprising a **fluid** flow housing which is provided with at least one **connection** port for **connection** to a further functional component of the **fluid line** system, and which comprises an **injection** port which is provided with an openable closure element as well as with an adjustment member that is movably mounted in the **fluid** flow housing and comprises flow channel sections which, depending on an adjustment position of the adjustment member, can be delivered to the at least one **connection** port and/or the **injection** port for a **fluid** throughflow. According to the invention, at least one flow channel section of the adjustment member and/or the **injection** port is assigned at least one mechanical flow acceleration means, which supports an internal rinsing of the **injection** port during a **fluid** throughflow. Suitable for application in **medical** infusion systems

11/73 © EPODOC / EPO

PN - US2016058995 A1 20160303

PR - US201414888298 20140429; US201361818056P 20130501; WO2014US35892 20140429

AP - US201414888298 20140429

DT - **

CT - || R141 (A1)
US6390130 B1 20020521 [ ] (GUALA GIANNI [IT]);
US2008058720 A1 20080306 [ ] (SPOHN MICHAEL A [US], et al);
US5989240 A 19991123 [ ] (STROWE ROBERT J [US]);
US5289849 A 19940301 [ ] (PARADIS JOSEPH R [US]);
US2007219480 A1 20070920 [

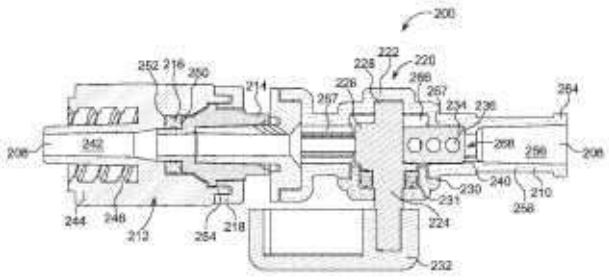


FIG. 5D

] (KAMEN DEAN [US], et al); US2005217731 A1 20051006 [ ] (ABE KOICHI [JP]); US7824393 B2 20101102 [ ] (FANGROW THOMAS F [US]); US2004006330 A1 20040108 [ ] (FANGROW THOMAS F [US])

CCI - A61M5/16827 ; A61M39/24

CCA - A61M5/14216 ; A61M2039/1077 ; A61M2039/226 ; A61M2039/242 ; A61M2039/2466

PA - BAYER MEDICAL CARE INC [US]

TI - **FLUID** PATH SET BOLUS CONTROL **DEVICE**

AB - A bolus control **device** for use with an **injection device**, the bolus control **device** including a valve body having a proximal end opposite a distal end. The valve body defines a **fluid** channel therethrough to allow a passage of **medical fluid** from the proximal end to the distal end. A **connector** is provided at the proximal end and configured for **connecting** to a **fluid** inlet **line**. A **connector** subassembly is provided at the distal end and configured for **connecting** to a **fluid** outlet **line**. A compressible check valve is disposed within the **fluid** channel, such that the compressible check valve is adjustable to control a cracking pressure at which the compressible check valve closes.

12/73 © EPODOC / EPO

PN - KR20150130757 A 20151124

PR - KR20140057738 20140514

AP - KR20140057738 20140514

DT - I

CNOI - A61M5/168 ; A61J1/14 ; B01F5/06

PA - MAS FOR U CO LTD [KR]

TI - MIXING BUSTING **DEVICE INJECTION** WITH CARBON DIOXIDE GAS

AB - The present invention relates to a mixing-promoting **device** for an intravenous **fluid** and gas. The mixing-promoting **device** promotes mixing process by mixing **medical** carbonic acid gas and intravenous **fluid**, which are used in various procedures such as operations or liposuction, in a single **device** and then allowing the **fluid** and the gas to be mixed uniformly while being supplied through a **line**. To this end, the **device** is installed near a needle which is inserted on a surgical area, and the mixing-promoting **device** for the intravenous **fluid** and gas comprises a mesh filter installed therein. According to the present invention, provided is the mixing-promoting **device** for the intravenous **fluid** and gas, which comprises: a main body of which one side thereof is **coupled** with the needle; a valve **coupled** to one side and another side of the main body; a storage tube **coupled** to the another side of the valve and allowing the intravenous **fluid** and gas to flow by being mixed therein; and a mesh filter inserted into a **coupling** region of the needle and the valve to finely split the intravenous **fluid** and gas into bubbles.

13/73 © EPODOC / EPO

PN - US2015305982 A1 20151029

PR - US201514796448 20150710; US201113282255 20111026; US20100768509 20100427

AP - US201514796448 20150710

DT - **

CCI - A61J1/2096

CUI - B65B3/003

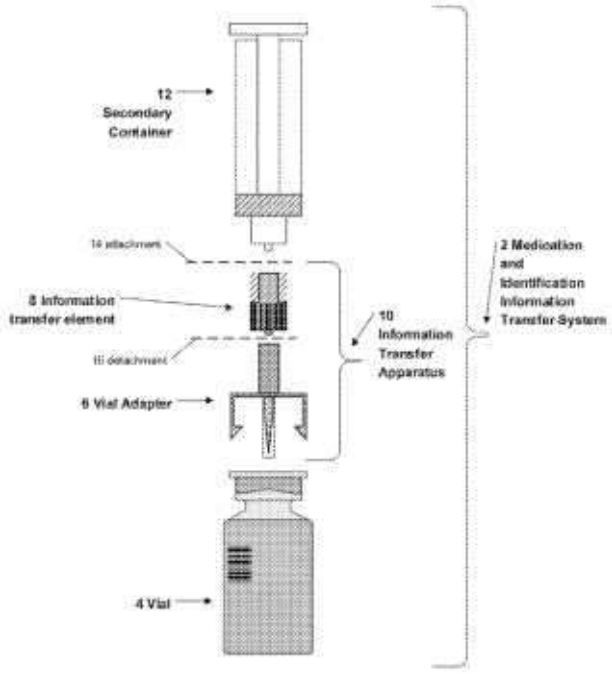
CCA - A61J2205/10 ; A61J2205/20 ; A61J2205/30 ; A61J2205/60 ; A61J1/201

CUA - A61J1/1425 ; A61J1/1418

PA - CRISI MEDICAL SYSTEMS INC [US]

TI - **Medication** and Identification Information Transfer **Apparatus**

AB - A **medication** and identification information transfer system is provided that includes a primary **medication** container, a secondary **medication** container, a secondary container label and a **medication** information transfer **apparatus**.
The **medication** information transfer **apparatus**, when **coupled** to the primary **medication** container, can transfer



information indicative of the contents of the primary **medication** container to a **medication** delivery **device** such as an intelligent **injection** site. The **medication** information transfer **apparatus** has a shape and size enabling it to be **connected** to an adapter for removal of **medication** from the primary **medication** container which enables transfer of the **medication** to a secondary container while simultaneously transferring information about the **medication** in the primary **medication** container to the **injection** site. In some implementations, the **medication injection** site can be placed on a **fluid** delivery **line** for infusion into a patient. Related **apparatus**, systems, methods and kits are also disclosed.

14/73 © EPODOC / EPO

PN - **CN204609856U** U 20150902

PR - CN20152252552U 20150424

AP - CN20152252552U 20150424

DT - I

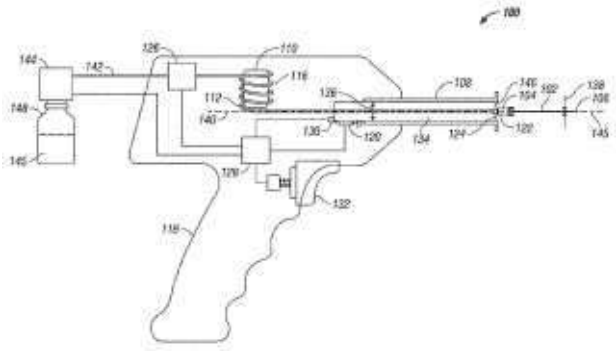
PA - SHENYANG WUSESHI TECHNOLOGY CO LTD

TI - Online acidizing **device** of portable water **injection** well

AB - The utility model discloses an online acidizing **device** of portable water **injection** well, include acidizing **device** and the mobile system that is used for removing the acidizing **device**, the acidizing **device** includes: acidizing **fluid** storage tank, circulation tank, the two diaphragm metering pumps of hydraulic pressure, cluster engine, explosion-proof electric cabinet, play **medicine** mouth, be equipped with imported main **line** between acidizing **fluid** storage tank and the circulation tank, be equipped with the ball valve respectively near acidizing **fluid** storage tank and circulation tank on the import main **line**, the entrance point of the two diaphragm metering pumps of hydraulic pressure is **connected** to on the imported main **line** through the **connecting line**, be equipped with ball valve and filter on the **connecting line**, be equipped with the single current valve between the exit end of the two diaphragm metering pumps of hydraulic pressure and the play **medicine** mouth, the exit end of the two diaphragm metering pumps of hydraulic pressure still is equipped with relief valve and surge chamber, the upper end of surge chamber is equipped with the manometer. The utility model discloses the operation procedure is simplified, effectively separate stifled,

easily moving, it is little to take the platform space, but the cross-operation, but multilayer, many wells time concentrated operation.

15/73 © EPODOC / EPO



PN - US2015224260 A1 20150813

PNFP - US9808578 B2 20171107

PR - US201514679756 20150406; US201113298742 20111117; US20080276637 20081124; US20080078674P 20080707

AP - US201514679756 20150406

DT - *; Rep

CCI - A61M5/172 ; A61M5/1785 ; A61M5/2053 ; A61M5/32 ; A61M5/46 ; A61M5/484

CUI - A61M5/284

CCA - A61M5/16886 ; A61M2202/049 ; A61M2205/3334 ; A61M2206/20

PA - (A1 B2)
GABRIEL INST INC [US]

TI - (A1 B2)
Delivery system for **injections** throughout zone of body

AB - (A1 B2)
A dispensing **device** which disperses **medicate** through a needle across a zone within a body. The **device** includes a needle which is, during use, becomes encapsulated within a tubular needle-receiving member, a reservoir in **fluid** communication with the needle, positioned within the housing, and in communication with the needle, a second reservoir, a reservoir- **connecting** conduit in communication with the reservoir, a **fluid** drive in communication with the **fluid** in the second reservoir and in communication with the reservoir- **connecting** conduit,

and a **linear** drive attached to the needle or to the needle-receiving member. The **fluid** drive impel **fluids** from the second reservoir to the reservoir-**connecting** conduit and thus drives the therapeutic agent from the reservoir during the **linear** displacement of the needle towards the housing. **Fluid** communication from the therapeutic agent reservoir to the needle is maintained by the tubing during operation of the **linear** drive.

16/73 © EPODOC / EPO

PN - NZ600918 A 20150130

PR - WO2009EP66383 20091203

AP - NZ20090600918 20091203

DT - I

CCI - A61M5/007 ; A61M5/14216

CCA - A61M5/165 ; A61M2205/7545 ; A61M2205/7563

PA - JEAN PIERRE PETERS

TI - **Fluid** interconnection set with particle filter

AB - Disclosed is an intravenous **fluid** dispensing system (3) for dispensing one or more **fluids** from one or more reservoirs (2) towards a dosing **device** (4) to allow improved **medication** of a patient. The **fluid** dispensing system comprises a reusable interconnection set (1) suited for use with multiple patients. The reusable interconnection set comprises for each reservoir a first tubing part (7) for establishing a **fluid connection** from the reservoir to a corresponding filling chamber (5) of a filling and **injection device** (6) where each filling chamber stores an amount of **fluid** from the corresponding

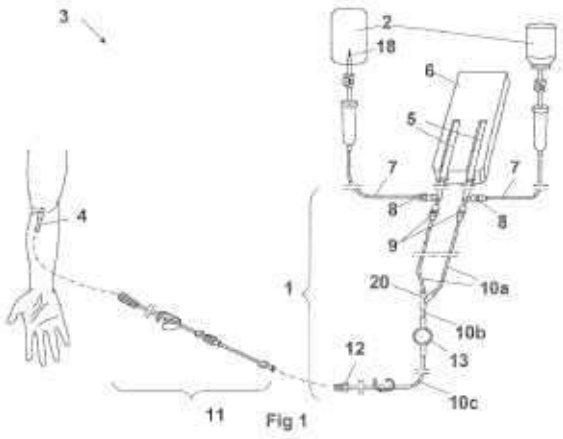


Fig 1

reservoir; and a second tubing part (10) for establishing a **fluid connection** from each of the filling chambers towards the dosing **device**, along with a first particle filter (13) for preventing particles of a size larger than a predetermined first size from being **injected** into the patient. The first particle filter is located downstream of the one or more filling chambers, within the second tubing part of the reusable interconnection set downstream of the filling chambers so that the first particle filter can be reused for several patients. A disposable interconnection **line** is used and is intended to be renewed with each patient; the disposable interconnection **line** providing a **fluid connection** between the reusable interconnection set and the dosing **device** and comprising a first and a second tubing part which are releasably **connectable** to each other in a liquid tight manner, wherein the **fluid connection** between the first and the second tubing part is established by means of an one-way valve.

17/73 © EPODOC / EPO

PN - UA98092 C2 20120410

PR - UA20110009895 20110809

AP - UA20110009895 20110809

DT - I

PA - NAZAROV YEVHEN IVANOVYCH [UA]

TI - plant for treatment of viral hepatites using **medical** ozone (variants)

AB - Declared plant for treatment of viral hepatites using **medical** ozone comprises **connected** in series **device** for collection and return of patient's blood (catheter, **injection** needle), **line** of **fluid** flow with rate regulators, peristaltic pump, source of ozone and **medical** oxygen. The latter is additionally provided with two tanks, the first - for a mixture of physiological saline (PS) and heparin, and the second - with a tank of ozonized PS, mixer for mixing blood and ozonized PS with built-in filter. The

peristaltic pump is equipped with control unit, and the first tank for mixture of PS and heparin is **connected** in the **line connecting** the **device** for taking blood from the peristaltic pump.In the first embodiment of the plant the **line** is **connected** with the mixer having built-in filter and **device** for return of patient's blood. The mixer with built-in filter is **connected** to the second tank of ozonized PS, which is equipped with two needles, short one for **injection** of ozone-oxygen mixture, formed from sources of ozone and **medical** oxygen, and long one - for **connection** to the destructor.In another embodiment of the installation, the latter additionally contains a dialyzer, and tank for plasma collecting. The inlet of the inner portion of the dialyzer is **connected** to the outlet of the peristaltic pump, and its outlet is **connected** to the mixer with built-in filter. The upper inlet pipe of the outside portion of the dialyzer is **connected** to the source of oxygen, and lower outlet pipe of the outside portion of the dialyzer is **connected** to the tank for plasma collecting and then to the **line**, **connected** with the mixer with built-in filter and **device** for return of patient's blood. The mixer with built-in filter is also **connected** with the second tank of ozonized PS, which is equipped with two needles, short one - for **injection** of ozone-oxygen mixture, formed from sources of ozone and **medical** oxygen, and long one - for **connection** with the destructor.In the third embodiment of the plant, the latter additionally comprises a dialyzer, and a tank for plasma collecting. The second peristaltic pump is **connected** to the control unit of the first peristaltic pump. In **line connecting** the **device** for blood collection with the first peristaltic pump, the first tank is **connected**, the lower central dialyzer pipe is **connected** to the first peristaltic pump, and its upper central pipe is **connected** to the rotary-film contactor (RFC), which is driven by an engine. The lower dialyzer pipe is **connected** to the tank for plasma collecting. The RFC is **connected** to the carbohemofilter through the second peristaltic pump, and the third RFC pipe is **connected** with the outlet of ozone source, which is **connected** to a source of **medical** oxygen. The upper pipe of the carbohemofilter is **connected** with the mixer with built-in filter and **device** for return of patient's blood, and the mixer with built-in filter is also **connected** with the tank containing PS for supplementary heparinisation.

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PN - WO2014179326 A1 20141106

PR - US201361818056P 20130501

AP - WO2014US35892 20140429

DT - *; Rep

CT - |US| ISR (A1)
US3889710 A 19750617
[Y] (BROST JULIEN H);
US4550749 A 19851105
[Y] (KRIKORIAN DONALD J [US]);
US6706022 B1 20040316
[Y] (LEINSING KARL R [US], et al);
US2007161970 A1 20070712
[A] (SPOHN MICHAEL A [US], et al);
US4749003 A 19880607
[A] (LEASON HAYDEN [US]);
US2012157914 A1 20120621

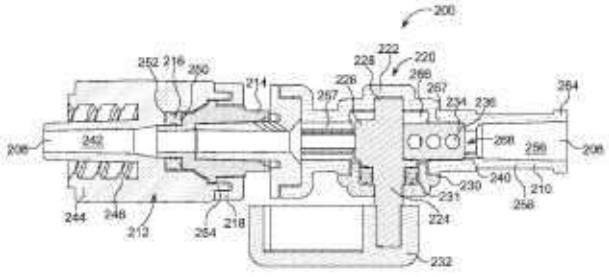


FIG. 5D

[A] (STROUP DAVID KARL [US])

CCI - A61M5/16827 ; A61M39/24

CCA - A61M5/14216 ; A61M2039/1077 ; A61M2039/226 ; A61M2039/242 ; A61M2039/2466

PA - BAYER MEDICAL CARE INC [US]

TI - **FLUID** PATH SET BOLUS CONTROL **DEVICE**

AB - A bolus control **device** for use with an **injection device**, the bolus control **device** including a valve body having a proximal end opposite a distal end. The valve body defines a **fluid** channel therethrough to allow a passage of **medical fluid** from the proximal end to the distal end. A **connector** is provided at the proximal end and configured for **connecting** to a **fluid** inlet **line**. A **connector** subassembly is provided at the distal end and configured for **connecting** to a **fluid** outlet **line**. A compressible check valve is disposed within the **fluid** channel, such that the compressible check valve is adjustable to control a cracking pressure at which the compressible check valve closes.

19/73 © EPODOC / EPO

PN - CN104093434 A 20141008

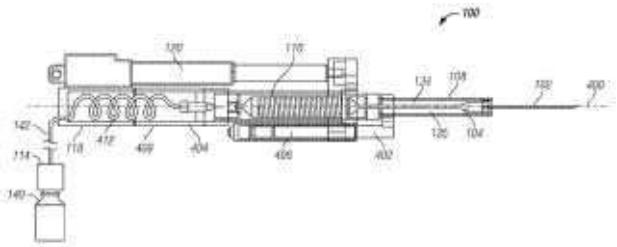
PNFP - CN104093434B B 20160127

PR - WO2012US60818 20121018; US201113298742 20111117

AP - CN2012856482 20121018

DT - I

CT - || STSE (A) US2002068907 A1 20020606 [A] (DYSARZ EDWARD D [US]) [A] 1-2



全文
US6645181 B1 20031111
[A] (LAVI GILAD [IL], et al)
[A] 1-2
全文
US2010049140 A1 20100225
[A] (MARSH RONALD W [US], et al)
[A] 1-2
全文

CCI - A61M5/172 ; A61M5/1785 ; A61M5/2053 ; A61M5/32 ; A61M5/46 ; A61M5/484

CCA - A61M5/16886 ; A61M2202/049 ; A61M2205/3334 ; A61M2206/20

PA - (A)
GABRIEL INST INC

TI - (A)
Delivery system for **injection** through zone of body

AB - (A)
A dispensing **device** which disperses **medicate** through a needle across a zone within a body with zero pressure differential. The **device** includes a needle which is, during use, becomes encapsulated within a tubular needle-receiving member, a therapeutic agent reservoir in **fluid** communication with the needle, positioned within said housing, and in communication with the needle, a second reservoir, a reservoir-**connecting** conduit in communication with the therapeutic agent reservoir, a **fluid** drive in communication with the **fluid** in the second reservoir and in communication with said reservoir-**connecting** conduit, and a **linear** drive attached to said needle or to said needle-receiving member.

