

[EPODOC: SS 4] ..fi EPODOC

 Database: EPODOC

[EPODOC: SS 4] (apparatus or device) and (connect+ or coupl+) and (medic+) and (fluid+) and (line+) and (inject+)

Results in EPODOC 78

[SS 5] ..li



1/78 © EPODOC / EPO

PN - [RU2664308](#) C1 20180816
PR - RU20170131686 20161123
AP - RU20170131686 20161123
DT - I
CNOI - [A23P30/10](#)
PA - FEDERALNOEGOSUDARSTVENNOEBYUDZHETNOEOBRAZOVATELNOEUCHREZHDENIE
VYSSHEGO OBRAZOVANIYA KUBANSKIY G [RU]
TI - **DEVICE** FOR CAPSULATED PRODUCTS PRODUCTION
AB - FIELD: manufacturing technology.SUBSTANCE: invention relates to the **medical**, chemical, pharmaceutical and food industries, in particular to the equipment for the production of encapsulated products. **Device** comprises a container for a capsule filler material with a built-in viscometer, a storage tank for a circulating solution, a encapsulation unit including a capsule head with spinnerets communicating with a product **line** system with a closed cycle of **fluid** transport and mechanical separation of the capsules, which contains a receiving container for droplets of the substance-filler capsules in an amount of not less than two, each of which contains a built-in container with two oppositely arranged parabolic planes, forming a slit at the outlet of the receiving container, a transport tray located under it, **connected** through a conical tray with a curved **line** with a grid for separating the capsules. Grid for separating the capsules is configured to adjust its angle of inclination. Grid is communicated with the node for carbon dioxide treatment. Assembly comprises a belt conveyor, two circulation fans and two pairs of liquid carbon dioxide nozzles disposed in a heat-insulated housing provided with a receiving hopper, and a container with liquid carbon dioxide, communicated with two pairs of **injectors**.EFFECT: use of the invention will improve the quality of the encapsulated product.1 cl, 1 dwg

2/78 © 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 - BRAUNMELSUNGEN 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.

3/78 © EPODOC / EPO

PN - [CN107636370](#) A 20180126
 PR - DE201510205517 20150326; WO2016EP55024 20160309
 AP - CN2016818488 20160309
 DT - I
 CCI - [A61M39/10](#) ; [A61M39/22](#) ; [F16K11/0853](#) ; [F16K15/147](#)
 CUI - [A61M39/225](#)
 CUA - [A61M39/26](#) ; [A61M2039/229](#)
 PA - BRAUNMELSUNGEN AG
 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. The **device** is suitable for application in **medical** infusion systems.

4/78 © EPODOC / EPO

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.

5/78 © EPODOC / EPO

PN - [CN206687968U](#) U 20171201

PR - CN2017200217U 20170101

AP - CN2017200217U 20170101

DT - I

PA - ZHAO HONGBO

TI - **Medical** transfer **line** that concrete measurement detected

AB - The utility model discloses a **medical** transfer **line** that concrete measurement detected belongs to **fluid** measurement detection **device**, is to comprise puncture ware, pipe, dropping funnel, **injection** piece, liquid **medicine** filter, transfusion needle pipe and venous transfusion needle, and pipe that puncture ware bottom is being **connected** is communicateing dropping funnel, measurement in proper order and is detecting and fight and **injection**, the measurement place the bulb stopper in detect fighting in, **injection** piece pegging graft in proper order liquid **medicine** filter and transfusion needle pipe, the front end of transfusion needle pipe is equipped with the venous transfusion needle. The utility model discloses a **medical** transfer **line** that concrete measurement detected, simple structure, convenient to use have reduced infusion, entourage and **medical** personnel's pressure. Set up the measurement detection and fought in the transfer **line**, the whole output backs of liquid **medicine** in the infusion bottle, the process measurement detects the back of fighting, measures the bulb stopper that detects in fighting and can seal the transfer **line** automatically for the liquid that the measurement detected in the pipe below fighting stops the downward flow, has solved the problem that blood appears back in the untimely hypodermic needle of pulling out of current transfer **line** head.

