

1) Family number: 59781279 (EP3088862B1)

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**Title:** APPARATUS AND METHOD FOR DETERMINING AN AMOUNT OF NON-CONDENSABLE GAS APPAREIL ET PROCEDE PERMETTANT DE DETERMINER UNE QUANTITE DE GAZ NON CONDEN

**Abstract:** There is disclosed an apparatus 10 and method for determining an amount of non-condensable gas within a fluid flow containing both non-condensable gas and condensate liquid. The method comprises receiving the fluid flow in a fluid displacement volume 18 causing the non-condensable gas to rise within the volume 10; monitoring the liquid level of a free surface in the fluid displacement volume 18 to generate a level signal; monitoring the flow of liquid out of the fluid displacement volume 18 to generate a liquid flow signal; and determining the amount of non-condensable gas based on the level signal and the liquid flow signal.

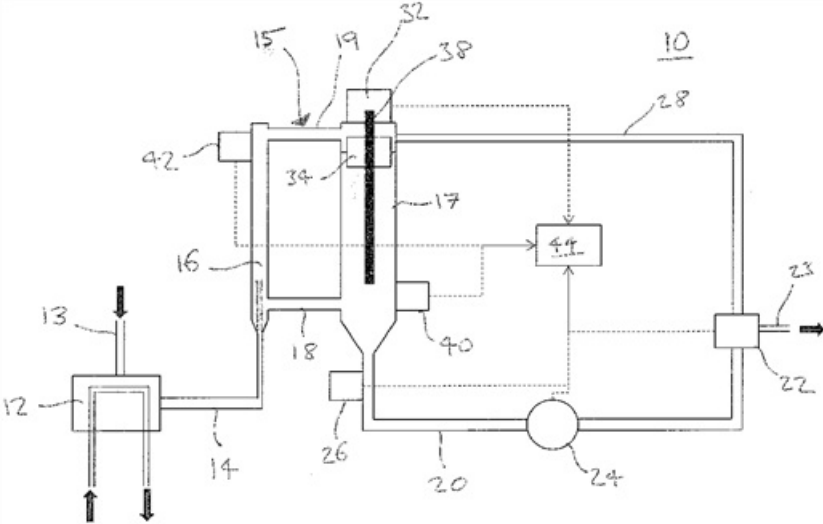


Figure 1

**Classifications:**  
**International (IPC 8-9):** A61L2/07 A61L2/28 G01F1/05 G01F1/68 G01F1/74 G01F15/08 G01F22/00 G01F22/02 G01N11/02 G01N7/00 (Advanced/Invention);  
G01F1/74 G01F15/07 G01F23/72 (Advanced/Non-invention)  
**CPC:** G01F22/00 G01F1/74 G01F15/07 G01F15/08 G01F22/02 G01F23/72 G01N7/00 A61L2/07 A61L2/28 G01N11/02

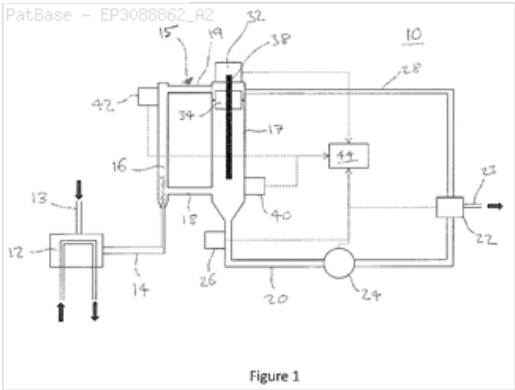


Figure 1

**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| AU2016201983 AA    | 20161117         | AU20160201983      | 20160330         |
| AU2016201983 BB    | 20190919         | AU20160201983      | 20160330         |
| CA2925993 AA       | 20161030         | CA20162925993      | 20160404         |
| CA2925993 C        | 20200310         | CA20162925993      | 20160404         |
| CN106092246 A      | 20161109         | CN201610242574     | 20160419         |
| EP3088862 A2       | 20161102         | EP20160165446      | 20160414         |
| EP3088862 A3       | 20161116         | EP20160165446      | 20160414         |
| EP3088862 B1       | 20200610         | EP20160165446      | 20160414         |
| GB201507439 A0     | 20150617         | GB20150007439      | 20150430         |
| GB2537913 A1       | 20161102         | GB20150007439      | 20150430         |
| GB2537913 B2       | 20191218         | GB20150007439      | 20150430         |