PN - CN203736285U U 20140730

PR - CN2014297421U 20140305

AP - CN2014297421U 20140305

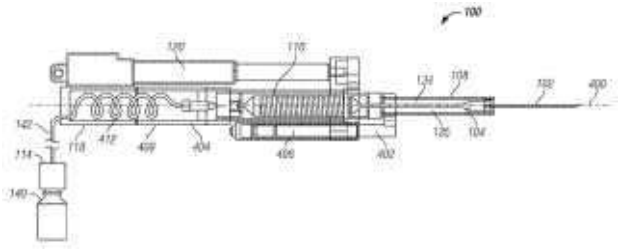
DT - I

PA - CHEN QIAOHUI

TI - **Fluid** infusion radiography and recanalization **device**

AB - The utility model discloses a **fluid** infusion radiography and recanalization **device**. The **fluid** infusion radiography and recanalization **device** comprises a guide wire, a micro-catheter, an inner cannula and an outer cannula which are **connected** in sequence from the inside to the outside in a sleeve mode. The guide wire body is a **linear** body made of metal material, polymer material coats the body surface, and smooth **medical** hydrophilic coatings are uniformly distributed at the body surface; the micro-catheter body is made of polymer material, the front end is provided with a conical head which is made of flexible material, and the rear end of the micro-catheter is provided with a joint through which the guide wire conveniently passes to **connect** with an **injector**; the inner cannula is a catheter made of metal material, and the rear end of the inner cannula is communicated with a guide piece which is convenient for the micro-catheter to penetrate; the outer cannula is made of polymer material, and the head is provided with an inflatable saccule which is convenient for fixing and taking out the **device**; the front end of the guide wire goes through the conical head of the micro-catheter. The **fluid** infusion radiography and recanalization **device** facilitates performing radiography and recanalization treatment.

21/73 © EPODOC / EPO



PN - CA2856628 A1 20130523

PNFP - CA2856628 C 20160726

PR - US201113298742 20111117; WO2012US60818 20121018

AP - CA20122856628 20121018

DT - I

CCI - A61M5/172 ; A61M5/1785 ; A61M5/2053 ; A61M5/32 ; A61M5/46 ; A61M5/484

CCA - A61M5/16886 ; A61M2202/049 ; A61M2205/3334 ; A61M2206/20

PA - (A1 C)
GABRIEL INST INC [US]

TI - (A1 C)
DELIVERY SYSTEM FOR **INJECTION** THROUGH ZONE OF BODY

AB - (A1 C)
A dispensing **device** which

disperses **medicate** through a needle across a zone within a body with zero pressure differential. The **device** includes a needle which is, during use, becomes encapsulated within a tubular needle-receiving member, a therapeutic agent reservoir in **fluid** communication with the needle, positioned within said housing, and in communication with the needle, a second reservoir, a reservoir-**connecting** conduit in communication with the therapeutic agent reservoir, a **fluid** drive in communication with the **fluid** in the second reservoir and in communication with said reservoir-**connecting** conduit, and a **linear** drive attached to said needle or to said needle-receiving member.

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PN - US2014100525 A1 20140410

PNFP - US9694144 B2 20170704

PR - US201314095196 20131203; US20060414242 20060427; US20020127201 20020419; US20010298055P 20010612; US20010298126P 20010612; US20010297861P 20010612; US20010298001P 20010612; US20010298056P 20010612; US20010297864P 20010612; US20010297860P 20010612

AP - US201314095196 20131203

DT - **

CT - || R141 (A1)
US7645263 B2 20100112 [ ] (ANGEL AIMEE B [US], et al);
US6890319 B1 20050510 [ ] (CROCKER PETER JOHN [GB]);
US9284267 B2 20160315 [ ] (JACOB ANDREAS [DE], et al);
US7485128 B2 20090203 [ ] (BOECKER DIRK [US], et al);
US8845550 B2 20140930 [ ] (FREEMAN DOMINIQUE M [US], et al);
US8622930 B2 20140107 [ ] (FREEMAN DOMINIQUE [US], et al);
US8016774 B2 20110913 [ ] (FREEMAN DOMINIQUE [US], et al);
US8784335 B2 20140722 [ ] (FREEMAN DOMINIQUE [US], et al);
US8262614 B2 20120911 [ ] (FREEMAN DOMINIQUE [US], et al);
US6402701 B1 20020611 [ ] (KAPLAN LEOPOLD S [US], et al);
US7491178 B2 20090217 [ ] (BOECKER DIRK [US], et al);
US8007446 B2 20110830 [ ] (BOECKER DIRK [US], et al);
US7901362 B2 20110308 [ ] (FREEMAN DOMINIQUE M [US], et al);

US8382682 B2 20130226 [ ] (FREEMAN DOMINIQUE [US], et al);
US8202231 B2 20120619 [ ] (FREEMAN DOMINIQUE M [US], et al);
US8360992 B2 20130129 [ ] (FREEMAN DOMINIQUE [US], et al);
US8366637 B2 20130205 [ ] (FREEMAN DOMINIQUE [US], et al);
US8574895 B2 20131105 [ ] (FREEMAN DOMINIQUE M [US], et al);
US6364889 B1 20020402 [ ] (KHEIRI MOHAMMAD A [US], et al)

- || STSE (B2)

US6364889 B1 20020402 [ ] (KHEIRI MOHAMMAD A [US], et al);
US6402701 B1 20020611 [ ] (KAPLAN LEOPOLD S [US], et al);
US6890319 B1 20050510 [ ] (CROCKER PETER JOHN [GB]);
US7485128 B2 20090203 [ ] (BOECKER DIRK [US], et al);
US7491178 B2 20090217 [ ] (BOECKER DIRK [US], et al);
US7645263 B2 20100112 [ ] (ANGEL AIMEE B [US], et al);
US7901362 B2 20110308 [ ] (FREEMAN DOMINIQUE M [US], et al);
US8007446 B2 20110830 [ ] (BOECKER DIRK [US], et al);
US8016774 B2 20110913 [ ] (FREEMAN DOMINIQUE [US], et al);
US8202231 B2 20120619 [ ] (FREEMAN DOMINIQUE M [US], et al);
US8262614 B2 20120911 [ ] (FREEMAN DOMINIQUE [US], et al);
US8360992 B2 20130129 [ ] (FREEMAN DOMINIQUE [US], et al);
US8366637 B2 20130205 [ ] (FREEMAN DOMINIQUE [US], et al);
US8382682 B2 20130226 [ ] (FREEMAN DOMINIQUE [US], et al);
US8574895 B2 20131105 [ ] (FREEMAN DOMINIQUE M [US], et al);
US8622930 B2 20140107 [ ] (FREEMAN DOMINIQUE [US], et al);
US8784335 B2 20140722 [ ] (FREEMAN DOMINIQUE [US], et al);
US8845550 B2 20140930 [ ] (FREEMAN DOMINIQUE M [US], et al);
US9284267 B2 20160315 [ ] (JACOB ANDREAS [DE], et al)

CCI
- A61B5/150022 ; A61B5/150061 ; A61B5/150068 ; A61B5/150099 ; A61B5/150152 ; A61B5/150167 ; A61B5/150175 ; A61B5/15019 ; A61B5/150213 ; A61B5/150221 ; A61B5/150358 ; A61B5/150427 ; A61B5/150503 ; A61B5/150572 ; A61B5/15113 ; A61B5/15117 ; A61B5/15123 ; A61B5/15146 ; A61B5/15151 ; A61B5/15153 ; A61B5/15163 ; A61B5/15169 ; A61B5/15171 ; A61B5/15176 ; A61B5/15184 ; A61B5/15186 ; A61B5/157 ; B01L3/502715 ; G01N33/557 ; A61B5/15178

CUI
- A61M5/158 ; A61M5/46

CCA
- A61B17/32093 ; A61B5/14532 ; B01L3/5027 ; B01L3/50273 ; B01L3/502746 ; G01N33/4905 ; A61M2005/004 ; B01L2200/10 ; B01L2300/0663 ; B01L2300/18

PA
- (A1 B2)
SANOFI AVENTIS DEUTSCHLAND [DE]

TI
- (A1 B2)
Sampling module **device** and method

AB
- (A1 B2)
A **medicament injection device** includes a **device** body portion that includes a penetrating member channel. A penetrating member is provided with a sharpened distal tip and shaft portion that is slidably disposed within the penetrating channel to provide for a penetrating to travel in a **linear** axial movement. A pierceable membrane isolates a penetrating member in an associated penetrating member chamber. A **medicament** reservoir is in **fluid** communication with the penetrating member. The **medicament** reservoir is configured to house a **medicament** and is **coupled** to the penetrating member to allow for delivery of **medicament** to a tissue site.

23/73 © EPODOC / EPO

PN - KR20130124424 A 20131113

PNFP - KR101404823B B1 20140611

PR - KR20120047655 20120504

AP - KR20120047655 20120504

DT - I

CT - || STSE (B1)
KR20070098793 A 20071005 [ ] (POWER PLATE INT LTD [GB]);
KR20040043304 A 20040524 [ ] (LG HOUSEHOLD & HEALTH CARE LTD);
KR100880358B B1 20090123 [ ] (PARK HYO NAM [KR])

PA - (A)
CHOI KYU DONG [KR]; KIM JONG HUN [KR]

TI - (A B1)
APPARATUS FOR SUPPLYING **MEDICINAL FLUID**

AB - (A)
The **medicine** supply **device** comprises a receiving unit, a plunger, a flat driving unit, and a power transmission unit. The receiving unit is filled with a **medicine** and has an outlet in which the **medicine** is discharged at the other side while one side is opened. The plunger is inserted to one side of the receiving unit and causes piston movement in the receiving unit to **inject** the **medicine** to a subject through the outlet. The flat driving unit generates torque by a flat structure. The powder transmission unit **connects** the flat driving unit and the plunger, converts the torque of the flat driving unit into a **linear** driving force, and transfers the **linear** driving force to the plunger.

24/73 © EPODOC / EPO

PN - KR20130124057 A 20131113

PNFP - KR101404847B B1 20140611

PR - KR20120047671 20120504

AP - KR20120047671 20120504

DT - I

CT - || STSE (B1)
JPH0584296 A 19930406 [ ] (NEMOTO KIYOURINDOU KK);
KR20110122647 A 20111110 [ ] (DIAMES CO LTD [KR], et al)

PA - (A)
CHOI KYU DONG [KR]; KIM JONG HUN [KR]

TI - (A B1)
PEN TYPE **DEVICE** FOR **INJECTING MEDICAL FLUID**

AB - (A)
A pen type **medicine injection device** comprises a fixing body, a pusher, and a driving unit. The fixing body has a needle at the lower portion to discharge a **medicine**. A storage unit filled with the **medicine** is mounted in the fixing body. The pusher is placed at the upper portion of the fixing body and pushes the storage unit to discharge the **medicine** through the needle. The driving unit is **coupled** with the fixing body at the upper portion of the pusher and comprises a flat driving unit which generates torque by

a flat structure; and a powder transmission unit which **connects** the flat driving unit and the pusher, converts the torque of the flat driving unit into a **linear** driving force, and transmits the **linear** driving force into the pusher.

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PN - CN103272304 A 20130904

PNFP - CN103272304B B 20160406

PR - CN20131210775 20130530

AP - CN20131210775 20130530

DT - I

CT - || STSE (A)
CN102711868 A 20121003 [A] (CEQUR SA)
[A]
CN103007372 A 20130403 [X] (SYNO PHARMACEUTICAL CO LTD)
[X]
CN102143775 A 20110803 [A] (DEBIOTECH SA)
[A]
CN2427204Y Y 20010425 [A] (JIANG JIAYU [CN])
[A]

PA - (A)
SHANGHAI NASALCLEANER BIO TECHNOLOGY CO LTD; NANTONG APON MEDICAL APPLIANCE CO LTD

TI - (A)
Peristaltic analgesia pump and flow rate detection and fault diagnosis method thereof

AB - (A)
The invention relates to a **medical** medium **injection** flow rate control **device** and a fault diagnosis method, in particular to a peristaltic analgesia pump and a flow rate detection and fault diagnosis method of the peristaltic analgesia pump. A first touch force sensor is arranged at the position of any one point A of a transfusion pipeline, a second touch force sensor is installed at the position of any one point B of the transfusion pipeline, the first touch force sensor and the second touch force sensor are **connected** with a flow detection **device** through signal **lines**, the flow detection **device** feeds back data to the peristaltic analgesia pump through a signal **line**, and a flow rate detection **device** is constituted. The first touch force sensor and the second touch force sensor are **connected** with an A/D converter through signal **lines**, the A/D converter converts the data into an impulse sequence and inputs the impulse sequence into a data processor, and the data processor feeds back data to the peristaltic analgesia pump. The peristaltic analgesia pump can feed **medicine**, a transfusion **medicine** feeding flow rate control and fault diagnosis method is provided through detection of pressure generated by **fluid** on the pipe wall and the frequency of the **fluid** in the transfusion pipeline, and therefore the purpose that the peristaltic analgesia pump conducts accurate and reliable operation according to a set controllable mode can be achieved.

26/73 © EPODOC / EPO

PN - CN103200891 A 20130710

PNFP - CN103200891B B 20160309

PR - WO2011US49701 20110830; US20100914297 20101028

AP - CN2011850945 20110830

DT - I

CT - || STSE (A)
US2010234876 A1 20100916
[A] (WATSON JAMES R [US])
[A]
CN101686847 A 20100331
[A] (PHAKOS)
[A]
CN101868190 A 20101020
[A] (ENDOCARE INC)
[A]
US2010114269 A1 20100506
[A] (WITTENBERGER DAN [CA], et al)
[A]
WO0207625 A2 20020131
[X] (SCIMED LIFE SYSTEMS INC [US], et al)
[X]

CCI - A61B18/02

CCA - A61M25/104 ;
A61B2017/00243 ;
A61B2017/00867 ;
A61B2018/0022 ;
A61B2018/00357 ;
A61B2018/0212 ;
A61B2018/1861 ;
A61M2025/0004 ;
A61M2025/0175

PA - (A)
MEDTRONIC ABLATION FRONTIERS

TI - (A)
Cryo-ablation **device** with deployable **injection** tube

AB - (A)
A **medical** system is provided, including a catheter body having a proximal portion and a distal portion; a shaft slidably disposed within a portion of the catheter body, the shaft defining a distal

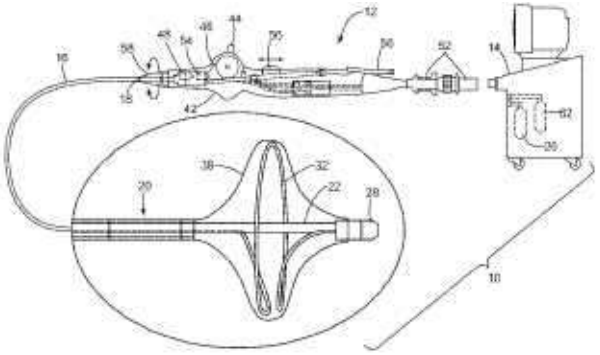


FIG. 1

tip; a **fluid injection** tube **coupled** to the distal portion of the catheter body and the distal tip of the shaft, the **fluid injection** tube being transitionable from a first geometric configuration to a second geometric configuration; a membrane **coupled** to the shaft and enclosing at least a portion of the **fluid injection** tube therein; and a coolant source in **fluid** communication with the **fluid injection** tube. The first geometric configuration may be substantially **linear**, the second geometric configuration may be substantially helical, and the membrane may be tensioned across at least a portion of the **fluid injection** tube in the second geometric configuration.

27/73 © EPODOC / EPO

PN - WO2013074244 A1 20130523

PR - US201113298742 20111117

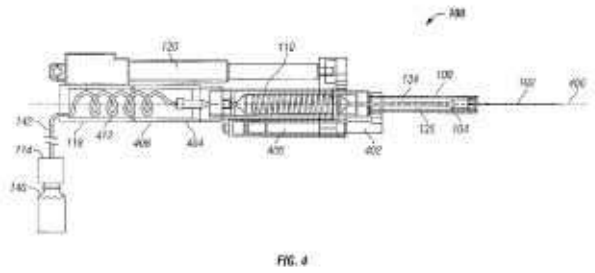
AP - WO2012US60818 20121018

DT - **

CT - |US| ISR (A1)
US2010049140 A1 20100225 [X] (MARSH RONALD W [US], et al);
US2011238009 A1 20110929 [Y] (MERON MOTI [IL], et al);
US2010185152 A1 20100722 [Y] (LARSEN ANDRE [DK], et al);
US4392859 A 19830712 [A] (DENT HUGH R [GB]);
US6056716 A 20000502 [A] (D ANTONIO NICHOLAS F [US], et al);
US2004050864 A1 20040318 [A] (STRADELLA GIUSEPPE [IT])

CCI - A61M5/172 ; A61M5/1785 ; A61M5/2053 ; A61M5/32 ; A61M5/46 ; A61M5/484

CCA - A61M5/16886 ; A61M2202/049 ; A61M2205/3334 ;



A61M2206/20

PA - GABRIEL INST INC [US]; STEARNS STANLEY D [US]; LOY MAX H ; JR [US]; DAVIS DONALD G [US]

TI - DELIVERY SYSTEM FOR **INJECTION** THROUGH ZONE OF BODY

AB - A dispensing **device** which disperses **medicate** through a needle across a zone within a body with zero pressure differential. The **device** includes a needle which is, during use, becomes encapsulated within a tubular needle-receiving member, a therapeutic agent reservoir in **fluid** communication with the needle, positioned within said housing, and in communication with the needle, a second reservoir, a reservoir-**connecting** conduit in communication with the therapeutic agent reservoir, a **fluid** drive in communication with the **fluid** in the second reservoir and in communication with said reservoir-**connecting** conduit, and a **linear** drive attached to said needle or to said needle-receiving member.