6/78 © EPODOC / EPO

PN - [CN107198799](#) A 20170926

PR - DE201610104937 20160317

AP - CN2017175001 20170210

DT - I

CCI - [A61M39/10](#) ; [A61M39/1011](#)

CUI - [A61M5/1413](#) ; [A61M5/142](#)

CNOI - [A61M39/10](#) ; [A61M1/1601](#) ; [A61M1/1621](#)

CCA - [A61M2039/1027](#) ; [A61M2039/1044](#) ; [A61M2205/6018](#) ; [A61M2205/6027](#)

CUA - [A61M2205/11](#) ; [A61M2205/12](#) ; [A61M2205/18](#) ; [A61M2205/502](#)

CNOA - [A61M2205/33](#)

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 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.

7/78 © EPODOC / EPO

PN - [CN107041974](#) A 20170815

PR - CN20171129152 20170306

AP - CN20171129152 20170306

DT - I

CNOI - [A61M1/0001](#) ; [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.

8/78 © 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.

9/78 © 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.

10/78 © EPODOC / EPO

- PN - [EP3342449](#) A1 20180704
- PR - EP20170150006 20170102
- AP - EP20170150006 20170102
- DT - *; Rep
- CCI - [A61M39/02](#) ; [A61M39/10](#) ; [F16K15/144](#)
- CCA - [A61M2039/027](#) ; [A61M2039/246](#)
- PA - FRESENIUS KABI DEUTSCHLAND GMBH [DE]
- TI - PORT **DEVICE** FOR **INJECTING** A **MEDICAL FLUID** INTO A **MEDICAL LINE**
- AB - A port **device** (1) for **injecting** a **medical fluid** into a **medical line** (2, 3) comprises a body (13), a channel (14) arranged in the body (13), a first **connector** (10) arranged at a first end (140) of the channel (14) for **connecting** a first **medical line** (2) to the port **device** (1), and a second **connector** (11) arranged at a second end (141) of the channel (14) for **connecting** a second **medical line** (3) to the port **device** (1). Furthermore, the port **device** (1) comprises a port (12) for **connecting** an **injection device** (4) to the port **device** (13) for **injecting** a **medical fluid** into the channel (14), the port (12) having a conduit (124) being in **fluid connection** with the channel (14), and a closing element (15) which in a first state separates the conduit (124) of the port (12) from the channel (14) and is elastically deformable from the first state to allow a **fluid** passage from the conduit (124) into the channel (14). In this way, a port **device** is provided which is easy to use and effectively hinders a misuse for opening the port **device**.

11/78 © 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]

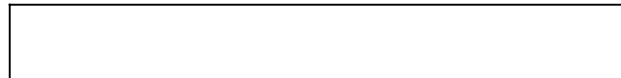
- TI - PNEUMATIC **DEVICE** FOR HOLDING AND MOVING AN ELONGATE OBJECT, AND **MEDICAL** SYSTEM INCORPORATING SUCH A **DEVICE**
- AB - The present invention relates to a pneumatic **device** for holding and moving an elongate object, comprising an annular hollow body through which the object passes and 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').

12/78 © 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.

13/78 © 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.

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

15/78 © EPODOC / EPO

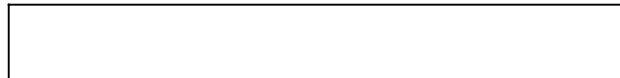
PN - [US2016058995](#) A1 20160303

PR - US201414888298
20140429; US201361818056P
20130501; WO2014US35892
20140429

AP - US201414888298 20140429

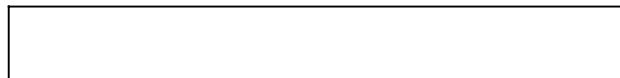
DT - **

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 [
] (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]);
[US2014000730](#) A1 20140102 [
] (NGUYEN HY B [US], et al)
 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.

16/78 © 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]

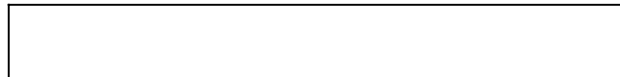
TI - MIXING BUSTING **DEVICE**
INJECTION WITH CARBON
DIOXIDE GAS

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.

17/78 © EPODOC / EPO

PN - [US2015305982](#) A1 20151029

PR - US201514796448
20150710; US201113282255
20111026; US20100768509
20100427



AP	- US201514796448 20150710
DT	- **
CCI	- <u>A61J1/2096</u>
CUI	- <u>B65B3/003</u>
CCA	- <u>A61J2205/10</u> ; <u>A61J2205/20</u> ; <u>A61J2205/30</u> ; <u>A61J2205/60</u> ; <u>A61J1/201</u>
CUA	- <u>A61J1/1425</u> ; <u>A61J1/1418</u>
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.

18/78 © EPODOC / EPO

PN - [CN204609856U](#) U 20150902

PR - CN20152252552U 20150424

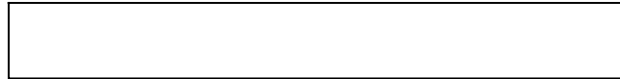
AP - CN20152252552U 20150424

DT - I

PA - SHENYANG WUYESHI
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.

19/78 © 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](#)

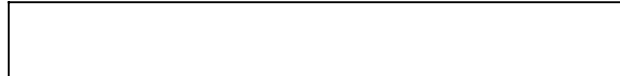
CUI - [A61M5/284](#)

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

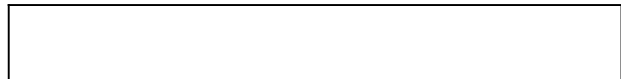
AB - (A1 B2)
A dispensing **device** which
disperses **medicate** through a
needle across a zone within a
body. The **device** includes a
needle which is, during use,
becomes encapsulated within a
tubular needle-receiving
member, a reservoir in **fluid**
communication with the needle,
positioned within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

20/78 © EPODOC / EPO

PN - [RU2013150912](#) A 20150520
 PNFP - RU2650584 C2 20180416
 PR - EP20120192953 20121116
 AP - RU20130150912 20131115
 DT - I
 CT - || STSE (C2)
 [US6096002](#) A 20000801 [
] (BIOJECT INC [US]);
 [SU480420](#) A1 19750815 [];
 [US4342310](#) A 19820803 [
] (LINDMAYER ISTVAN, et al);
 [US5322511](#) A 19940621 [
] (STERLING WINTHROP INC [US]);
 [US5503627](#) A 19960402 [
] (BIOJECT INC [US])
 CCI - [A61B17/3203](#)
 CUI - [A61M5/30](#)
 CQI - [A61B17/00234](#) ; [A61B17/32037](#)
 CNOI - (C2)
 [A61B17/00234](#) ; [A61B17/3203](#) ;
 [A61B17/32037](#)



CCA	- A61B2017/00269 ; A61B2017/00544 ; A61B2017/00548 ; A61B2017/320044 ; F04C2270/041
PA	- (C2) ERBE ELEKTROMEDIZIN [DE]
TI	- (C2) NEEDLE-FREE INJECTION DEVICE
AB	- (C2) FIELD: medical equipment. SUBSTANCE: invention relates to medical equipment, specifically, to an injector for needleless injections of a fluid , primarily for elimination by injection or suction of the mucosa of the esophagus of the gastrointestinal tract or for similar applications. Injector comprises a fluid applicator and a fluid supply device . Fluid applicator has an outlet for needleless injection into biological tissue of fluid and a fluid supply line , leading to the outlet. Fluid supply device is connected to the applicator by a fluid supply line and has a driving device and a fluid storage chamber. Drive device has a high pressure reservoir, used as an energy storage device , and an expansion chamber. Storage chamber has at least one first movable wall surface on which force is transmitted, said force being generated by the drive device . Expansion chamber has a second movable wall surface loaded by pressure of the medium in the energy storage device , wherein the area of the first movable wall surface is larger than the area of the second movable wall surface. EFFECT: use of the invention enables injection of fluid under

reduced pressure.9 cl, 7 dwg

21/78 © 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
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.