28/73 © EPODOC / EPO

PN - CA2813730 A1 20120503

PNFP - CA2813730 C 20170926

PR - US20100914297 20101028; WO2011US49701 20110830

AP - CA20112813730 20110830

DT - I

CCI - A61B18/02

CCA - A61M25/104 ; A61B2017/00243 ; A61B2017/00867 ; A61B2018/0022 ; A61B2018/00357 ; A61B2018/0212 ; A61B2018/1861 ;

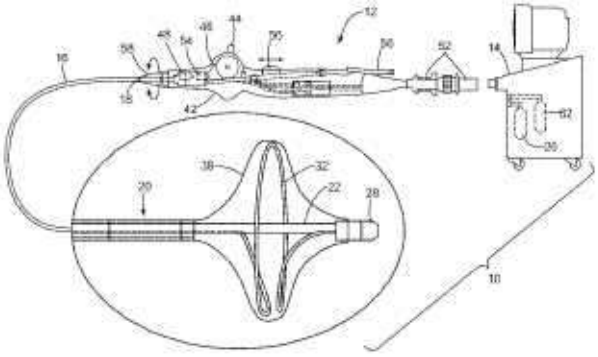


FIG. 1

A61M2025/0004 ;
A61M2025/0175

PA - (A1 C)
MEDTRONIC ABLATION FRONTIERS [US]

TI - (A1 C)
CRYO-ABLATION **DEVICE** WITH DEPLOYABLE **INJECTION** TUBE

AB - (A1 C)
A **medical** system is provided, including a catheter body having a proximal portion and a distal portion; a shaft slidably disposed within a portion of the catheter body, the shaft defining a distal tip; a **fluid injection** tube **coupled** to the distal portion of the catheter body and the distal tip of the shaft, the **fluid injection** tube being transitionable from a first geometric configuration to a second geometric configuration; a membrane **coupled** to the shaft and enclosing at least a portion of the **fluid injection** tube therein; and a coolant source in **fluid** communication with the **fluid injection** tube. The first geometric configuration may be substantially **linear**, the second geometric configuration may be substantially helical, and the membrane may be tensioned across at least a portion of the **fluid injection** tube in the second geometric configuration.

29/73 © EPODOC / EPO

PN - CN202832395U U 20130327

PR - CN20122476792U 20120918

AP - CN20122476792U 20120918

DT - I

PA - PETRO CHINA CO LTD

TI - Water **injection** well head high-pressure spray chemicals dosing **device**

AB - The utility model discloses a water **injection** well head high-pressure spray chemicals dosing **device**. The design of the water **injection** well head high-pressure spray

chemicals dosing **device** aims at achieving the water **injection** well single well fixed-point dosing and the high pressure well wellhead unpowered dosing. One end of a negative pressure happen cavity is **connected** with a pressure **line** with a nozzle. The other end of the negative pressure happen cavity is **connected** with a throat pipe, a diffusion tube and a discharge pipeline sequentially. Meanwhile, two ends of a dosing **line** are respectively **connected** with a **medicine** storage tank and the negative pressure happen cavity. By means of the water **injection** well head high-pressure spray chemicals dosing **device**, high pressure **fluid** is inserted, the negative pressure is generated by the negative pressure happen cavity, and the solution is inhaled into the throat pipe, and then the solution is discharged out of the pipeline and enters into the water well after the energy conversion. The water **injection** well head high-pressure spray chemicals dosing **device** is simple in operational approach, energy-saving and consumption-reducing. The nozzle is not provided with moving components, and therefore the water **injection** well head high-pressure spray chemicals dosing **device** is reliable in work, free of leakage and low in equipment cost. The nozzle wear-resistant coating has high density and high uniformity, and is anti- erosion, high pressure resistant, and therefore the nozzle body can be protected effectively. The water **injection** well head high-pressure spray chemicals dosing **device** is easy to process and small in maintenance workload, and the service life can be improved five to ten times than that in the existing equipment.

30/73 © EPODOC / EPO

PN - KR101136844B B1 20120419

PR - KR20110087243 20110830

AP - KR20110087243 20110830

DT - I

CT - || STSE (B1)
KR200439064Y Y1 20080318 [ ];
JPH0719637Y Y2 19950510 [ ];
KR20040066030 A 20040723 [ ] (KYORITSU GOKIN CO LTD);
KR200331632Y Y1 20031101 [ ]

CNOI - A61L9/14 ; A61L9/145 ; B05B1/14 ; B05B7/04 ; B05B7/26

CNOA - A61L2209/111 ; A61L2209/13 ; A61L2209/134

PA - PARK HYUNG SEK [KR]; YOON KI DUK [KR]

TI - TOTAL PURIFIER USING SPRAY

AB - PURPOSE: A spray type integrated purification **device** is provided to simplify spraying **line** and to improve deodorization and disinfection within a clean house. CONSTITUTION: A spray type integrated purification **device** comprises a liquid **medicine** supply part(100), a nozzle part(50), a compressed air **injection** part(300), and a controller(200). In the liquid **medicine** supply part, a deodorizing agent reservoir and a fungicide reservoir are **connected** through a supply **line**. The compression air spray part offers compressed air to the inside of the nozzle part. The **fluid** of the supply tube is easily discharged. The controller controls an interception valve installed in each supply **line**.

31/73 © EPODOC / EPO

PN - KR101126623B B1 20120326

PR - KR20110087244 20110830

AP - KR20110087244 20110830

DT - I

CT - || STSE (B1)
KR100611641B B1 20060804 [ ] (BYUCKSAN ENGINEERING CO LTD [KR]);
KR20100060118 A 20100607 [ ] (CHEJU CITY [KR]);
KR100871136B B1 20081203 [ ] (CHEJU CITY [KR])

CNOI - A61L9/14 ; A61L9/145 ; B05B1/14 ; B05B7/04 ; B05B7/26

CNOA - A61L2209/111 ; A61L2209/13 ; A61L2209/134

PA - PARK HYUNG SEK [KR]; YOON KI DUK [KR]

TI - TOTAL PURIFIER FOR REMOVING BAD SMELL AND INSECT

AB - PURPOSE: An integrated purification **device** is provided to simplify spraying **line** and to improve deodorization and sterilization within a clean house. CONSTITUTION: An integrated purification **device** comprises a liquid **medicine** supply part(100), a nozzle part(50), a compressed air **injection** part(300), and a controller(200). The liquid **medicine** supply part is **connected** to a deodorizing agent reservoir and a fungicide reservoir through each supply **line**. The nozzle part is **connected** to the liquid **medicine** supply part through a main supply pipe. The compression air spray part facilitates the outflow of the **fluid** of the supply pipe by supplying compressed air to the inside of the nozzle part. The controller controls the **fluid** supply amount of the liquid **medicine** supply part.

32/73 © EPODOC / EPO

PN - RU2010142319 A 20120420

PNFP - RU2555125 C2 20150710

PR - US20050237503 20050928

AP - RU20100142319 20060829

DT - I

CCI - A61M3/0233 ; A61M3/0216

CCA - A61M3/0254 ; A61F9/007 ; A61M2205/3331 ; A61M2205/3389

PA - (C2)
AL KON INK [CH]

TI - (C2)
INTRAOCULAR PRESSURE REGULATION

AB - (C2)
FIELD: **medicine**.SUBSTANCE: invention refers to **medicine**, particularly to ophthalmic surgery and concerns intraoperative intraocular pressure regulation (IPR). That is ensured by using a microsurgical system comprising a surgical cartridge, a surgical unit and a computer. The cartridge comprises an infusion chamber containing an irrigation **fluid**. The pressure is generated and maintained in the microsurgical system by a pressure generator hydraulically **connected** to the above surgical cartridge and comprising a compressed gas source. The **device** also comprises an electromagnetic proportional valve and a gas **line** hydraulically **connecting** the compressed gas source,

proportional valve and surgical cartridge. The surgical unit gets hydraulically **connected** to the surgical cartridge by an infusion **fluid line**. The required IPR is specified. The pressure is maintained in the above infusion chamber by gas pressure-fed from the above compressed gas source into the surgical cartridge. The irrigation **fluid** is supplied into the surgical unit in the infusion **fluid line**. The irrigation **fluid** flow is measured in the infusion **fluid line**; a signal corresponding to the measured irrigation **fluid** flow is **injected** into the computer. The estimate IOP is calculated in the computer in response to the received signal. The computer is used to regulate compressed gas pressure by **injecting** the second signal from the computer onto the proportional valve to maintain the estimate IOP equal to the required IOP. EFFECT: method provides the IOP regulation, including the compensation function that reduces potential intraoperative hypotension and secondary complications.2 cl, 4 dwg

33/73 © EPODOC / EPO

PN - US2012109116 A1 20120503

PNFP - US9220555 B2 20151229

PR - US20100914297 20101028

AP - US20100914297 20101028

DT - **

CT - || STSE (B2)
US4573470 A 19860304 [ ] (ADVANCED CARDIOVASCULAR SYSTEM [US])
US4762130 A 19880809 [ ] (FOGARTY THOMAS J [US])
US6149677 A 20001121 [ ] (INNERCOOL THERAPIES INC [US])
US6264679 B1 20010724 [ ] (RADIANT MEDICAL INC [US])
US6575933 B1 20030610 [ ] (CRYOCATH TECHNOLOGIES INC [CA])
US6875209 B2 20050405 [ ] (GALIL MEDICAL LTD [IL])
US7101367 B2 20060905 [ ] (ETHICON INC [US])
US7220257 B1 20070522 [ ] (SCIMED LIFE SYSTEMS INC [US])
US7500973 B2 20090310 [ ] (AMS RES CORP [US])
US8298218 B2 20121030 [ ] (MAHROUCHE RACHID [CA], et al)
US2001037081 A1 20011101 [ ] (HEINER WILFRED PETER [NL])
US2003208199 A1 20031106 [ ] (KEANE DAVID [US])

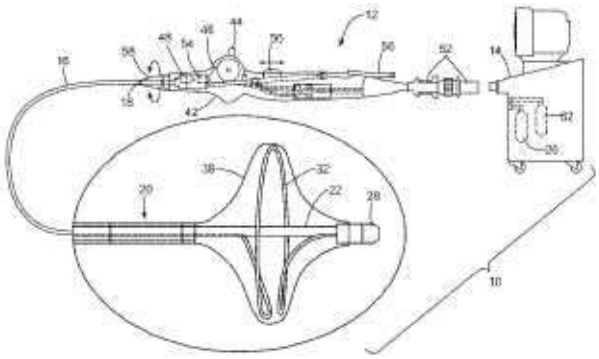


FIG. 1

US2006253114 A1 20061109 [ ] (SAADAT VAHID [US])
US2011009854 A1 20110113 [ ] (ENDOCARE INC [US])

- || R141 (A1)
US7500973 B2 [ ];
US7101367 B2 [ ];
US6875209 B2 [ ];
US2003208199 A1 [ ];
US2011009854 A1 [ ];
US2006253114 A1 [ ];
US7220257 B1 [ ];
US4573470 A [ ];
US8298218 B2 [ ];
US6575933 B1 [ ];
US6149677 A [ ];
US2001037081 A1 [ ];
US4762130 A [ ];
US6264679 B1 [ ]

CCI
- A61B18/02

CCA
- A61M25/104 ;
A61B2017/00243 ;
A61B2017/00867 ;
A61B2018/0022 ;
A61B2018/00357 ;
A61B2018/0212 ;
A61B2018/1861 ;
A61M2025/0004 ;
A61M2025/0175

PA
- (A1 B2)
ASCONEGUY ALEXANDER J [US];
ZARBATANY DAVID [US];
MEDTRONIC ABLATION FRONTIERS [US]

TI
- (A1 B2)
CRYO-ABLATION **DEVICE** WITH DEPLOYABLE **INJECTION** TUBE

AB
- (A1 B2)
A **medical** system is provided, including a catheter body having a proximal portion and a distal portion; a shaft slidably disposed within a portion of the catheter body, the shaft defining a distal tip; a **fluid injection** tube **coupled** to the distal portion of the catheter body and the distal tip of the shaft,

the **fluid injection** tube being transitionable from a first geometric configuration to a second geometric configuration; a membrane **coupled** to the shaft and enclosing at least a portion of the **fluid injection** tube therein; and a coolant source in **fluid** communication with the **fluid injection** tube. The first geometric configuration may be substantially **linear**, the second geometric configuration may be substantially helical, and the membrane may be tensioned across at least a portion of the **fluid injection** tube in the second geometric configuration.

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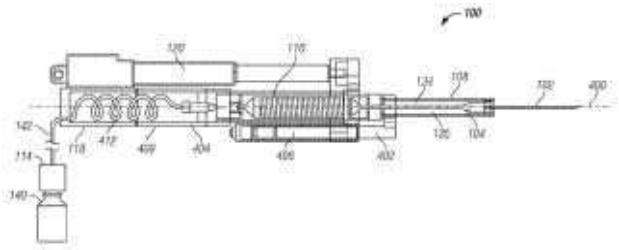


PN - US2012065618 A1 20120315

PNFP - US9022987 B2 20150505

PR - US201113298742 20111117; US20080276637 20081124; US20080078674P 20080707

AP - US201113298742 20111117

DT - *; Rep

CT - || STSE (B2) US6645181 B1 20031111 [ ] (LAVI GILAD [IL], et al) US2002068907 A1 20020606 [ ] (DYSARZ EDWARD D [US])

- || R141 (A1) US2002068907 A1 [ ]; US6645181 B1 [ ]

CCI - A61M5/172 ; A61M5/1785 ; A61M5/2053 ; A61M5/32 ; A61M5/46 ; A61M5/484

CCA - A61M5/16886 ; A61M2202/049 ; A61M2205/3334 ; A61M2206/20

PA - (A1 B2) STEARNS STANLEY D [US]; LOY JR H MAX [US]; DAVIS DONALD G [US]; GABRIEL INST INC [US]

TI - (A1 B2)
Delivery system for **injection** through zone of body

AB - (A1 B2)
A dispensing **device** which disperses **medicate** through a needle across a zone within a body with zero pressure differential. The **device** includes a needle which is, during use, becomes encapsulated within a tubular needle-receiving member, a therapeutic agent reservoir in **fluid** communication with the needle, positioned within said housing, and in communication with the needle, a second reservoir, a reservoir-**connecting** conduit in communication with the therapeutic agent reservoir, a **fluid** drive in communication with the **fluid** in the second reservoir and in communication with said reservoir-**connecting** conduit, and a **linear** drive attached to said needle or to said needle-receiving member.

PN - US2012037266 A1 20120216

PNFP - US9101534 B2 20150811

PR - US201113282255 20111026; US20100768509 20100427

AP - US201113282255 20111026

DT - *; Rep

CT - || R141 (A1) US2001056258 A1 20011227 [ ] (EVANS ROBERT F [US])
- || STSE (B2) US2001056258 A1 20011227 [ ] (EVANS ROBERT F [US])

CCI - A61J1/2096

CUI - B65B3/003

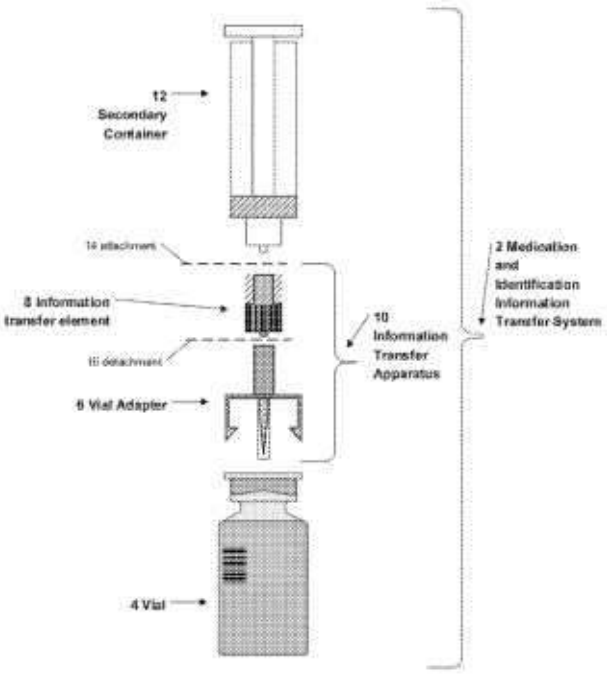
CCA - A61J2205/10 ; A61J2205/20 ; A61J2205/30 ; A61J2205/60 ; A61J1/201

CUA - A61J1/1425 ; A61J1/1418

PA - (A1) BOCHENKO WALTER JOHN [US]; CRISI MEDICAL SYSTEMS INC
- (B2) BOCHENKO WALTER JOHN [US]; CRISI MEDICAL SYSTEMS INC [US]

TI - (A1) **Medication** and Identification Information Transfer **Apparatus**
- (B2) **Medication** and identification information transfer **apparatus**

AB - (A1 B2) A **medication** and identification information transfer system is provided that includes a primary **medication** container, a secondary **medication** container, a secondary container label and a **medication** information transfer **apparatus**.
The **medication** information transfer **apparatus**, when **coupled** to the primary **medication** container, can transfer information indicative of the contents of the



primary **medication** container to a **medication** delivery **device** such as an intelligent **injection** site. The **medication** information transfer **apparatus** has a shape and size enabling it to be **connected** to an adapter for removal of **medication** from the primary **medication** container which enables transfer of the **medication** to a secondary container while simultaneously transferring information about the **medication** in the primary **medication** container to the **injection** site. In some implementations, the **medication injection** site can be placed on a **fluid** delivery **line** for infusion into a patient. Related **apparatus**, systems, methods and kits are also disclosed.

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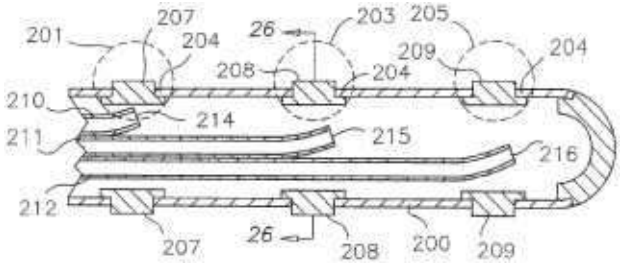


PN - **US2012010605** A1 20120112

PNFP - US8585690 B2 20131119

PR - US201113238607 20110921; US20100792376 20100602; US20050224370 20050912; US20030657922 20030909; US20020050452 20020116; US20010845535 20010430; US19980201071 19981130; US19970893825 19970711; US19970807382 19970227

AP - US201113238607 20110921

DT - **

CT - || STSE (B2)
US4022215 A 19770510 [ ] (BENSON JERREL W)
US5139496 A 19920818 [ ] (HED AHARON Z [US])
US5342301 A 19940830 [ ] (SAAB MARK A [US])
US5423807 A 19950613 [ ] (MILDER FREDRIC L [US])
US5520682 A 19960528 [

] (BAUST JOHN G [US], et al)
US5758505 A 19980602 [
] (DOBAK III JOHN D [US], et al)
US5800493 A 19980901 [
] (STEVENS GAIL [US], et al)
US5899898 A 19990504 [
] (ARLESS STEVEN G [CA], et al)
US6106518 A 20000822 [
] (WITTENBERGER DAN [CA], et al)
US6540740 B2 20030401 [
] (LEHMANN JOHN W [US], et al)
US6629972 B2 20031007 [
] (LEHMANN JOHN W [US], et al)
US6669689 B2 20031230 [
] (LEHMANN JOHN W [US], et al)
US8043284 B2 20111025 [
] (LEHMANN JOHN W [US], et al)

- || R141 (A1)
US5139496 A [ ];
US5423807 A [ ];
US5520682 A [ ];
US5899898 A [ ];
US6106518 A [ ];
US6540740 B2 [ ];
US6629972 B2 [ ];
US6669689 B2 [ ];
US8043284 B2 [ ];
US5342301 A [ ];
US5758505 A [ ];
US4022215 A [ ];
US5800493 A [ ]

CCI - A61B18/02 ; A61M25/0029

CCA - A61B2017/00243 ;
A61B2017/00292 ;
A61B2017/00973 ;
A61B2018/00095 ;
A61B2018/0212 ;
A61F2007/0298 ;
A61M2025/0039 ; Y10S977/906

PA - (A1 B2)
LEHMANN JOHN W [US];
WITTENBERGER DAN [CA];
LUECKGE CLAUDIA [CA]; LALONDE JEAN-PIERRE [CA]; PETRE CRISTIAN [CA]; SANTOIANNI DOMENIC [CA];
MEDTRONIC CRYOCATH LP [CA]

TI - (A1 B2)
CRYOSURGICAL CATHETER

AB

- (A1)
  A cryogenic catheter includes an outer flexible member having at least one cryogenic **fluid** path through the flexible member. The at least one **fluid** path is defined by a plurality of flexible members disposed within the outer flexible member.
- (B2)
  A cryogenic catheter includes an elongate, contiguous, thermally-transmissive region **coupled** to the catheter, the thermally-transmissive region being sufficiently flexible to change from a **linear** configuration to an arcuate configuration. The thermally-transmissive region may include a plurality of interconnected thermally-transmissive segments that are generally cylindrical in shape. The cryogenic catheter may be in **fluid** communication with a **fluid** source, and may include one or more **fluid injection** tubes. Further, an **injection** tube may be slidably disposed within the catheter so that the **injection** tube is longitudinally movable relative to an outer surface of the catheter. The cryogenic catheter may also be in communication with a controller programmed to regulate delivery of a cryogenic **fluid** from the **fluid** source to the **medical device**.

PN - US2011264069 A1 20111027

PNFP - US8702674 B2 20140422

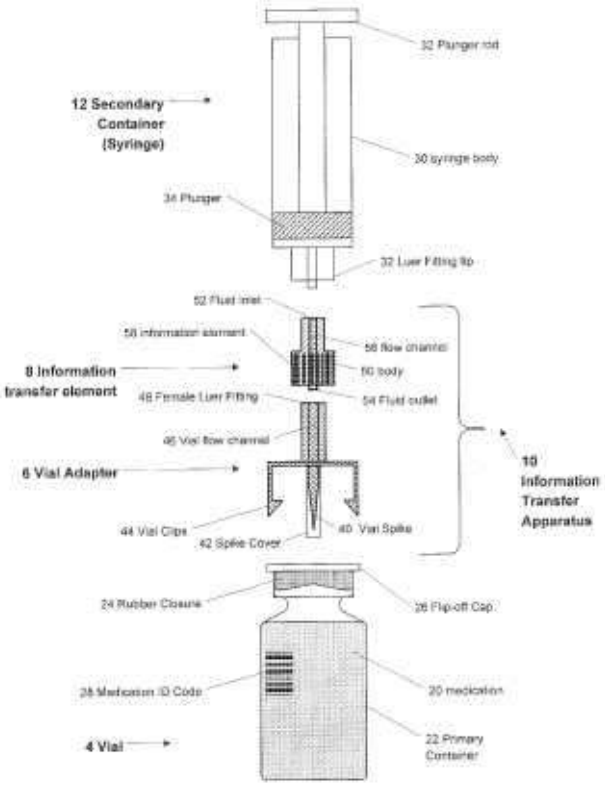
PR - US20100768509 20100427

AP - US20100768509 20100427

DT - *; Rep

CT - || R141 (A1)
US4650475 A 19870317 [ ] (SMITH CAROL [US], et al);
US5279576 A 19940118 [ ] (LOO GEORGE [US], et al);
US5692640 A 19971202 [ ] (CAULFIELD PATRICIA E [US], et al);
US5984901 A 19991116 [ ] (SUDO MORIHIRO [JP], et al);
US2002188259 A1 20021212 [ ] (HICKLE RANDALL S [US], et al);
US6685678 B2 20040203 [ ] (EVANS ROBERT F [US], et al);
US7115113 B2 20061003 [ ] (EVANS ROBERT F [US], et al);
US7161488 B2 20070109 [ ] (FRASCH EUGEN [DE]);
US2007299421 A1 20071227 [ ] (GIBSON CHAD M [US]);
US7722083 B2 20100525 [ ] (MCCARTHY THOMAS G [US], et al);
US2011112473 A1 20110512 [ ] (BOCHENKO WALTER JOHN [US], et al);
US2011111794 A1 20110512 [ ] (BOCHENKO WALTER JOHN [US], et al);
US2011112474 A1 20110512 [ ] (BOCHENKO WALTER JOHN [US], et al);
US8035517 B2 20111011 [ ] (GIBSON CHAD M [US]);
US2001056258 A1 20011227 [ ] (EVANS ROBERT F [US]);
US2004103951 A1 20040603 [ ] (OSBORNE JOEL A [US], et al)

- || STSE (B2)
US4650475 A 19870317 [ ] (SMITH CAROL [US], et al);
US5279576 A 19940118 [ ] (LOO GEORGE [US], et al);



US5692640 A 19971202 [ ] (CAULFIELD PATRICIA E [US], et al);
US5984901 A 19991116 [ ] (SUDO MORIHIRO [JP], et al);
US6685678 B2 20040203 [ ] (EVANS ROBERT F [US], et al);
US7115113 B2 20061003 [ ] (EVANS ROBERT F [US], et al);
US7161488 B2 20070109 [ ] (FRASCH EUGEN [DE]);
US7722083 B2 20100525 [ ] (MCCARTHY THOMAS G [US], et al);
US8035517 B2 20111011 [ ] (GIBSON CHAD M [US]);
US2001056258 A1 20011227 [ ] (EVANS ROBERT F [US]);
US2002188259 A1 20021212 [ ] (HICKLE RANDALL S [US], et al);
US2004103951 A1 20040603 [ ] (OSBORNE JOEL A [US], et al);
US2007299421 A1 20071227 [ ] (GIBSON CHAD M [US]);
US2011111794 A1 20110512 [ ] (BOCHENKO WALTER JOHN [US], et al);
US2011112473 A1 20110512 [ ] (BOCHENKO WALTER JOHN [US], et al);
US2011112474 A1 20110512 [ ] (BOCHENKO WALTER JOHN [US], et al);
US2011264069 A1 20111027 [ ] (BOCHENKO WALTER JOHN [US])

CCI - A61J1/2096

CCA - A61J2205/10 ; A61J2205/30 ; A61J2205/40 ; A61J2205/60 ; A61J1/201

PA - (B2)
BOCHENKO WALTER JOHN [US];
CRISI MEDICAL SYSTEMS INC [US]

TI - (A1)
MEDICATION AND IDENTIFICATION INFORMATION TRANSFER **APPARATUS**

- (B2)
Medication and identification

information transfer **apparatus**

AB - (A1 B2)
A **medication** and identification information transfer system is provided that includes a **medication** vial, a secondary **medication** container (syringe) and a **medication** information transfer **apparatus**. The **medication** information transfer **apparatus**, when **coupled** to a vial, can transfer information indicative of the contents of the vial to an intelligent **injection** site. The **medication** information transfer **apparatus** has a shape and size enabling it to be **connected** to a vial adapter for removal of **medication** from the vial transfer it to a syringe for delivery to an **injection** site while simultaneously transferring information about the **medication** in the vial to the **injection** site. In some implementations, the **medication injection** site can be placed on a **fluid** delivery **line** for infusion into a patient. Related **apparatus**, systems, and kits are also disclosed.

38/73 © EPODOC / EPO

PN - WO2012057912 A1 20120503

PR - US20100914297 20101028

AP - WO2011US49701 20110830

DT - *; Rep

CT - |EP| ISR (A1)
WO0207625 A2 20020131
[XY] (SCIMED LIFE SYSTEMS INC [US], et al)
[X] 1-5,7,14
* abstract *
* page 7, line 1 - line 7 *
* page 21, line 3 - page 22, line 15 *
[Y] 6;

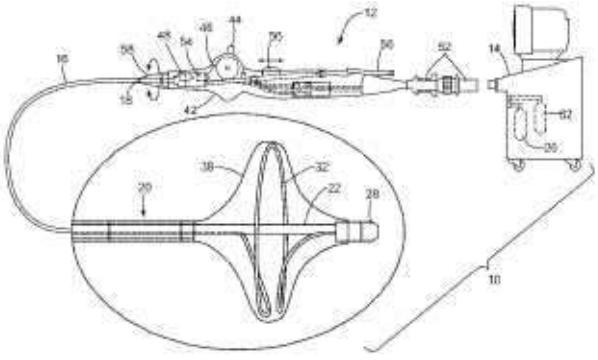


FIG. 1

WO9615825 A1 19960530
[Y] (ADVANCED CARDIOVASCULAR SYSTEM [US])
[Y] 6
* page 6, line 2 - line 9; figure 3 *

CCI - A61B18/02

CCA - A61M25/104 ; A61B2017/00243 ; A61B2017/00867 ; A61B2018/0022 ; A61B2018/00357 ; A61B2018/0212 ; A61B2018/1861 ; A61M2025/0004 ; A61M2025/0175

PA - MEDTRONIC ABLATION FRONTIERS [US]; ASCONEGUY ALEXANDER J [US]; ZARBATANY DAVID [US]

TI - CRYO-ABLATION **DEVICE** WITH DEPLOYABLE **INJECTION** TUBE

AB - A **medical** system is provided, including a catheter body having a proximal portion and a distal portion; a shaft slidably disposed within a portion of the catheter body, the shaft defining a distal tip; a **fluid injection** tube **coupled** to the distal portion of the catheter body and the distal tip of the shaft, the **fluid injection** tube being transitionable from a first geometric configuration to a second geometric configuration; a membrane **coupled** to the shaft and enclosing at least a portion of the **fluid injection** tube therein; and a coolant source in **fluid** communication with the **fluid injection** tube. The first geometric configuration may be substantially **linear**, the second geometric configuration may be substantially helical, and the membrane may be tensioned across at least a portion of

the **fluid injection** tube in the second geometric configuration.

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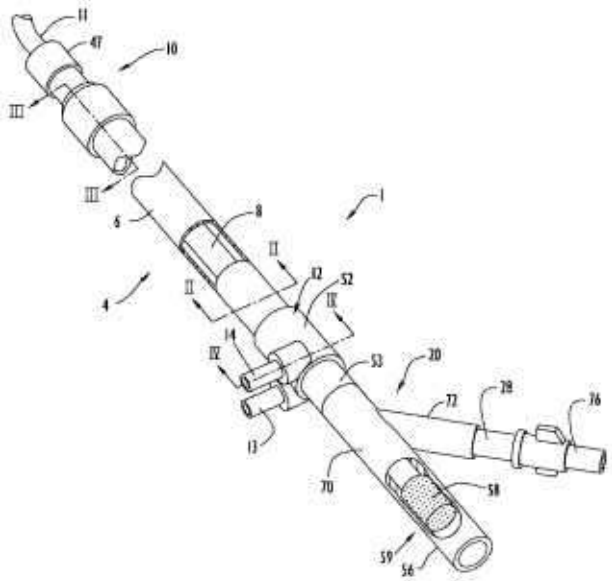


PN - US7611504 B1 20091103

PR - US20040795333 20040309

AP - US20040795333 20040309

DT - **

CT - || STSE (B1) US2910981 A 19591103 [ ] (WILSON VOLNEY C, et al); US4705505 A 19871110 [ ] (FRIED STEVEN J [US]); US5364371 A 19941115 [ ] (DEKA PRODUCTS LP [US])

CCI - A61M5/44 ; A61M39/045

CCA - A61M1/369 ; A61F2007/126 ; A61M2039/0205 ; A61M2205/366

PA - PATENTED MEDICAL SOLUTIONS LLC [US]

TI - Method and **apparatus** for facilitating **injection** of **medication** into an intravenous **fluid line** while maintaining sterility of infused **fluids**

AB - A warming **device** for an IV **fluid line** according to the present invention includes a warmer unit and a wye type fitting with an **injection** site. The warmer unit includes a tube for intravenous **fluid** and channels containing a warming **fluid** to heat the IV tube. One fitting branch is **connected** to an intravenous **fluid** source, while the remaining branch houses the **injection** site. The **injection** site branch includes an **injection** safety member that ensures a syringe needle or other instrument is contained within the fitting to prevent rupture of the IV tube. The warming **device** may include an additional wye

type fitting **coupled** to the initial fitting and including another **injection** site, where the fittings typically exclude the safety member. A syringe needle is inserted into the additional **injection** site to prevent rupture of the IV tube. In addition, the warming **device** may be configured for needleless **injections**.

40/73 © EPODOC / EPO

PN - CN101511408 A 20090819

PR - FR20060053560 20060904

AP - CN2007832830 20070903

DT - I

CCI - A61M5/14244 ; A61M5/16881

CCA - A61M2005/14264 ; A61M2205/0244

PA - DEBIOTECH SA [CH]

TI - Liquid delivery **device** comprising a pump and a valve

AB - The invention relates to a liquid delivery **device** comprising a pump (1) and an anti-siphon valve (4) external to the pump (1), having an inlet pipe (3) **connected** to the outlet **line** (2) of the pump (1) and an outlet pipe (7), between which pipes are a seat (lia) and a moving part (11), which two are able to interact and define, between the inlet pipe (3) and the outlet pipe (7), a leaktight liquid flow region, said moving part (11) being able to move from an open position allowing liquid to flow in said flow region, to a closed position in which the moving part (11) contacts the seat (lia) of the valve (4) and prevents flow through said flow region, said moving part (11) being subject to the pressure of a reference chamber (5) which is not in **fluid** communication with the outlet pipe. Applicable to the making of a pump for **injecting** a **medicinal** liquid.

41/73 © EPODOC / EPO

PN - KR20080104487 A 20081203

PNFP - KR100902784B B1 20090612

PR - KR20070051334 20070528

AP - KR20070051334 20070528

DT - I

CT - (B1)
US4332249 A [ ]; KR920702238 A [ ];
KR20050067210 A [ ]; KR20070101670 A [ ]

PA - (A)
KIM YOUNG MU [KR]

TI - (A B1)
FILTER **DEVICE** AND **MEDICINE INJECTION APPARATUS** COMPRISING THE SAME

AB - (A)
A filter **device**, and an **injection injecting device** containing the filter **device** are provided to allow the impurities to be filtered completely by forming vortex with passing the **fluid** through with a constant velocity irrespective of the kind and viscosity of **fluid**. A filter **device**(300) comprises an inlet pipe(312) which has an inlet hole(311) **connected** with a **fluid** supply **line** and flows the **fluid** flown through the inlet hole into the filter **device**; a filter housing(320) which is **connected** with the inlet pipe and goes through the outside; and an opening/closing member(313) which is located inside the filter housing, forms a trap space part(319) and opens/closes the inlet pipe, wherein the opening/closing member converts the **fluid** into the direction other than the inflow direction from the inlet pipe when the inlet pipe is opened by the inflow of **fluid** so as to guide it to the trap space part, and the **fluid** is flown into the filter housing after the impurities contained in the **fluid** is removed in the trap space part.

42/73 © EPODOC / EPO

PN - **CN201143221Y** Y 20081105

PR - CN20072159759U 20071229

AP - CN20072159759U 20071229

DT - I

PA - YANFENG CHAI [CN]

TI - Puncture needle

AB - The utility model discloses a puncture needle, which relates to the technical field of **medical** appliance, which comprises a puncture needle head and a needle base. The rear of the needle base is **connected** with a three-way pipe; the three-way pipe comprises a straight pipe directly communicated with the puncture needle head and a bypass straight pipe; the straight pipe is provided with a needle plug and the three-way pipe is **connected** with an **injector** or a liquid storage **device** by the needle plug; the external surface of the puncture needle is marked by a millimeter scale **line**; the bypass straight pipe is provided with a container with an upper valve and a lower valve; the container is marked by a volume scale **line**. As the structure is adopted, the puncture needle of the utility model, compared with the prior art, is good for doctors to control the depth of the puncture needle and directly measure the outflow of cerebrospinal **fluid**.

43/73 © EPODOC / EPO

PN - **WO2005061122** A1 20050707

PR - US20030728751 20031208

AP - WO2004US35484 20041025

DT - **

CT - |EP| ISR (A1)
US2002127327 A1 20020912 [X] (SCHWARZ MARLENE C [US], et al)
[X] 1-15,20-22
* paragraphs [0033] - [0074] *;
EP1004363 A2 20000531 [X] (BOEING CO [US])
[X] 1-15,17,19-22
* paragraphs [0019] - [0025] *;
US2002012741 A1 20020131 [A] (HEINZ JOCHEN [DE], et al)

[A] 17
* figure 1 *

CCI - B05C3/109 ; B05D1/22

CCA - A61F2/0077 ; B05C3/09 ; B05D1/002 ; A61F2250/0067 ; A61F2310/0097

PA - SCIMED LIFE SYSTEMS INC [US]; SPENCER STEVEN [US]; KLISCH LEO [US]

TI - **MEDICAL** IMPLANT PROCESSING CHAMBER

AB - **Apparatus** and method for treating **medical** implants are provided. The **apparatus** may include a vessel having a treatment chamber with an inside surface, an outside surface, an entrance, a plurality of **fluid** passages passing from the outside surface to the inside surface, and a compressible **fluid** supply **line coupled** to at least one of the **fluid** passages. In this embodiment, passages may be positioned and sized to create a buffer zone of compressible **fluids** between the inside surface of the treatment chamber and a **medical** implant placed therein. The method may include placing a first **medical** implant into a treatment chamber having inside surfaces, retarding the first **medical** implant from contacting the inside surfaces of the treatment chamber by **injecting** compressible **fluid** into the treatment chamber, **injecting** a therapeutic into the treatment chamber, and removing the first **medical** implant.

44/73 © EPODOC / EPO

PN - WO2005023095 A2 20050317

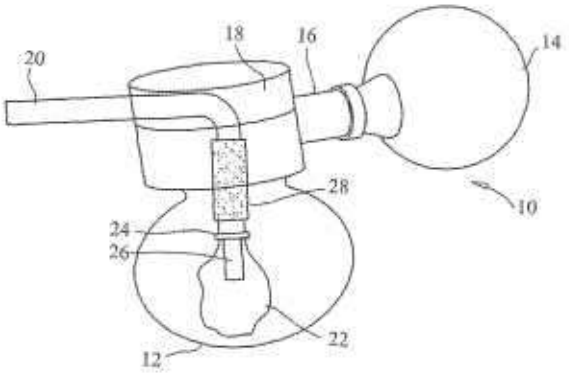
PNFP - WO2005023095 A3 20051229

PR - US20030501263P 20030909; US20040555067P 20040322; US20040841074 20040507

AP - WO2004US29312 20040909

DT - *; Rep

CT - |US| ISR (A3)
WO6264636 B1 20010724
[X] (HOLM HANS HENRIK [DK], et al);
US1925230 A 19330905
[A] (BUCKHOUT HALSEY L);
US3892226 A 19750701
[A] (ROSEN IRWIN CHARLES);
US5338294 A 19940816
[A] (BLAKE III JOSEPH W [US]);
US873728 A 19071217
[A] (CRISENBERRY BENJAMIN F [US]);
US4221225 A 19800909
[A] (SLOAN NOAH H);
US4880408 A 19891114
[A] (CUMES DAVID M [US], et al);
US5421824 A 19950606
[A] (CLEMENT THOMAS P [US], et



al)

CCI - A61M1/0011 ; A61M1/0056 ; A61M1/0062

CCA - A61M2205/075

PA - (A2 A3)
CIVCO MEDICAL INSTR INC [US];
BARZELL WINSTON E [US];
WHITMORE WILLET F [US]

TI - (A2)
SYSTEM AND METHOD FOR IRRIGATION AND TISSUE EVACUATION AND COLLECTION

- (A3)
DEVICE FOR TISSUE IRRIGATION, EVACUATION AND COLLECTION

AB - (A2)
ABSTRACT The present invention provides a system and method for irrigating and collecting tissue from a body cavity in a patient. The system includes an irrigation and collection **device** for **injecting** an irrigation **fluid** into the body cavity. The irrigation **device injects fluid** into the body cavity by creating a positive pressure within the **device** to expel the irrigation **fluid** from the **device** into the body cavity. The irrigation **fluid** is evacuated from the body cavity by the resulting negative pressure within the **device**, drawing the irrigation **fluid** and any loose tissue or particulate material into the **device**. The irrigation **fluid** is filtered, collecting the evacuated tissue and particulate material in a collection receptacle thereby isolating the evacuated tissue and particulate material within the irrigation **fluid**.