22/78 © EPODOC / EPO

PN - [UA98092](#) C2 20120410
 PR - UA20110009895 20110809
 AP - UA20110009895 20110809
 DT - I
 PA - NAZAROVYEVHENIVANOVYCH
 [UA]
 TI - plant for treatment of viral
 hepatitis using **medical** ozone
 (variants)
 AB - Declared plant for treatment of
 viral hepatitis 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

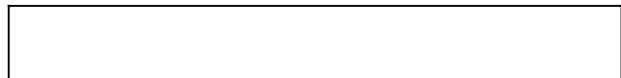


with control unit, and the first tank for mixture of PS and heparin is **connected** in the **line connecting** the **device** for taking blood from the peristaltic pump. In the first embodiment of the plant the **line** is **connected** with the mixer having built-in filter and **device** for return 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.

23/78 © EPODOC / EPO

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
[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.

24/78 © EPODOC / EPO

PN - [CN104093434](#) A 20141008

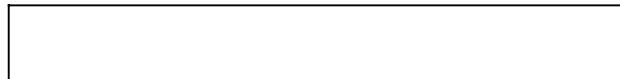
PNFP - CN104093434B B 20160127

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.

25/78 © EPODOC / EPO

PN - [CN203736285U](#) U 20140730

PR - CN2014297421U 20140305

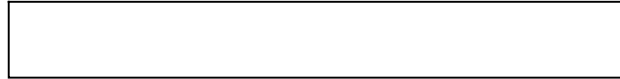
AP - CN2014297421U 20140305

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 sacculle 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.

26/78 © 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

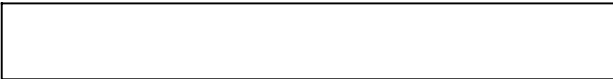
AB - (A1 C)
A dispensing **device** which
disperses **medicate** through a
needle across a zone within a
body with zero pressure
differential. The **device** includes
a needle which is, during use,
becomes encapsulated within a
tubular needle-receiving
member, a therapeutic agent
reservoir in **fluid** 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.

27/78 © EPODOC / EPO

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](#) ;
[G06F19/00](#) ; [A61B5/15178](#)

CUI

- [A61M5/158](#) ; [A61M5/46](#)

CCA

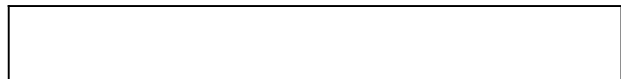
- [A61B17/32093](#) ; [A61B5/14532](#) ;

[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.

28/78 © 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.

29/78 © EPODOC / EPO

PN - [KR20130124057](#) A 20131113

PNFP - KR101404847B B1 20140611

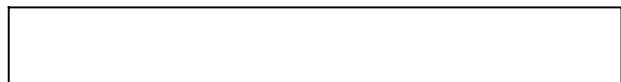
PR - KR20120047671 20120504

AP - KR20120047671 20120504

DT - I

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

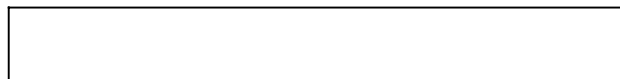
PA - (A)
CHOI KYU DONG [KR]; KIM JONG
HUN [KR]



- TI - (A B1)
PENTYPE **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.