- (A3)
The present invention relates to a **medical** irrigation and tissue collection system (10) for

introducing **fluid** into and withdrawing **fluid** from a body cavity via a **fluid line**. The system (10) includes a container (12) having an interior for holding **fluid**; a pump bulb (14) in **fluid** communication with the container (12) that may be securely attached using means other than pure friction; a tube (20) having a first end portion **connected** with the **fluid line** and a second end portion in **fluid** communication with the interior of the container (12); and a collection receptacle (22, 42) for collecting particulate material. The collection receptacle (22) is provided with a plurality of openings (43) allowing the passage of **fluid** and particulate material smaller than a predetermined sized, and is removably **connected**.

45/73 © EPODOC / EPO

PN - US2004171985 A1 20040902

PNFP - US7442181 B2 20081028

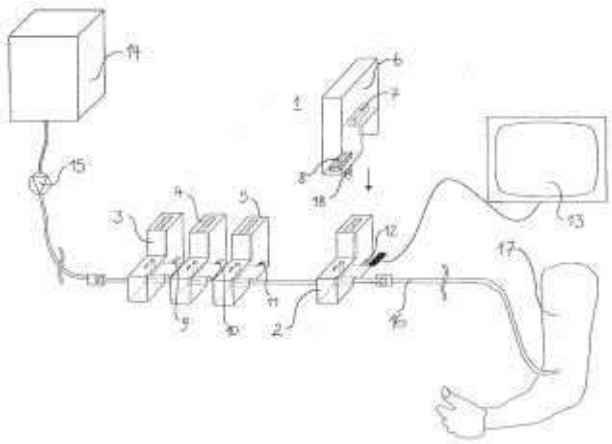
PR - DE2003108401 20030227

AP - US20030738463 20031217

DT - **

CT - || STSE (B2)
US4756706 A 19880712 [ ] (KERNS RALPH M [US], et al)
US4915688 A 19900410 [ ] (BISCHOF REINHARD [DE], et al)
US5873731 A 19990223 [ ] (PRENDERGAST WILLIAM K [US])
US6077055 A 20000620 [ ] (VILKS CLINTON SCOTT [US])
US6491666 B1 20021210 [ ] (SANTINI JR JOHN T [US], et al)
US7150724 B2 20061219 [ ] (MORRIS MATTHEW G [US], et al)

- || R141 (A1)
US5873731 A [ ];



US4915688 A [ ];
US6077055 A [ ];
US4756706 A [ ];
US6491666 B1 [ ];
US7150724 B2 [ ];
US5531697 A [ ];
US5531698 A [ ];
US2003088238 A1 [ ];
US2006122577 A1 [ ]

CCI - A61M5/1409 ; A61M5/1413

PA - (B2)
DRAEGER MEDICAL AG [DE]

TI - (A1 B2)
Device for dispensing **medical** active ingredients

AB - (A1)
A **device** and system for dispensing **medical** active ingredients. **Medical** active ingredients may be, e.g., drugs or anesthetics, which enter the patient's bloodstream. **Injection** pumps and perfusors are usually used for their dispensing, and vapors are frequently used in the case of inhalation anesthetics. The **device** permits the dispensing of a plurality of **medical** active ingredients, in which the rates of dispensing can be set precisely and changed with rapid action. This is accomplished by the series **connection** of a plurality of devices according to the present invention, which are designed as modules. Each module comprises a cartridge (6) as well as a delivery **device** (8) for delivering the particular **medical** active ingredient to be administered to a **fluid** interface (18), which leads to a supply **line** (16) designed either as an infusion **line** or as a respiration tube. The module has a **coupling** means (9, 10, 11, 12).

- (B2)
A **device** and system for dispensing **medical** active ingredients. **Medical** active ingredients may be, e.g., drugs or anesthetics, which enter the patient's bloodstream. **Injection** pumps and perfusors are usually used for their dispensing, and vapors are frequently used in the case of inhalation anesthetics. The **device** permits the dispensing of a plurality of **medical** active ingredients, in which the rates of dispensing can be set precisely and changed with rapid action. This is accomplished by the series **connection** of a plurality of devices according to the present invention, which are designed as modules. Each module comprises a cartridge (6) as well as a delivery **device** (8) for delivering the particular **medical** active ingredient to be administered to a **fluid** interface (18), which leads to a supply **line** (16) designed either as an infusion **line** or as a respiration tube. The module has a **coupling** means (9, 10, 11, 12).

46/73 © EPODOC / EPO

PN - US2005120951 A1 20050609

PNFP - US6997989 B2 20060214

PR - US20030728751 20031208

AP - US20030728751 20031208

DT - *; Rep

CT - || STSE (B2)
US3251337 A 19660517 [ ] (LATTA ROBERT E, et al)
US3682185 A 19720808 [ ] (MURRAY JAMES J, et al)
US4593168 A 19860603 [ ] (AMADA HARUO [JP])
US5328720 A 19940712 [ ] (EMKEN MICHAEL R [US], et al)
US5352261 A 19941004 [ ] (AIKAWA HARUHIKO [JP], et al)
US5464650 A 19951107 [ ] (BERG ERIC P [US], et al)
US6183565 B1 20010206 [ ] (GRANNEMAN ERNST HENDRIK AUGUST [NL], et al)

US6368658 B1 20020409 [ ] (SCHWARZ MARLENE [US], et al)
US6569292 B1 00000000 [ ]
US6824619 B1 20041130 [ ] (KUZNETSOV VLADIMIR IVANOVICH [NL], et al)

- || R141 (A1)
US2002012741 A1 [ ];
US6183565 B1 [ ];
US6368658 B1 [ ];
US3251337 A [ ];
US6569292 B2 [ ];
US4593168 A [ ];
US5328720 A [ ];
US3682185 A [ ];
US2002127327 A1 [ ];
US5352261 A [ ];
US5464650 A [ ];
US6824619 B1 [ ]

CCI - B05C3/109 ; B05D1/22

CCA - A61F2/0077 ; B05C3/09 ; B05D1/002 ; A61F2250/0067 ; A61F2310/0097

PA - (B2)
BOSTON SCIENT SCIMED INC [US]

TI - (A1 B2)
Medical implant processing chamber

AB - (A1 B2)
Apparatus and method for treating **medical** implants are provided. The **apparatus** may include a vessel having a treatment chamber with an inside surface, an outside surface, an entrance, a plurality of **fluid** passages passing from the outside surface to the inside surface, and a compressible **fluid** supply **line coupled** to at least one of the **fluid** passages. In this embodiment, passages may be positioned and sized to create a buffer zone of compressible **fluids** between the inside surface of the treatment chamber and a **medical** implant placed therein. The method may include placing a first **medical** implant into a treatment chamber having inside surfaces, retarding the first **medical** implant from contacting the inside surfaces of the treatment chamber by **injecting** compressible **fluid** into the treatment chamber, **injecting** a therapeutic into the treatment chamber, and removing the first **medical** implant.

PN - US2007161952 A1 20070712

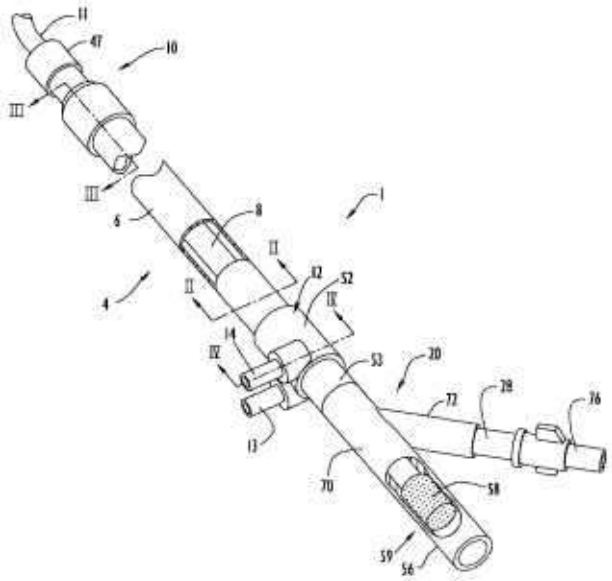
PNFP - US8845586 B2 20140930

PR - US20070713593 20070305; US20040795333 20040309

AP - US20070713593 20070305

DT - *; Rep

CT - || STSE (B2)
US2910981 A 19591103 [ ] (WILSON VOLNEY C, et al)
US6158458 A 20001212 [ ] (RYAN DANA WM [US])
- || R141 (A1)
US1479451 A [ ];
US1987119 A [ ];
US3636767 A [ ];
US4309592 A [ ];
US4490884 A [ ];
US4495402 A [ ];
US4801777 A [ ];
US5081697 A [ ];
US5180896 A [ ];
US5279558 A [ ];
US5279598 A [ ];
US5282264 A [ ];
US5381510 A [ ];
US5485408 A [ ];
US5707431 A [ ];
US6174300 B1 [ ];
US6175688 B1 [ ];
US1794215 A [ ];
US3370153 A [ ];
US3640277 A [ ];
US4138890 A [ ];
US4187847 A [ ];
US4430078 A [ ];
US4804367 A [ ];
US4808159 A [ ];
US4900308 A [ ];
US5184613 A [ ];
US5389078 A [ ];
US5392025 A [ ];
US5492534 A [ ];
US5713864 A [ ];
US6024539 A [ ];
US6344033 B1 [ ];
US785524 A [ ];
US1847954 A [ ];



US1995302 A [ ];
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US4009615 A [ ];
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US4651004 A [ ];
US4651813 A [ ];
US4906816 A [ ];
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US5195976 A [ ];
US5290230 A [ ];
US5297234 A [ ];
US5397875 A [ ];
US5399166 A [ ];
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US5879143 A [ ];
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US6035102 A [ ];
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US4585435 A [ ];
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US5205820 A [ ];
US5408576 A [ ];
US5408577 A [ ];
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US5743878 A [ ];
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US5893843 A [ ];
US6045648 A [ ];
US6221045 B1 [ ];
US2002041621 A1 [ ];
US6722782 B2 [ ];
US1062111 A [ ];
US1493450 A [ ];
US1960417 A [ ];
US2470481 A [ ];
US4090514 A [ ];
US4329569 A [ ];
US4384578 A [ ];
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USRE35501E E [ ];
US5755275 A [ ];
US6062429 A [ ];
US6236809 B1 [ ];
US6566631 B2 [ ];
US675647 A [ ]

CCI - A61M5/44 ; A61M39/045

CCA - A61M1/369 ; A61F2007/126 ; A61M2039/0205 ; A61M2205/366

PA - (B2)
FARIES JR DURWARD I [US]; HEYMANN BRUCE R [US]; HENDRIX DAVID [US]; PATENTED MEDICAL SOLUTIONS LLC [US]

TI - (A1 B2)
Method and **apparatus** for facilitating **injection** of **medication** into an intravenous **fluid line** while maintaining sterility of infused **fluids**

AB - (A1 B2)
A warming **device** for an IV **fluid line** according to the present invention includes a warmer unit and a wye type fitting with an **injection** site. The warmer unit includes a tube for intravenous **fluid** and channels containing a warming **fluid** to heat the IV tube. One fitting branch is **connected** to an intravenous **fluid** source, while the remaining branch houses the **injection** site. The **injection** site branch includes an **injection** safety member that ensures a syringe needle or other

instrument is contained within the fitting to prevent rupture of the IV tube. The warming **device** may include an additional wye type fitting **coupled** to the initial fitting and including another **injection** site, where the fittings typically exclude the safety member. A syringe needle is inserted into the additional **injection** site to prevent rupture of the IV tube. In addition, the warming **device** may be configured for needleless **injections**.

48/73 © EPODOC / EPO

PN - US2006161113 A1 20060720

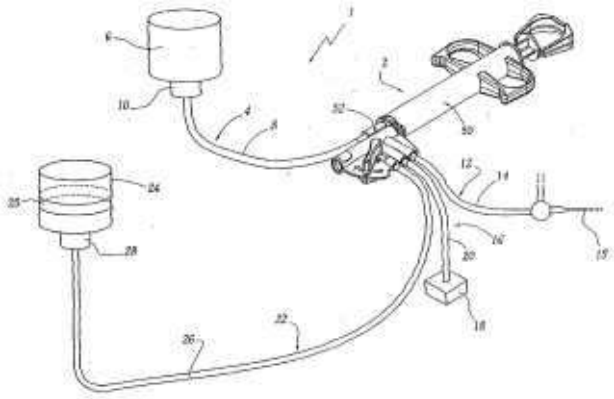
PNFP - US7704236 B2 20100427

PR - FR20020016432 20021220; WO2003FR03854 20031219

AP - US20050539577 20051214

DT - **

CT - || STSE (B2)
US4296785 A 19811027 [ ] (VITELLO JOHN P, et al)
US4608996 A 19860902 [ ] (BROWN DAVID C [US])
US4838866 A 19890613 [ ] (MARSHALL SR WILLIAM M [US])
US5423751 A 19950613 [ ] (HARRISON SAMUEL W [US], et al)
US5562611 A 19961008 [ ] (TRANSUE DEBORAH M [US])
US6638258 B2 20031028 [ ] (SCHWARTZ ROBERT S [US], et al)
US6650929 B1 20031118 [ ] (NEMOTO SHIGERU [JP], et al)
US6699232 B2 20040302 [ ] (HART COLIN P [US], et al)
US6866654 B2 20050315 [ ] (CALLAN GERALD W [US], et al)
US6953450 B2 20051011 [ ] (BALDWIN BRIAN EUGENE [US], et al)



US2002123737 A1 20020905 [ ] (HART COLIN P [US], et al)
US2004082904 A1 20040429 [ ] (HOUDE ERIC [US], et al)

- || R141 (A1)
US3859985 A [ ];
US4645496 A [ ];
US6699232 B2 [ ];
US6866654 B2 [ ];
US2004082904 A1 [ ];
US4838866 A [ ];
US5423751 A [ ];
US4608996 A [ ];
US2002123737 A1 [ ];
US4296785 A [ ];
US5562611 A [ ];
US2002151854 A1 [ ];
US6638258 B2 [ ];
US6953450 B2 [ ];
US6650929 B1 [ ]

CCI - A61M5/007

CCA - A61M5/204 ; A61M39/223

PA - (B2)
SEDAT [FR]

TI - (A1 B2)
Distribution **device** for a supply network for supply of **medical fluids** to a patient

AB - (A1)
This distribution **device** comprises a syringe body (30), a distributor (32), a feed tube (56) for a first active **medical fluid** opening into the syringe body (30), a tube (60) for the **injection** of this active **fluid connected** to a distal extremity (46) of the syringe body (30), a pressurised tube (64) designed to be **connected** to a patient through a pressurised **line** (12) and a tube (66) for the measurement of venous or arterial pressure. The pressurised, **injection** and measurement tubes open into a chamber (62) bounded within the-body (32 B) of the

distributor (32). The **device** (2) comprises a flush tube (68) which is at least partly bounded by the body (32 B) of the distributor (32), which opens into the chamber (62) and is fitted with a valve (70, 80) which can be operated manually.

- (B2)
  This distribution **device** comprises a syringe body (30), a distributor (32), a feed tube (56) for a first active **medical fluid** opening into the syringe body (30), a tube (60) for the **injection** of this active **fluid connected** to a distal extremity (46) of the syringe body (30), a pressurized tube (64) designed to be **connected** to a patient through a pressurized **line** (12) and a tube (66) for the measurement of venous or arterial pressure. The pressurized, **injection** and measurement tubes open into a chamber (62) bounded within the body (32B) of the distributor (32). The **device** (2) comprises a flush tube (68) which is at least partly bounded by the body (32B) of the distributor (32), which opens into the chamber (62) and is fitted with a valve (70, 80) which can be operated manually.

PN - US3935883 A 19760203

PR - US19740498456 19740819

AP - US19740498456 19740819

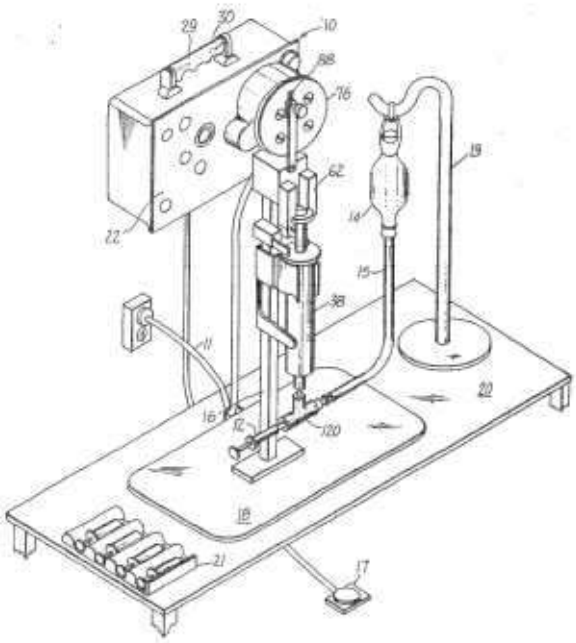
DT - *

CT - US3182692 A [ ]; US3197285 A [ ];
US3292667 A [ ]; US3602272 A [ ];
US3734147 A [ ]

CCI - A61M5/1782 ; B65B3/003

PA - STACH PAUL E; SHERRIN THOMAS P

TI - Syringe filling **apparatus** with disposable **fluid** conducting elements



AB - An **apparatus** for the rapid, accurate and sterile filling of unit dosage, **injection** syringes with **medication** from a bulk source container or for reconstituting vials of drugs. A clamping means is mounted to a support frame for releasably retaining the outer cylinder member of a disposable, relatively large-volume, pumping syringe against all movement relative to the support frame. A gripper means for removable attachment to the piston member of the pumping syringe is mounted to the frame for **linear** reciprocation along the axis of the pumping syringe. A crank means, which has an adjustable offset for selecting dosage volume, is drivingly **connected** to a motor drive means and an associated **connecting** rod links the crank means to the gripper means for reciprocally driving the piston member of the pumping syringe. A disposable, dual check valve, tee **connector** is **connected** to a mating **connector** on the pumping syringe. It has an inlet **connected** to the bulk

source container and an outlet port formed into a female Luer **connector** for receipt of the **injection** syringe or other male Luer **connector**. The motor drive means is energized by a control circuit for driving the crank through a single rotation to complete one pump cycle and fill the unit dosage syringe in response to a depression of the foot pedal actuating switch.

50/73 © EPODOC / EPO

PN - US4802650 A 19890207

PR - US19870067940 19870629

AP - US19870067940 19870629

DT - *

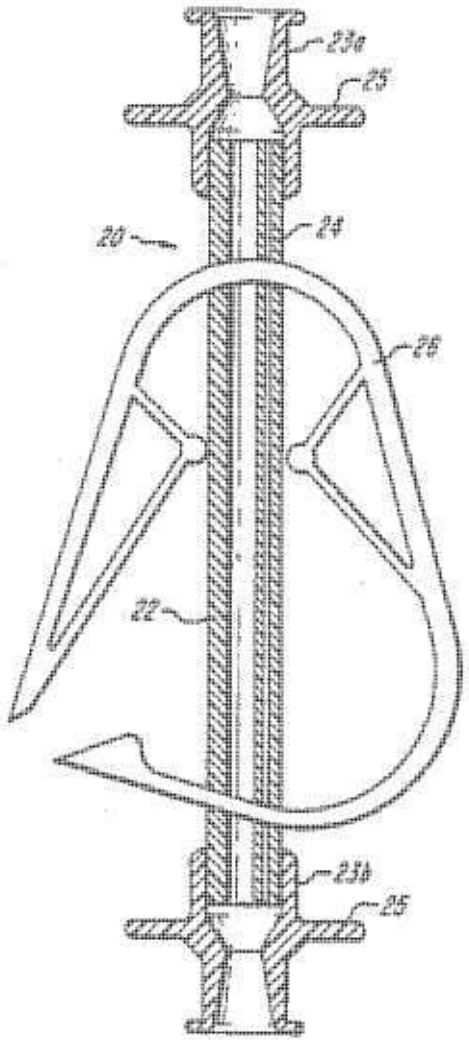
CT - US4267835 A [ ]; US4322054 A [ ]; US4373524 A [ ]; US4673161 A [ ]; US4718634 A [ ]; US4743235 A [ ]

CCI - A61M39/225 ; A61M5/1408

PA - ABIOMED INC [US]

TI - Intravenous drug mixing and flow **device**

AB - A set for the passive infusion of one or more **medications** at a determined rate includes a **fluid** supply tube having first and second branched flow paths with first and second rate-defining flow restrictors. An **injection** port upstream of the first flow restrictor permits **injection** of a drug to be metered, so the first restrictor provides a metered flow of drug plus carrier, and the second restrictor provides a metered flow of diluent/carrier. A Y-**connector**, which may contain a mixing element, combines the two flows to provide the desired output flow and drug concentration. Further



flow branches, each with an **injection** port and a flow restrictor, allow additional drugs to be metered in other concentrations. A flushable flow restrictor segment includes a flexible flow tube which may be pinched off, and a substantially rigid capillary tube integral with the flexible tube. End **connectors** adapt the segment for placement in an infusion **line**, and a pinch clamp surrounds the flow tube, so that the segment may be opened for flushing yet conveniently clamped to a determined flow rate by the pinch clamp. Various delivery rates are achieved with series or parallel arrangements of such flow restrictor segments. A flow restrictor with a branched end **connector connects** to a pressure monitor.

PN - US5308322 A 19940503

PR - US19930048906 19930419

AP - US19930048906 19930419

DT - *

CT - US2117469 A [ ]; US2876770 A [ ];
US2950717 A [ ]; US3270743 A [ ];
US3340869 A [ ]; US3411503 A [ ];
US3473524 A [ ]; US3712295 A [ ];
US3796542 A [ ]; US3911916 A [ ];
US3923058 A [ ]; US3933439 A [ ];
US3938514 A [ ]; US4055177 A [ ];
US4187861 A [ ]; US4243035 A [ ];
US4245655 A [ ]; US4335717 A [ ];
US4411656 A [ ]; US4424057 A [ ];
US4453934 A [ ]; US4501582 A [ ];
US4509109 A [ ]; US4643721 A [ ];
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US4790828 A [ ]; US4795432 A [ ];
US4795441 A [ ]; US4799926 A [ ];
US4804371 A [ ]; US4850977 A [ ];
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US4887998 A [ ]; US4894055 A [ ];
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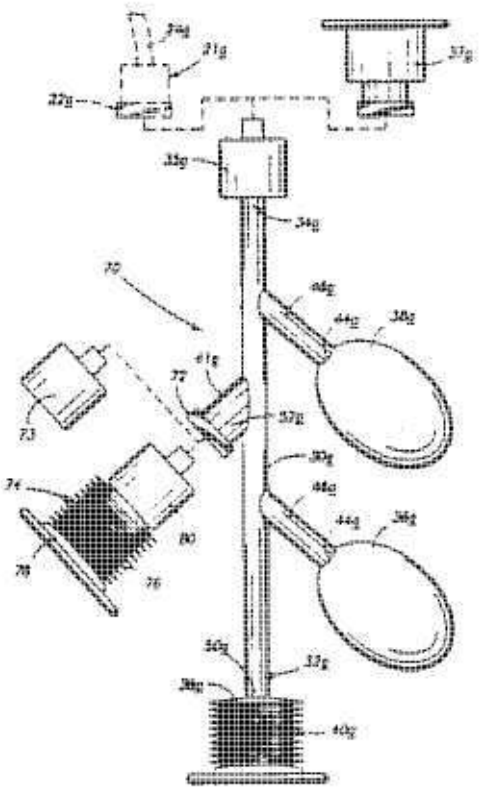

US4935013 A [ ]; US4950250 A [ ];
US4966592 A [ ]; US4978344 A [ ];
US5030210 A [ ]; US5037390 A [ ];
US5046508 A [ ]; US5053017 A [ ];
US5059180 A [ ]; US5092851 A [ ];
US5102388 A [ ]; US5108379 A [ ];
US5140996 A [ ]; US5192274 A [ ];
WO8701944 A1 [ ]; WO9211044 A1 [ ]

CTNP - [ ] Lyo Ject II Dual Chamber, Prefilled Syringe, Journal of Intravenous Nursing, vol. 13, No. 4, p. 261
[ ] TUBEX Blunt Pointe, advertisement
[ ] SAFSITE System, advertisement
[ ] Auto SASH IV Site Flushing System, advertisement

CCI - A61M5/19 ; A61M5/1408 ; A61M39/02 ; A61M39/223

CCA - A61M2005/1403

PA - TENNICAN PATRICK O; PHIPPS L MYLES; MICHAELSEN RUSSELL A

TI - Central venous catheter access system

AB - A central venous catheter (CVC) access system includes a manifold barrel which is **connectable** to an access lumen of a central venous catheter. Integrated flush and reagent syringes are **connected** in **fluid** communication with the manifold barrel. A **fluid** withdrawal syringe and a transfer lumen are also **connected** in **fluid** communication with the manifold barrel. The **fluid** withdrawal syringe allows

withdrawal of waste blood and anti-coagulant from the CVC. The transfer lumen allows **injection** and withdrawal of **fluids** through the CVC access lumen. The flush syringe is initially pre-filled with saline which at the appropriate time is **injected** into the manifold barrel to flush administered **medication** into the patient's blood stream. The reagent syringe is initially pre-filled with a blood anti-coagulant for **injection** into the CVC at the conclusion of the CVC access procedure. A multi-stage **injection** syringe is also disclosed for sequentially **injecting** at least two **fluids** into the manifold barrel. In addition, an improved blood collection **device** is described for use with the CVC access system. The blood collection **device** includes a rigid cylindrical syringe tube and a rubber or rubber-like plunger which is slidably received therein. Instead of a conventional plunger handle, however, a tension **line** extends rearwardly from the plunger. The tension **line** is operable to pull or withdraw the plunger rearwardly, but is inoperable to push the plunger back toward the forward end of the syringe once it has been withdrawn.

52/73 © EPODOC / EPO

PN - US2005120471 A1 20050609

PR - US20040026671 20041231; US20040983552 20041108; US20040751546 20040105; US20030731180 20031209

AP - US20040026671 20041231

DT - *; Rep

CT - || R141 (A1)
US4000742 A [ ];
US4069519 A [ ];

US4135255 A [ ];
US4181985 A [ ];
US4242764 A [ ];
US4366584 A [ ];
US4495018 A [ ];
US4636474 A [ ];
US4638514 A [ ];
US6178568 B1 [ ];
US6671892 B1 [ ];
US3425066 A [ ];
US4371993 A [ ];
US4642820 A [ ];
US4807311 A [ ];
US4989643 A [ ];
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US6192527 B1 [ ];
US4014355 A [ ];
US5295274 A [ ];
US5884345 A [ ];
US6199594 B1 [ ];
US6526602 B2 [ ];
US4195369 A [ ];
US4197594 A [ ];
US4259754 A [ ];
US4441219 A [ ];
US4510630 A [ ];
US4581779 A [ ];
US3251612 A [ ];
US4383339 A [ ];
US4450596 A [ ];
US4924534 A [ ];
US4926509 A [ ];
US5419363 A [ ];
US5754988 A [ ];
US6729355 B2 [ ];
US3670966 A [ ];
US4094018 A [ ];
US4205402 A [ ];
US4206520 A [ ];
US4207628 A [ ];
US4208746 A [ ];
US4335753 A [ ];
US4386928 A [ ];
US4451943 A [ ];
US4596058 A [ ];
US5765238 A [ ];
US5911516 A [ ];
US6073275 A [ ];
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US5652971 A [ ];
US5933881 A [ ];
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US6105179 A [ ];
US4406025 A [ ];
US5809585 A [ ];
US5953766 A [ ];
US6618865 B1 [ ];
US3769127 A [ ];
US4172474 A [ ];
US5960485 A [ ];
US4123807 A [ ];
US4233696 A [ ];
US4551867 A [ ];
US4553274 A [ ];
US4620569 A [ ];
US4967423 A [ ];
US5264262 A [ ];
US5991937 A [ ];
US6321396 B1 [ ];
US6473913 B1 [ ];
US6643856 B2 [ ];
US6968580 B1 [ ];
US2918314 A [ ];
US3549180 A [ ];
US3995326 A [ ];
US4127904 A [ ];
US4237560 A [ ];
US4304016 A [ ];
US4422189 A [ ];
US5477888 A [ ];
US6487732 B1 [ ];
US6665888 B1 [ ];
US6973679 B1 [ ];
US6978492 B1 [ ]

CCI - A47K13/00 ; E03D9/085

TI - Toilet system attached a multi-purpose hand held water sprayer

AB - The invention relates to the new features for the earlier applications of toilet system attached a multi-purpose hand held water sprayer affording personal and environmental hygiene. The sprayer that delivers tempered water includes the lock elements on the components to secure **connection**, various types of spray tip cap for the use of general and **medical** purposes, an **injection apparatus** to supply external **fluid**, a fortified flexible hose, a water hammer arrester or air chamber to reduce water pressure shock, a water heater, a valve to control water flow, a mixing valve, check valves for the mixing valve to stop in reverse flow, a water pressure regulator with a

pressure meter, a return **line** with a check valve for guarding against hot water spike, a thermometer at the outlet, a holder for placement of the sprayer, and various types of valves and sources for the hot and cold water supply. The new features also include the fortified flexible hose having the rollup attachment of middle layers over the flange for reinforcement.

53/73 © EPODOC / EPO

PN - KR20040052659 A 20040623

PR - KR20040028563 20040426

AP - KR20040028563 20040426

DT - I

CNOI - C02F1/50 ; C02F1/52 ; C02F11/14

CNOA - C02F2201/005

PA - ILLEUTECH CO LTD

TI - **DEVICE** FOR **INJECTING MEDICINES** BY USING SPEED OF CURRENT

AB - PURPOSE: Provided is a **device** for **injecting medicines** by using the speed of a current where the amount of **injected medicine** is proportional to the speed of the flowing of a **fluid**. CONSTITUTION: The **device** comprises a rotating **device**(10) installed to a space where a **fluid** is flown and having a rotating body(11) rotated by the resistance of the speed of the **fluid**, a **medicine** pressurizing **device**(20) comprising a **medicine** inlet(21), a **medicine** outlet(22) and a cylinder(23) pressurizing the supplied **medicine** to discharge it through the **medicine** outlet, a **medicine** flowing-in hose(40) having a means for preventing flowing backward(41) one side of which is **connected** to a **medicine** storing tank and the other side of which is **connected** to the **medicine** inlet, a **medicine** discharge hose(50) **connected** to the **medicine** outlet of the **medicine** pressurizing **device** to transfer the **medicine** discharged through the **medicine** outlet to a **medicine injecting** part and having a means for preventing flowing backward(51) and a motion conversion **device**(30) making a piston(23a) of the cylinder do **linear** motion by converting rotary motion of the rotating **device** into **linear** motion.

54/73 © EPODOC / EPO

PN - KR20020053026 A 20020704

PR - JP20000394867 20001226

AP - KR20010085033 20011226

DT - I

CCI - A61M5/14

CCA - A61M5/162 ; A61M5/165 ; A61M39/02 ; A61M39/24

PA - JMS CO LTD

TI - METHOD OF COMPOSING INFUSION **LINE**

AB - PURPOSE: Provided is a method of composing an infusion **line** or transfusion **line** used as a conduit **line** for **connecting** a supply source of a **medical fluid** to a member for access to a patient such as a catheter, an **injection** needle and so on. CONSTITUTION: The method of composing an infusion **line** includes the steps of: classifying components for forming the infusion **line** into unit groups comprising a spike unit(1), a main tube unit(2), an **injection device** unit(3), an infusion filter unit(4), and a one-way valve unit

(5); providing plural kinds of units for each unit group according to different specifications, each unit being formed of one or more components combined based on a function of the respective unit; determining a combination of the unit groups by allowing the spike unit and the main tube unit to be indispensable and selecting at least one of the unit groups from the left unit groups; determining an arrangement of the selected unit groups, with the spike unit being positioned at one end thereof; selecting at least one kind of the units from each of the unit group based on the determined combination; and combining the selected units according to the determined arrangement to compose the infusion **line**, with the end on the distal side relative to the spike unit being composed of a **connector** used for a **connection** to a member for access to a patient.

55/73 © EPODOC / EPO

PN - KR20020006817 A 20020126

PR - KR20000040257 20000713

AP - KR20000040257 20000713

DT - I

CNOI - B05B9/007 ; B05B9/03 ; B05B12/02 ; B05D1/02

PA - G INTEK CO LTD [KR]

TI - INTERMITTENT **FLUID INJECTION** METHOD AND **DEVICE** FOR THE SAME

AB - PURPOSE: An intermittent **fluid injection** method and **device** for the same is provided to improve operational facility, and to expand applicability thereof, including **medical** fields, industries, arts and agriculture. CONSTITUTION: The intermittent **fluid injection device** consists of an **injection device** main body including a **fluid** pipe **line** whose front end is penetrated in a longitudinal direction of a central part for the **fluid** to move and an air pathway disposed at an external side of the **fluid** pipe **line**, which decreases the internal pressure of the **fluid** pipe **line** using the compressed air force for discharging the **fluid**; a nozzle, which is combined with an external side of the front end of the main body at a designated interval; a **fluid** supply pipe, one side being **connected** to the **fluid** pipe **line** and the other side being **connected** to a bowl containing the **fluid**; and an intermittent **fluid injection device** for controlling the **fluid** flow by making the outside air flow into the **fluid** supply pipe.

56/73 © EPODOC / EPO

PN - JP2007252405 A 20071004

PNFP - JP4444224B B2 20100331

PR - JP20060076743 20060320

AP - JP20060076743 20060320

DT - I

CCI - A61M5/1413 ; A61M5/16827

CCA - A61M5/16831 ; A61M2205/3569

FI - A61M5/00&330; A61M5/142; A61M5/168&510

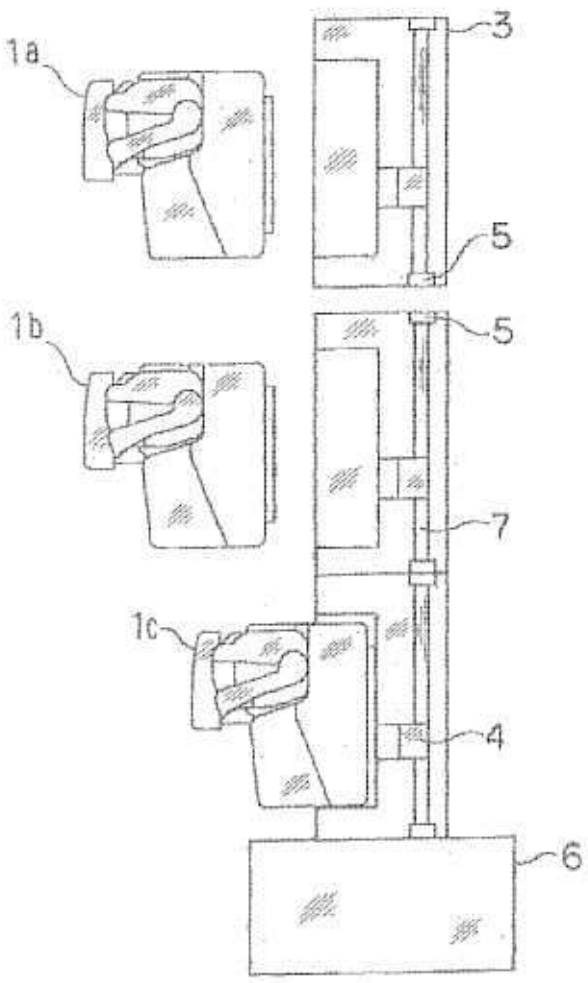
FT - 4C066/AA07; 4C066/BB02; 4C066/CC01; 4C066/DD12; 4C066/EE14; 4C066/QQ17; 4C066/QQ77; 4C066/QQ82; 4C066/QQ83; 4C066/QQ92

PA - (A)
JAPAN SERVO; JMS CO LTD

TI - (A)
CONTROL SYSTEM FOR TRANSFUSION DEVICES

AB - (A)
PROBLEM TO BE SOLVED: To solve various problems such as the need for **connecting** every unit of transfusion devices requiring complicated work, as for the wiring of communication **lines** and power supply **lines** to be **connected** to the respective transfusion apparatuses in the case of application where individual transfusion devices are inserted into a plurality of racks and the racks are stacked, users' delay in noticing alarmed state of the transfusion devices with no alarm outputted due to a fault in the alarm output function of a certain **apparatus** and the delivery left stopped of a **medical fluid** without repeating the operation of starting the liquid **injection**, once the alarmed state is released by a user, when an alarm causes a certain **device** to stop the

FIG. 6



operation of the liquid **injection**.