30/78 © EPODOC / EPO

- 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])

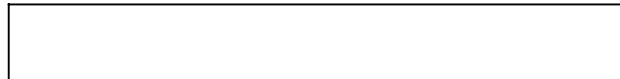
[A]

- PA - (A)
SHANGHAI NASAL CLEANER 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.

31/78 © 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](#) ;

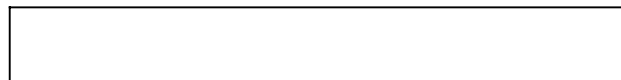


[A61B2018/0212](#) ;
[A61B2018/1861](#) ;
[A61M2025/0004](#) ;
[A61M2025/0175](#)

- 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
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.

32/78 © 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.

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 ; 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.

34/78 © 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**

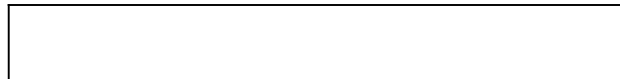
AB - The utility model discloses a water **injection** well head high-pressure spray chemicals dosing **device**. The design of the water **injection** well head high-pressure spray chemicals dosing **device** aims at achieving the water **injection** well single well fixed-point dosing and the high 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.

35/78 © 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



TI DUK [KR]

AB - TOTAL PURIFIER USING SPRAY

- 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**.

36/78 © EPODOC / EPO

PN - [KR101126623B](#) B1 20120326

PR - KR20110087244 20110830

AP - KR20110087244 20110830

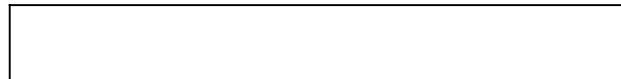
DT - I

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](#)

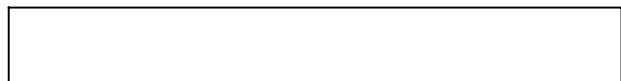
CNOA - [A61L2209/111](#) ; [A61L2209/13](#) ;
[A61L2209/134](#)

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.

- 37/78 © 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

38/78 © 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])
[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.

39/78 © EPODOC / EPO

PN - [US2012065618](#) A1 20120315

PNFP - US9022987 B2 20150505

PR - US201113298742
20111117; US20080276637
20081124; US20080078674P
20080707

AP - US201113298742 20111117

DT - *; Rep

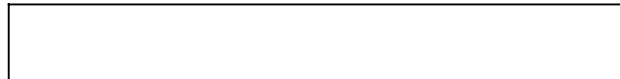
CT - || STSE (B2)
[US6645181](#) B1 20031111 [
(LAVI GILAD [IL], et al)
[US2002068907](#) A1 20020606 [
(DYSARZ EDWARD D [US])
- || R141 (A1)
[US2002068907](#) A1 [];
[US6645181](#) B1 []

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]

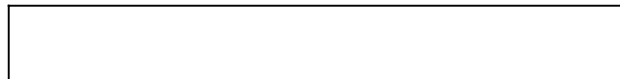
TI - (A1 B2)
Delivery system for **injection**
through zone of body



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.

40/78 © EPODOC / EPO

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.

41/78 © EPODOC / EPO

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**.

42/78 © EPODOC / EPO

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.

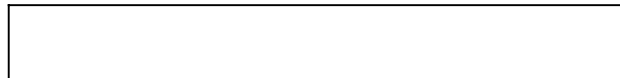
43/78 © EPODOC / EPO

- 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;
[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
ALEXANDERJ [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.

44/78 © EPODOC / EPO

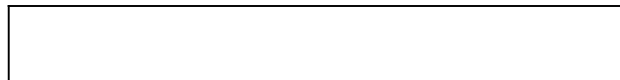
PN - [US7611504](#) B1 20091103
 PR - US20040795333 20040309
 AP - US20040795333 20040309
 DT - **
 CT - || STSE (B1)
 [US2910981](#) A 19591103 [
] (WILSON VOLNEY C, et al);
 [US4705505](#) A 19871110 [
] (FRIED STEVEN J [US]);
 [US5364371](#) A 19941115 [
] (DEKA PRODUCTS LP [US])
 CCI - [A61M5/44](#) ; [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**.