- SOLUTION: In the control system for the transfusion devices, the power supply **lines** and communication **lines** are mounted on the respective devices with one common **connector** and a network is employed as a communication system to accomplish a **connection** in the wiring of the power supply **lines** and the communication **lines** finally with the stacking of the racks. The states of the individual transfusion devices communicate with each other through the network. This realizes the outputting of alarms and the operation of the liquid **injection** among a plurality of devices.
- COPYRIGHT: (C)2008,JPO&INPIT

57/73 © EPODOC / EPO

PN - JPH0482564 A 19920316

PR - US19880216512 19880708; US19890301628 19890124; US19890351981 19890515

AP - JP19890174111 19890707

DT - I

CCI - A61M5/14228 ; A61M5/142

CCA - A61M5/16827 ; A61M2205/12 ; A61M5/14244 ; Y10S128/12

FI - A61M5/00&300; A61M5/14&481; A61M5/142&502; A61M5/142&520; A61M5/168&504

FT - 4C066/AA07; 4C066/BB01; 4C066/CC01; 4C066/DD11; 4C066/EE11; 4C066/FF01; 4C066/HH01; 4C066/QQ23; 4C066/QQ48; 4C066/QQ52

PA - AI FUROO CORP

TI - **INJECTION** PUMP **DEVICE**

AB - PURPOSE: To provide a small-size and light-weight **injection** pump used by a patient able to walk by providing a pump mechanism which is separately and accurately controllable in relation to a plurality of **fluid** sources, in a single moving housing. CONSTITUTION: **Fluid** from a plurality of **fluid** cartridges 20 is discharged. A pump housing 10 is provided with a liquid crystal display 12, a keyboard 14, and a programming jack. The cartridges 20 are provided with one or more pump tube mount parts 24 and a Luer **connector** 26 in an outside edge of the pump tube mount parts 24 becomes an exit for liquid fed to an output internal cavity. The pump is provided with a plurality of **linear** peristatic pumps, each pump rotates a cam shaft, and this cam shaft selectively pressurizes a cam follower including an output valve, a pump plunger, and

an input value. A programmable microprocessor is provided on a control circuit board, a desirable **injection** order and rate are programmed in a controller board via a programming jack, and a **medical** prescribed of a plurality of liquid **medicines** is selected from a wide range.

58/73 © EPODOC / EPO

PN - JPH06319800 A 19941122

PNFP - JP2707042B B2 19980128

PR - JP19930136456 19930514

AP - JP19930136456 19930514

DT - I

FI - A61M25/00&420H; A61M25/06&502; A61M39/06&110; A61M5/14&369B; A61M5/14&369F; A61M5/14&445Z; A61M5/14&459J

FT - 4C066/AA07; 4C066/BB01; 4C066/CC01; 4C066/CC10; 4C066/DD01; 4C066/EE11; 4C066/EE12; 4C066/FF01; 4C066/FF04; 4C066/KK01; 4C066/LL09; 4C066/PP01; 4C167/AA02; 4C167/AA21; 4C167/BB02; 4C167/BB08; 4C167/BB17; 4C167/BB20; 4C167/BB33; 4C167/BB34; 4C167/CC08; 4C167/FF10

PA - (A)
HAKKO DENKI SEISAKUSHO KK

TI - (A)
INDWELLING NEEDLE AND MANUFACTURE THEREOF

AB - (A)
PURPOSE:To enable immediate adaptation at an emergency with the simplification of **connecting** operation by a method wherein a cathetel tapered to be left in a blood vessel of a patient is **connected** to a Y-shaped branch tube body to be molded integral while a puncture needle built in the cathetel is provided free to slide. CONSTITUTION:An indwelling needle 12 as Y-shaped tube body contains a straight pipeline 10 and a tapered part 10c provided with a tapered cathetel part 10a and a horizontal side hole 10b is formed integrally. Also formed integral are a branch pipeline 10d to **inject** a **medical fluid** or the like to the side of the other end, a check valve room 10e with a rubber check valve 10h fixed thereon, a **connector** section 10f having a stop plug 10i fitted thereinto and a **connector** 10g to be **connected** to a **connector** of a **line apparatus** for transfusion or the like. The straight pipeline 10 and the catheter part 10a and the tapered part 10c are formed **linear** and a puncture needle 11 is built into the parts being allowed to slide and the edge 11a is made to get into or out of the tapered part 10c.

59/73 © EPODOC / EPO

PN - JPH037167 A 19910114

PNFP - JP3184831B B2 20010709

PR - JP19890132516 19890525

AP - JP19890132516 19890525

DT - I

FI - A61M5/00&320; A61M5/14&345; A61M5/168&504; A61M5/168&520; A61M5/172&500; A61M5/36&500; A61M5/38&500

FT - 4C066/AA07; 4C066/BB01; 4C066/CC09; 4C066/DD01; 4C066/DD11; 4C066/DD12;

4C066/DD16; 4C066/EE11; 4C066/FF01; 4C066/LL11; 4C066/MM03; 4C066/MM08; 4C066/QQ15; 4C066/QQ17; 4C066/QQ22; 4C066/QQ46; 4C066/QQ47; 4C066/QQ58; 4C066/QQ64; 4C066/QQ78; 4C066/QQ92

PA - (A)
FRESENIUS AG

TI - (A)
APPARATUS FOR DOSING CONTINUOUSLY AND SIMULTANEOUSLY A PLURALITY OF TRANSFUSION OF DRUG SOLUTION

AB - (A)
PURPOSE: To continuously administer dose of several **fluids** or **medicines** by making a flow element adjust the flow into a pump and making a control unit close valves to stop operation of the **apparatus** by means of the flow element. CONSTITUTION: **Injection** pumps 1 and 2 are jointed with **injection** liquid containers 25 and 26 while **injection** pumps 1-4 are **connected** to delivery conduits 18-21 and 36. Clamp valves 5-11 of the delivery conduits are **connected** to a central process control unit 17 as far as it concerns signals. The central process control unit 17 is **connected** with the **injection** pumps 1-4 so that delivery performance by the **injection** pumps comes under control of prescribed program. The delivery conduits 18-21 and 36 as well as a delivery **line** 35 to a central blood pressure measuring means 15 are jointed with a patient conduit 23 through a joint piece 27. To the patient conduit 23, are jointed an air sensor 13, flow element 14 and additional valve 12, and further **connected** to the central process control unit 17. Flow interception to a patient is detected by the flow sensor 14, which causes corresponding valves in the delivery conduits and a safety valve 12 an emergency, shut down through the central process control unit 17.

60/73 © EPODOC / EPO

PN - JPH0422351 A 19920127

PR - JP19900129834 19900517

AP - JP19900129834 19900517

DT - I

FI - A61B17/22&330; A61M1/00&500

FT - 4C060/EE02; 4C060/EE03; 4C060/EE19; 4C077/AA25; 4C077/CC02; 4C077/DD19; 4C077/FF01; 4C077/KK27; 4C160/EE03; 4C160/EE04; 4C160/EE05; 4C160/EE19; 4C160/FF48; 4C160/JJ23; 4C160/JJ24; 4C160/JJ33; 4C160/JJ35; 4C160/MM43

PA - OLYMPUS OPTICAL CO

TI - DISSOLUTIVE THERAPY **DEVICE**

AB - PURPOSE:To give the energy of an ultrasonic vibrator effectively to a lesion by **injecting** a **medicine** for dissolution of the condensate in a vital body, furnishing a catheter for sucking a **fluid** containing **medicine**, and providing a vibratory wave-irradiating means to give vibratory wave to the part, into which the **medicine** is **injected**, and to oscillate the catheter. CONSTITUTION:An ultrasonic driver circuit 14 supplies a drive signal to an ultrasonic vibrator 12 via a **connector** 16 and signaling **lines** 17a, 17b and brings the vibrator 12 into vibrating. The vibration is conducted to a vibratory member 18, and further to a gallbladder 3 from the radiation surface 19 via water bag 20 and human body 2 surface. The vibration is further conducted to a back mass 21, and a catheter 5 fixed thereto vibrates, and the vibratory wave propagates to a calculus 4 to promote its

destruction. Because the humors have a greater specific gravity than the **medicine** when it is **injected** in gallbladder 3, the humors sink to the bottom of the gallbladder 3. It may thus happen that the **medicine** does not reach the calculus 4 and it remains not dissolved. At this time, an appropriate treatment can be resorted to, such as sucking the humors.

61/73 © EPODOC / EPO

PN - JPH08280817 A 19961029

PNFP - JP3525550B B2 20040510

PR - JP19950116424 19950418

AP - JP19950116424 19950418

DT - I

FI - A61B5/14&300A; A61M39/04; A61M39/22; A61M5/00&300; A61M5/14&459L; A61M5/14&510

FT - 4C066/AA09; 4C066/BB01; 4C066/CC01; 4C066/FF05; 4C066/JJ05; 4C066/JJ06; 4C066/LL08

PA - (A)
JMS CO LTD

TI - (A)
FLUID DOSING OR SAMPLING **DEVICE**

AB - (A)
PURPOSE: To prevent an **injection** needle from mispiercing or penetrating the mixed **injection** part by allowing a female lure member to slide in the vertical direction with respect to a cylindrical projection, and thereby performing mixed **injection** of infusion liquid into the **line** only through piercing of the needle. CONSTITUTION: A **fluid** dosing or sampling **device** is **connected** with a liquid infusion **device**, and when the service condition is such that no mixed **injection** is made with an **injection** needle 5, a female lure 2 is intruded to the hollow conduit 4 side in the shortened state so as not to constitute an obstacle. When mixed condition is to be made, the **injection** needle 5 should be used as piercing an elastic member 1, and the female lure member 2 is slid with respect to a cylindrical projection 3 and elongated so that the needle 5 does not penetrate the elastic member 1 and pierce the rear part 7 of the mixed **injection** part of a tube. Because the needle base 6 is fitted in the female lure member 2, it is practicable to fix a syringe containing **medicine**, etc., to the mixed **injection** part, and mixed **injection** from the side **injecting line** is executed upon piercing the elastic member 1 with the needle 5.

62/73 © EPODOC / EPO

PN - GB189709501 A 18980226

PR - GBT189709501 18970414

AP - GBD189709501 18970414

DT - I

PA - JOHNSTON DAVID

TI - An Improved **Injector** for **Medical** Purposes.

AB - 9501. Johnston, D. April 14. **Medicines**, administering; inhalers.-An **apparatus** for **injecting medicated** moist, dry, or heated air, more particularly for use in the treatment of ear, nose, throat, and lung diseases. The **medicated fluid** or material is contained in a receptacle d, into which air is forced through a tube g in **connection** with an air ball i, and from which it passes through a tube j, containing a thermometer k, to a terminal m adapted to fit into the nose, mouth, &c. The receptacle d may be supported in a water bath b, heated by a lamp c, or it may be cooled by ice. In a modification, indicated in dotted **lines**, the air is heated after being **medicated** by passing it through a U-tube contained in a water bath s, heated by a lamp c<1>. Another modification is described, in which the means for heating or cooling the air are dispensed with.

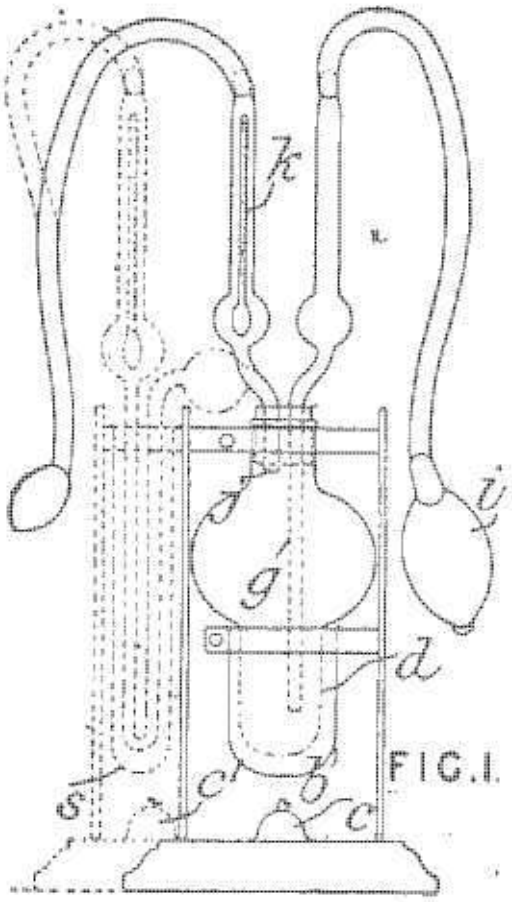


FIG. I.

PN - **GB1218137** A 19710106

PR - US19670663035 19670824

AP - GB19680035766 19680726

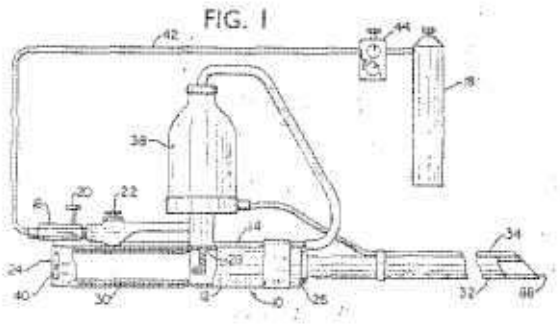
DT - *

CCI - **A61D7/00**

PA - MAGRATH JOSEPH M [US]

TI - **FLUID**-ADMINISTERING **APPARATUS**

AB - 1,218,137. Respiratory **apparatus**. J. M. MAGRATH. 26 July, 1968 [24 Aug., 1967], No. 35766/68. Headings A5R and A5T. **Apparatus** for administering a pressurised **fluid** into the body of an air-breathing vertebrate comprises an elongate tubular handle 10 open at one end 24 to the atmosphere and arranged at the other end for communication with the interior of the body of the vertebrate, there being a venturi portion in the handle arranged to cause a reduced pressure at the said other end, and a conduit 34 for discharging the pressurised **fluid** into the vertebrate, there being valves controlling **fluid** flow to the conduit and to the venturi portion. As shown, the **apparatus** includes a supply 18 of oxygen under pressure which is available to the patient via a **line** 42, a manifold 16, a control valve 20, a conduit 14, an optional container 38, and the tracheal conduit 34. The oxygen is also available via the manifold 16 and a control valve 22 to an inlet 28 arranged in a tube 12 **connected** to the tracheal conduit 32, it being stated that the **injection** of the oxygen through the inlet 28 into the tube 12 and from thence to atmosphere through an open end 24 causes a partial vacuum to



form in the tube 12 which provides a suction effect at the inlet 88. The tube 12 also has an opening 26 to atmosphere and a valve 40 which may be alternately opened and closed so as to cyclically control the suction effect for causing artificial respiration. The conduit 32 may 'be used to withdraw mucous &c. from the patient and the container 38 may contain a **medicament** which is entrained in the oxygen supply and acts on any mucous in the patient. In an embodiment (Figure 3, not shown), the conduit 34 (68) is within the conduit 32 (66) and a third **connection** (64, 70) to the oxygen supply leads to an inflatable cuff (72) on the conduit (66). In a further embodiment (Figure 5, not shown), the conduits 32, 34 are replaced by a face mask (74) and the open end 24 (without a valve 40) may be opened and closed by the hand of the operator. It is stated that the **apparatus** may be used to induce a cough or to treat an infected uterus.

PN - **GB1300531** A 19721220

PR - GB19700000163 19700102

AP - GB19700000163 19700102

DT - **

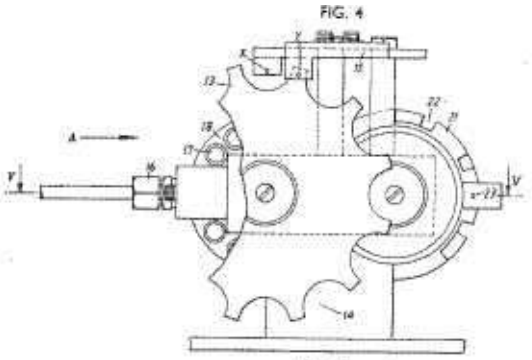
CCI - **B65B57/10**

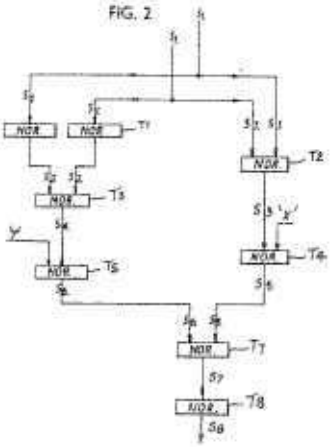
CCA - **Y10T137/2278**

PA - ASPRO NICHOLAS LTD [GB]

TI - ARTICLE SENSING **APPARATUS**

AB - 1300531 Wrapping-up tablets ASPRO-NICHOLAS Ltd 21 Dec 1970 [2 Jan 1970] 163/70 Heading B8C [Also in Division F1] In **apparatus** wherein each of a plurality of small articles, e. g. **medicinal** tablets (TA), Fig. 3 (not shown), are delivered in time-spaced succession down one or more shoots and then **injected** between two plies of packaging material which are reeled about each tablet by crimping rollers (CR<SP>1</SP>, CR<SP>2</SP>) having pockets in their peripheries corresponding to positions occupied by the tablets and often which sealing the plies containing the tablets are cut and passed to a delivery station, a sensing **device** is located in each feed path between the shoot bottoms and the rollers and produces a tablet-present signal in the output **line** of a **fluid** relay and each, e.g. two such **fluidic** signals S 1 , Fig. 2, are **coupled** by NOR elements (1 to 5, 7 and 8) to **fluid** responsive means which control tablet feed, packing and reject operations; the **coupling** circuit having repeatable first and second timespaced periods during which sensor signals S 1 can pass to the responder, and which signals S 1 are prevented from passing during the mute intervals between said periods.





NOR 4 and NOR 5 have second central inputs X, Y to which compressed air is constantly applied except when interrupted by peripheral projections on a disc 13, Fig. 4, driven in timed relation to the tablet feed. During satisfactory operation and assuming both signals S 1 present i.e. tablets present when they should be so the outputs S 2 , S 3 of NOR 1, NOR 2 are zero, output S 4 of NOR 3 is unity, output S 5 of NOR 4 is zero since "X" is blowing, output S 6 of NOR 5 is zero since "Y" is zero and S 4 =1. Output S 7 of NOR 7 is 1 therefore output S 8 of NOR 8 is zero i.e. no stopping or reject signal. When no tablets are present when they should be, then S 1 =0, X=1, Y=0 and S 8 =1. When no tablet is present when it should not be present i.e. S 1 =0 then with Y=1, X=0, S 8 =0 the gap is ready to accept a tablet. Again when S 1 =1, Y=1, X=0, S 8 =1 indicates that a tablet is present when none should be present. Finally when both X and Y are unity and S, = 0 then S 8 =0 and this state corresponds to the mute period.