45/78 © 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.

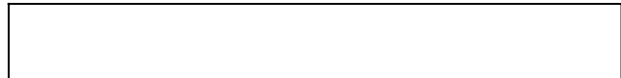
46/78 © EPODOC / EPO

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.

47/78 © 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**.

48/78 © EPODOC / EPO

PN - [WO2005061122](#) A1 20050707

PR - US20030728751 20031208

AP - WO2004US35484 20041025

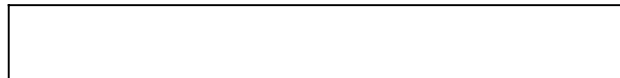
DT - **

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];

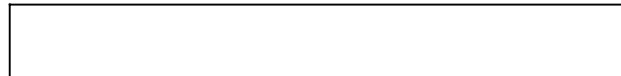


SPENCER STEVEN [US]; KLISCH LEO
[US]

- 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.

49/78 © 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)
[US6264636](#) 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**.

50/78 © EPODOC / EPO

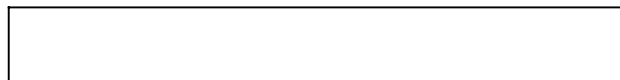
PN - [US2004171985](#) A1 20040902

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).

51/78 © EPODOC / EPO

PN - [US2005120951](#) A1 20050609

PNFP - US6997989 B2 20060214

PR - US20030728751 20031208

AP - US20030728751 20031208

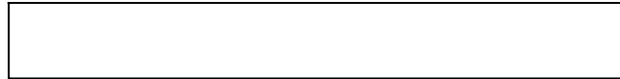
DT - *; Rep

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 SCIENTIFIC 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.

52/78 © EPODOC / EPO

PN - [US2007161952](#) A1 20070712

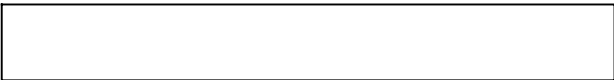
PNFP - US8845586 B2 20140930

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 [];
[US3651695](#) A [];
[US4009615](#) A [];
[US4375813](#) A [];
[US4651004](#) A [];
[US4651813](#) A [];
[US4906816](#) A [];
[US5096822](#) A [];
[US5097898](#) A [];
[US5195976](#) A [];

[US5290230](#) A [];
[US5297234](#) A [];
[US5397875](#) A [];
[US5399166](#) A [];
[US5729653](#) A [];
[US5733263](#) A [];
[US5876370](#) A [];
[US5879143](#) A [];
[US5879329](#) A [];
[US6035102](#) A [];
[US558979](#) A [];
[US1092643](#) A [];
[US1223274](#) A [];
[US3247851](#) A [];
[US4585435](#) A [];
[US4735609](#) A [];
[US5106373](#) A [];
[US5108372](#) A [];
[US5205820](#) A [];
[US5408576](#) A [];
[US5408577](#) A [];
[US5512043](#) A [];
[US5743878](#) A [];
[US5891096](#) A [];
[US5893843](#) A [];
[US6045648](#) A [];
[US6221045](#) B1 [];
[US2002041621](#) A1 [];
[US6722782](#) B2 [];
[US1062111](#) A [];
[US1493450](#) A [];
[US1960417](#) A [];
[US2470481](#) A [];
[US4090514](#) A [];
[US4329569](#) A [];
[US4384578](#) A [];
[US4745248](#) A [];
[US4747826](#) A [];
[US4832689](#) A [];
[US5013889](#) A [];
[US5019047](#) A [];
[US5211631](#) A [];
[US5308335](#) A [];
[US5411480](#) A [];
[US5411482](#) A [];
[US5417274](#) A [];
[US5420962](#) A [];
[US5514095](#) A [];
[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**.

53/78 © 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 [];



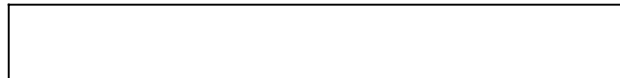
[US2004082904](#) A1 [];
[US4838866](#) A [];
[US5423751](#) A [];
[US4608996](#) A [];
[US2002123737](#) A1 [];
[US4296785](#) A [];
[US5562611](#) A [];
[US2002151854](#) A1 [];
[US6638258](#) B2 [];
[US6953450](#) B2 [];
[US6650929](#) B1 []

- 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.

54/78 © EPODOC / EPO

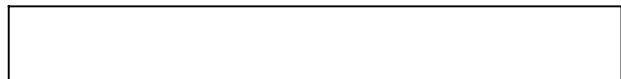
- PN - [US3935883](#) A 19760203
- PR - US19740498456 19740819
- AP - US19740498456 19740819
- DT - *
- CT - [US3182692](#) A []; [US3197285](#) A [];
[US3292667](#) A []; [US3602272](#) A [];
[US3734147](#) A []
- CCI - [A61M5/1782](#) ; [B65B3/003](#)
- PA - STACH PAUL E; SHERRIN THOMAS P
- TI - Syringe 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.

55/78 © 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.

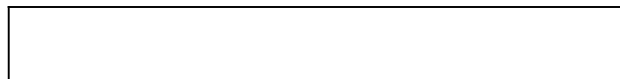
56/78 © EPODOC / EPO

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 [];
[US4666429](#) A []; [US4693706](#) A [];
[US4715854](#) A []; [US4725267](#) A [];
[US4753638](#) A []; [US4775369](#) A [];
[US4790828](#) A []; [US4795432](#) A [];
[US4795441](#) A []; [US4799926](#) A [];
[US4804371](#) A []; [US4850977](#) A [];
[US4863434](#) A []; [US4863435](#) A [];
[US4887998](#) A []; [US4894055](#) A []



	]; US4915688 A []; US4921490 A []; US4927416 A []; US4929241 A []; 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 RUSSELLA
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.



	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 [];
[US5720055](#) A [];
[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 [];
[US6397406](#) B1 [];
[US6408451](#) B1 [];
[US4098298](#) A [];
[US4340980](#) A [];
[US5652971](#) A [];
[US5933881](#) A [];
[US5937451](#) A [];
[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.

58/78 © EPODOC / EPO

PN - [KR20040052659](#) A 20040623

PR - KR20040028563 20040426

AP - KR20040028563 20040426

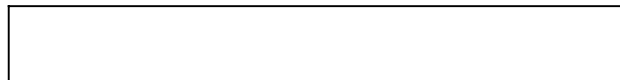
DT - I

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.

59/78 © EPODOC / EPO

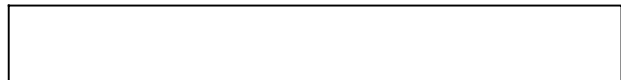
PN - [KR20020053026](#) A 20020704

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.

60/78 © 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.

61/78 © 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 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

62/78 © EPODOC / EPO

- | | | |
|-----|---|--|
| PN | - JPH0482564 A 19920316 | <div style="border: 1px solid black; width: 370px; height: 35px;"></div> |
| PR | - US19880216512
19880708; US19890301628
19890124; US19890351981
19890515 | |
| AP | - JP19890174111 19890707 | |
| DT | - I | |
| CCI | - A61M5/14228 ; A61M5/142 ;
G06F19/00 | |
| 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 FURROO CORP

TI - **INJECTION PUMP DEVICE**

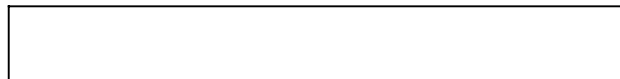
AB - PURPOSE: To provide a small-size and light-weight **injection** pump used by a patient able to walk by providing a pump mechanism which is separately and accurately controllable in relation to a plurality of **fluid** sources, in a single moving housing. CONSTITUTION: **Fluid** from a plurality 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** peristaltic 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 valve. 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.