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PN - WO2008029051 A2 20080313

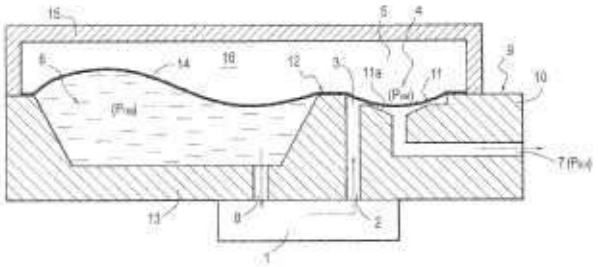
PNFP - WO2008029051 A3 20080522

PR - FR20060053560 20060904

AP - WO2007FR51863 20070903

DT - **

CT - |EP| ISR (A3)
EP0420620 A2 19910403
[X] (INFUSAID INC [US])
[X] 1-32
* the whole document *;
US5785681 A 19980728
[A] (INDRAVUDH VIROTE [US])
[A] 1-32



* the whole document *;
WO9015929 A1 19901227
[DA] (WESTONBRIDGE INT LTD [IE], et al)
[DA] 1-32
* page 4, line 27 - page 7, line 12; figure 1 *;
WO9532013 A1 19951130
[A] (ELAN MED TECH [IE], et al)
[A] 1-32
* the whole document *

CCI - A61M5/16881 ; A61M5/14244

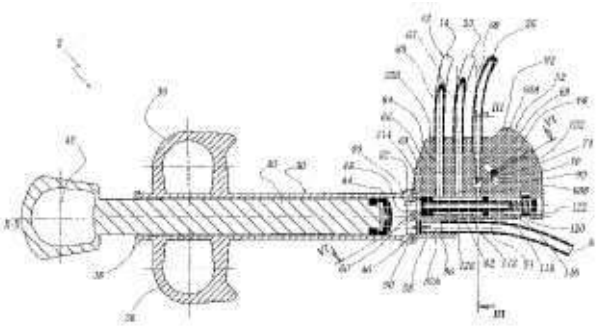
CCA - A61M2005/14264 ; A61M2205/0244

PA - (A2 A3)
DEBIOTECH SA [CH]; SCHNEEBERGER NIKLAUS [CH]; VALLET VERONIQUE [CH]; CHAPPEL ERIC [FR]

TI - (A2 A3)
LIQUID DELIVERY **DEVICE** COMPRISING A PUMP AND A VALVE

AB - (A2 A3)
The invention relates to a liquid delivery **device** comprising a pump (1) and an anti-siphon valve (4) external to the pump (1), having an inlet pipe (3) **connected** to the outlet **line** (2) of the pump (1) and an outlet pipe (7), between which pipes are a seat (lia) and a moving part (11), which two are able to interact and define, between the inlet pipe (3) and the outlet pipe (7), a leaktight liquid flow region, said moving part (11) being able to move from an open position allowing liquid to flow in said flow region, to a closed position in which the moving part (11) contacts the seat (lia) of the valve (4) and prevents flow through said flow region, said moving part (11) being subject to the pressure of a reference chamber (5) which is not in **fluid**

communication with the outlet pipe. Applicable to the making of a pump for **injecting** a **medicinal** liquid.



66/73 © EPODOC / EPO

PN - WO2004058331 A1 20040715

PNFP - WO2004058331 A8 20050909

PR - FR20020016432 20021220

AP - WO2003FR03854 20031219

DT - **

CT - |EP| ISR (A1)
US2002123737 A1 20020905
[Y] (HART COLIN P [US], et al)
[Y] 1-11
* paragraph [0019] - paragraph [0023] *
* paragraph [0027] - paragraph [0028] *
* figures 1,2 *;
US2002151854 A1 20021017
[Y] (DUCHON DOUG [US], et al)
[Y] 1-11
* paragraphs [0064] , [0065] , [0068] *
* paragraph [0081] - paragraph [0085] *
* paragraphs [0092] , [0112] *
* paragraph [0139] - paragraph [0142] *
* paragraphs [0136] , [0146] *
* figures 1,2,7 *;
US4645496 A 19870224
[Y] (OSCARSSON ROLF A [US])
[Y] 1-11
* column 10, line 25 - line 56 *
* column 11, line 55 - column 12, line 20 *
* figures 1-4 *;
US3859985 A 19750114
[A] (ECKHART EDGAR O)
[A] 1-11
* column 4, line 5 - line 11 *
* column 6, line 62 - column 7, line 11 *
* figures 2-4,9 *;
EP1074221 A2 20010207
[A] (GRIFOLS GRUPO SA [ES])

[A] 1-11
* paragraph [0001] - paragraph [0003] *
* paragraphs [0027] , [0029] *
* paragraph [0030] *
* figure 2 *

CCI - A61M5/007

CCA - A61M5/204 ; A61M39/223

PA - (A1)
SEDAT [US]; DENOLLY PASCAL [FR]
- (A8)
SEDAT [FR]; DENOLLY PASCAL [FR]

TI - (A1 A8)
DISTRIBUTION **DEVICE** FOR A SUPPLY NETWORK FOR SUPPLY OF **MEDICAL FLUIDS** TO A PATIENT

AB - (A1 A8)
The distribution **device** comprises a syringe body (30), a distributor (32), a supply tube (56), for a first active **medical fluid**, opening out into the syringe body (30), an **injection** tube (60) for said active **medical fluid**, **connected** at a distal end (46) to the syringe body (30), a pressure tube (64) for **connection** to a patient by a pressure **line** (12) and a tube (66) for measurement of venous or arterial pressure. The pressurised tubes for **injection** and measurement open out into a chamber (62) defined within the body (32B) of the distributor (32). The **device** comprises a rinsing tube (68) which is defined at least partially by the body (32B) of the distributor (32), which opens out into the chamber (62) and which is provided with a manually operated valve (70, 80).

PN - EP0972529 A2 20000119

PNFP - EP0972529 A3 20030326

- EP0972529 B1 20050323

PR - DE1998131950 19980716

AP - EP19990112993 19990706

DT - *; Rep

CT - || STSE (A3)
WO9720493 A1 19970612 [A] (KEN MASKINFABRIK A S [DK], et al)
[A] 1-14
* page 4, line 9 - page 9, line 18; figure - *;
US5223229 A 19930629 [A] (BRUCKER JEFFREY P [US])
[A] 1
* column 6, line 16 - column 7, line 32; figures 2,5 *;
FR1565407 A 19690502 [A] (FERTE ALBERT)
[A] 1
* the whole document *;
DE19509877 A1 19961002 [A] (ERLEN ELEKTROTECHNIK ELEKTRONI [DE])
[A] 1
* abstract *;
EP0870511 A2 19981014 [PA] (DISCHER SANITAETSTECHNIK GMBH [DE])
[PA] 1-14
* the whole document *

CCI - A61G9/02 ; A61L2/18

PA - (A2)
MEIKO MASCHINENBAU GMBH & CO [DE]
- (A3 B1)
MEIKO MASCHB GMBH & CO [DE]

TI - (A2 A3 B1)
Device for washing and disinfecting **medical** ware

AB - (A2)
The heater (6) is a steam generator below a steam head space (2) of the water tank. The head space is separated down to the lowest water level (10) by a partition (3) forming a steam barrier. Steam forming above the water level (9, 10) of the evaporator is led through a steam **line** into the cleaning chamber (13). Preferred features: The head space is below the water supply (4) to the tank. Sensors and solenoid valves in the hot and cold water pipes control the water level. The partition is a metal sheet bulkhead, which is readily removed for maintenance purposes. The heater is contained in an open-topped tank (7). A lime scale inhibitor vessel (15) is **connected** to this tank. The steam **line** extends from an overflow (5) of the main tank, located in the steam head space. The pumping system for hot water from the main tank includes valves and **injection** nozzles in the cleaning chamber. Solenoid valves supply the nozzles as required. Cleaning **fluid** (14) is dosed on the suction side of the pump. The main water tank and hot water system can be emptied, allowing it to be steamed for disinfection. An overflow system (17) is included, preferably reaching the lowest point of the U-bend (16). An over pressure vent valve (18), preferably a solenoid valve, is **connected** to the top of the cleaning chamber, and vents to the exterior or the drain. A variant of the water supply inlet is described.

PN - EP0852152 A1 19980708

PNFP - EP0852152 B1 20030402

PR - FR19970000235 19970106

AP - EP19970410144 19971218

DT - *; Rep

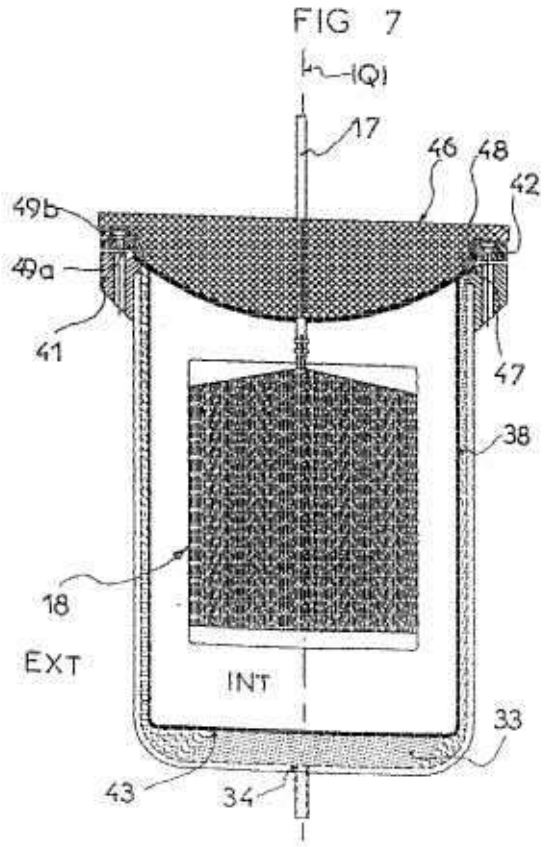
CT - || STSE (A1)
EP0676214 A1 19951011
[AD] (MEDEX SA [FR])
[AD] 1-12
* column A; figures 1-4,7,10,11 *

CCI - A61M5/1486 ; A61M5/155

PA - (A1 B1)
MEDEX SA [FR]

TI - (A1 B1)
Medical liquid **injection device**

AB - (A1)
A **medical injection** or infusion **device** deforms a flexible pouch (18) containing the **medical** liquid (19), forcing the **medical fluid** out. The pouch is watertight and has an exit opening **connected** to the main **line** (4), linked to the e.g. catheter or hypodermic needle (3).This is achieved by pressure transmitted from an inert working **fluid**, which fills a case (20) in which the pouch is located. In this new unit, the case has a longitudinal plane of symmetry. Its top opening (36) has e.g. a lid or other seal which is opened to introduce the pouch, and then closed, sealing the enclosure. The transverse section of the case is an elongated oval or ovoid.



PN - EP0728509 A2 19960828

PNFP - EP0728509 A3 19970502
- EP0728509 B1 19991229

PR - DE1995106506 19950224

AP - EP19960102548 19960221

DT - *; Rep

CT - || STSE (A3)
EP0646380 A1 19950405
[PYD] (FRESENIUS AG [DE])
[PYD] 1-3
* column 6, line 3 - column 7, line 1; figure 1 *;
US4368118 A 19830111
[Y] (SIPOSS GEORGE G [US])
[Y] 1-3
* column 3, line 65 - column 4, line 26; figures 2-5 *;
US3992172 A 19761116
[Y] (CLARK CHARLES R)
[Y] 1-3
* column 3, lines 26-42; figures 1,2 *;
US4648890 A 19870310
[Y] (KIDWELL JOHN H [US], et al)
[Y] 1-3
* column 2, lines 34-44; figures 2,3 *;
EP0284675 A1 19881005
[Y] (FOSTER WHEELER POWER PROD [GB])
[Y] 1-3
* column 3, lines 4-12 *
* column 3, lines 41-57; figures 1-3 *;
US3296779 A 19670110
[A] (DAMAN ERNEST L, et al)
[A] 1-3
* column 3, lines 15-39; figures 2-4,10 *

CCI - A61M1/3627 ; B01D19/0057

CCA - A61M2206/16

PA - (A2 A3)
FRESENIUS AG [DE]
- (B1)
FRESENIUS MEDICAL CARE DE GMBH [DE]

TI - (A2 A3 B1)

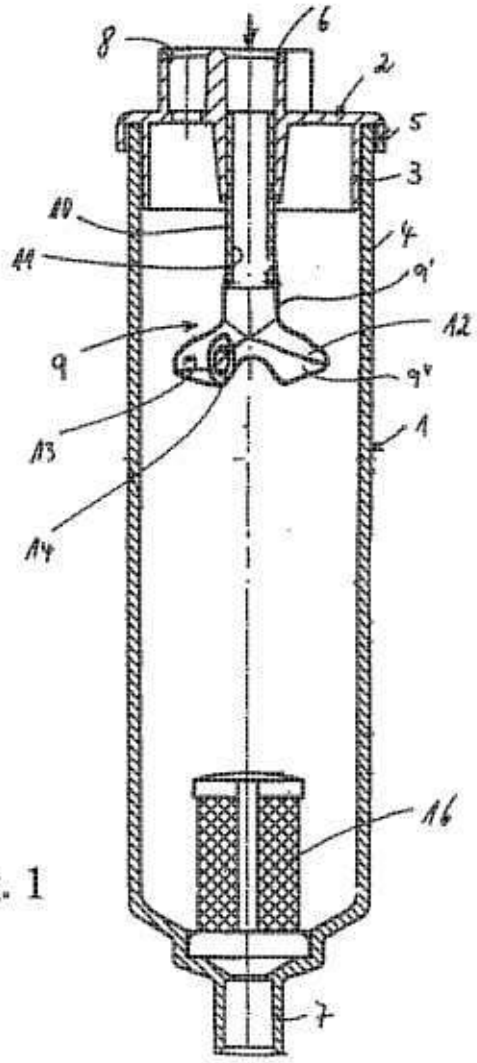


Fig. 1

Apparatus for eliminating gas bubbles from **medical** liquid

AB - (A2)
The appts. for the separation of air bubbles from a **medical fluid**, esp. blood, has an inlet **connection** (6) along the longitudinal **line** of the cylindrical chamber (1). A flow guide (9) is at the inlet **connection** (6), with a flow tube (10) centrally along the chamber (1) **line**, leading to at least two flow guide tubes (12,13) which extend in a curve from the chamber axis into a tangent at the chamber wall. All the components are of an **injection** moulded transparent plastics material.

70/73 © EPODOC / EPO

PN - **EP0533313** A1 19930324

PR - US19910761306 19910917

AP - EP19920304752 19920527

DT - **

CT - || STSE (A1)
EP0380862 A2 19900808 [X] (FISHER SCIENTIFIC CO [US]);
WO9015638 A1 19901227 [YD] (SCIENCE INC [US]);
US4419096 A 19831206 [AD] (LEEPER HAROLD M [US], et al)

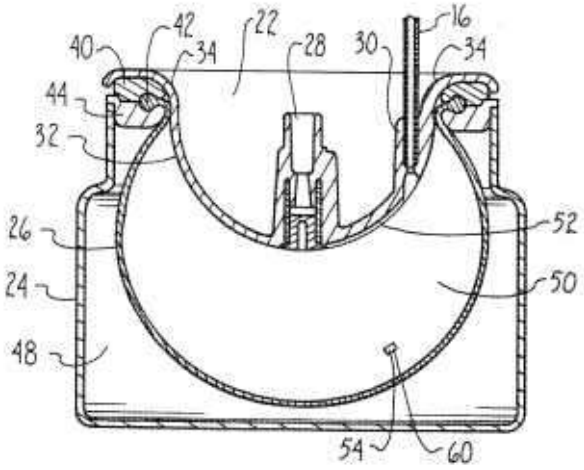
CCI - **A61M5/152**

CCA - **A61M5/14244**

PA - IMED CORP [US]

TI - Portable infusion **device**.

AB - A **fluid** pump (10) for infusing **medical fluids** to a patient includes a housing (22) having an inlet port (28) and an outlet port (30). The housing further includes a substantially hemispherically shaped surface (32) which is circumscribed by a



periphery (34). An elastomeric membrane (26) is attached to the periphery of the surface and is stretched over the surface to place the membrane in its region of nonlinear elasticity. With this combination, a potential **fluid** chamber (50) is established between the surface of the housing and the stretched membrane. In operation, **fluid** is **injected** through the inlet port and into the potential chamber between the housing and the elastomeric membrane to fill the chamber with the desired **medical fluid**. A **fluid line** is **connected** to the outlet port of the pump and a flow restrictor is **coupled** with the **fluid line** to control the flow of **fluid** from the chamber. **Fluid** flows from the chamber as a result of the nonlinear contraction of the elastomeric membrane. <IMAGE>

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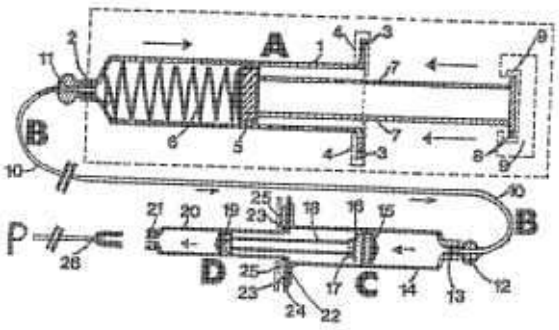

PN - **DE19623779** A1 19970821

PR - DE1996123779 19960616; DE1996105929 19960217; DE1996114351 19960411

AP - DE1996123779 19960616

DT - *

CCI - **A61M5/14566**

CCA - **A61M5/14526**

PA - LANG VOLKER [DE]

TI - Simplified low-cost **injection** unit for syringe pump, comprising hydraulic devices, e.g. piston-cylinders **connected** back to back

AB - This new **injection** unit (A,B,C,D), consists of at least two hydraulic devices interconnected by a **fluid**-filled, pressure-resisting **line**. Preferably the hydraulic **device** is a hydraulic

cylinder (14), with tightly-sealing piston. Alternatively a hydraulic cylinder with a rolled diaphragm and pressure plate, are used. Further variations are described. One of the hydraulic devices performs the duty of a pump and is situated remotely from the patient. The other, close to the patient, is a hydraulic **device** performing the duty of an actuator, which advances the syringe to **inject** the **medication**. The hydraulic **fluid** is water, oil or a glycerine composition; optionally coloured. Also claimed is a compressed air actuated **device**, using e.g. a blood pressure manometer.

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PN - **CN2042730U** U 19890816

PR - CN1988211799U 19880520

AP - CN1988211799U 19880520

DT - I

PA - ZHANG ZHIFANG [CN]

TI - PORTABLE **MEDICAL FLUID** INFUSION **APPARATUS**

AB - The utility model relates to a portable **medical** transfusion **device**. The **device** comprises a needle head, a transfusion conduit pipe, a transfusion pipe **line** with storing containers being in order **connected** and a transfusion pump composed of a pump head, a driving mechanism, a transmission mechanism and a bearing mechanism. The **device** is suitable for making the transfusion salvage to for patient during the field and transferring way (for example, an ambulance car, a lorry, a stretcher, etc) and the **device** is also suitable for a sugar diabete patient, an infertility and a tumor patient to carry with the **device** to carry out the frequent hormones or **medical** liquid **injection** with fixed quantity at fixed time. The output flow rate of the **device** can come to the accuracy of micro upgrade.

73/73 © EPODOC / EPO

PN - **CA2068701** A1 19930318

PNFP - CA2068701 C 19950103

PR - US19910761306 19910917

AP - CA19922068701 19920514

DT - I

CCI - **A61M5/152**

CCA - **A61M5/14244**

PA - (A1 C)
IMED CORP [US]

TI - (A1 C)
Portable Infusion **Device**

AB - (C)
A **fluid** pump for infusing **medical fluids** to a patient includes a housing having an inlet port and an outlet port. The housing further includes a substantially hemispherically shaped surface which is circumscribed by a periphery. An elastomeric membrane is attached to the periphery of the surface and is stretched over the surface to place the membrane in its region of nonlinear elasticity. With this combination, a potential **fluid** chamber is established between the surface of the housing and the stretched membrane. In operation, **fluid** is **injected** through the inlet port and into the potential chamber between the housing and the elastomeric membrane to fill the chamber with the desired **medical fluid**. A **fluid line** is **connected** to the outlet port of the pump and a flow restrictor is **coupled** with the **fluid line** to control the flow of **fluid** from the chamber. **Fluid** flows from the chamber as a result of the nonlinear contraction of the elastomeric membrane. 10700.167 -35-

[SS 9]