63/78 © 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 catheter 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 catheter 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 catheter 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 therein 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.

64/78 © EPODOC / EPO

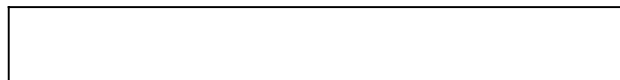
PN	- JPH037167 A 19910114	
PNFP	- JP3184831B B2 20010709	
PR	- JP19890132516 19890525	
AP	- JP19890132516 19890525	
DT	- I	
FI	- A61M5/00&320; A61M5/14&345; A61M5/168&504; A61M5/168&520; A61M5/172&500; A61M5/36&500; A61M5/38&500	
FT	- 4C066/AA07; 4C066/BB01; 4C066/CC09; 4C066/DD01; 4C066/DD11; 4C066/DD12; 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.

65/78 © 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.

66/78 © 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.

67/78 © 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.

68/78 © EPODOC / EPO

PN - [GB1218137](#) A 19710106

PR - US19670663035 19670824

AP - GB19680035766 19680726

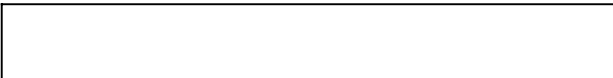
DT - *

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

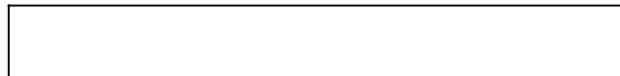


optional container 38, and the tracheal conduit 34. The oxygen is also available via the manifold 16 and a control valve 22 to an inlet 28 arranged in a tube 12 **connected** to the tracheal conduit 32, it being stated that the **injection** of the oxygen through the inlet 28 into the tube 12 and from 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 28. 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.

69/78 © EPODOC / EPO

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.

70/78 © EPODOC / EPO

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.

71/78 © 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] *

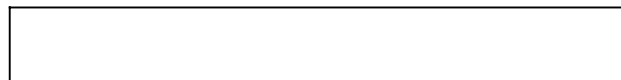


* paragraphs [0027] , [0029] *
 * paragraph [0030] *
 * figure 2 *

- 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).

72/78 © EPODOC / EPO

- PN - [EP0972529](#) A2 20000119
- PNFP - EP0972529 A3 20030326
 - EP0972529 B1 20050323
- PR - DE1998131950 19980716
- AP - EP19990112993 19990706

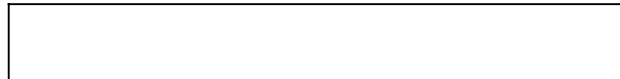


DT	- *; Rep
CT	- STSE (A3) WO9720493 A1 19970612 [A] (KEN MASKINFABRIK A S [DK], et al) [A] 1-14 * page 4, line 9 - page 9, line 18; figure - *; US5223229 A 19930629 [A] (BRUCKER JEFFREY P [US]) [A] 1 * column 6, line 16 - column 7, line 32; figures 2,5 *; FR1565407 A 19690502 [A] (FERTE ALBERT) [A] 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.

73/78 © EPODOC / EPO

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.

74/78 © EPODOC / EPO

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)
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.

75/78 © 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>

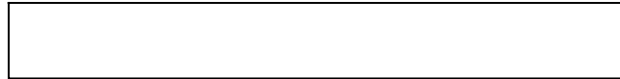
76/78 © EPODOC / EPO

- 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.



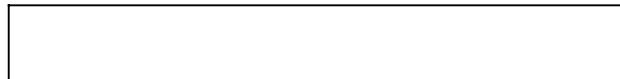
77/78 © EPODOC / EPO

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.



78/78 © 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-