**Priority:**

GB20150007439 20150430

**Probable Assignee:** SPIRAX SARCO LTD

**Assignee(s):** (std): SPIRAX SARCO LTD

**Assignee(s):** MCKENNA PAUL ; JOHNSON NICK ; HUNT GARETH ; CHANNON PAUL

**Inventor(s):** (std): CHANNON PAUL ; HUNT GARETH ; JOHNSON NICK ; MCKENNA PAUL ; PAUL MCKENNA ; PAUL CHANNON ; NICK JOHNSON ; GARETH HUNT

**Agent(s):** CULLENS PTY LTD; SPRUSON AND FERGUSON; PERRY AND CURRIER; TEBBUTT GEORGE ASHLEY;

**Designated states:** AL AT BA BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC ME MK MT NL NO PL PT RO RS SE SI SK SM TR

**2) Family number: 48338801 (US2013041234A)**

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**Title:** FLOW RATE METER

**Abstract:** The present invention is flow rate meters which are able to accurately measure the volumetric rate of flow of a liquid through a conduit without requiring foreknowledge of the physicochemical characteristics of the liquid, e.g., for the purpose of calibration of the thermal mass flow rate. One application of the flow meters of the invention is to incorporate them in a system for measuring the flow rate of urine excreted by a catheterized patient. The invention also provides methods for using the flow rate meters.

**Classifications:**

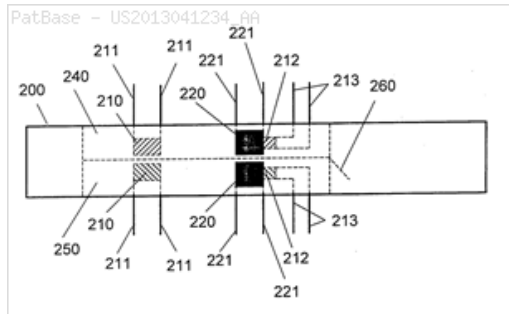
**International (IPC 8-9):** A61B5/01 A61B5/20 A61M25/00 G01F G01F1/00 G01F1/68 G01F1/684 G01F23/26 G01F25/00 G01F3/36 G01F5/00 (Advanced/Invention);

A61B G01F (Subclass/Invention)

**CPC:** G01F1/68 A61M25/0017 G01F3/36 G01F5/00 G01F25/0038 G01F23/266 A61B5/208 A61B2562/0271 G01F1/007 G01F1/684

**European:** G01F1/00C G01F1/68 G01F3/36 G01F5/00

**US:** 600/301 600/549 73/204.11



**Family:**

| Publication number  | Publication date | Application number | Application date |
|---------------------|------------------|--------------------|------------------|
| ■ CN102893134 A     | 20130123         | CN201180022590     | 20110404         |
| ■ CN102893134 B     | 20160525         | CN201180022590     | 20110404         |
| ■ DE602011028392 D1 | 20160901         | DE201160028392T    | 20110404         |
| ■ DK2567199 T3      | 20160919         | DK20110777354T     | 20110404         |
| ■ EA024961 B1       | 20161130         | EA20120001478      | 20110404         |
| ■ EA201201478 A1    | 20130430         | EA20120001478      | 20110404         |
| ■ EP2567199 A1      | 20130313         | EP20110777354      | 20110404         |
| ■ EP2567199 A4      | 20140716         | EP20110777354      | 20110404         |
| ■ EP2567199 B1      | 20160720         | EP20110777354      | 20110404         |
| ■ ES2589679 T3      | 20161115         | ES20110777354T     | 20110404         |
| ■ IL205614 A0       | 20101130         | IL20100205614      | 20100503         |
| ■ IL222449 A0       | 20121231         | IL20110222449      | 20110404         |
| ■ IL222449 A1       | 20150730         | IL20110222449      | 20110404         |
| ■ TR201611704 T4    | 20160921         | TR20160011704T     | 20110404         |
| ■ US2013041234 AA   | 20130214         | US20110642602      | 20110404         |
| ■ US9021878 BB      | 20150505         | US20110642602      | 20110404         |
| ■ WO11138774 A1     | 20111110         | WO2011100289       | 20110404         |

**Priority:**

US20090215580P 20090508 IL20100205614 20100503 EP20110777354 20110404  
WO2011100289 20110404 IL2012022449 20121015

**Probable Assignee:** RENALSENSE LTD

**Assignee(s):** (std): ADLER MICHAEL ; BENTOV SHMUEL ; GRINSTEIN MOR ; MANTINBAND JACK YEHOOSHUA ; SHMUEL BENTOV ; RENALSENSE LTD ; RENAL SENSE LTD ; MOR GRINSTEIN ; MICHAEL ADLER ; JACK YEHOOSHUA MANTINBAND

**Assignee(s):** SHMUEL BENTOV

**Inventor(s):** (std): ADLER MICHAEL ; BENTOV SHMUEL ; GRINSTEIN MOR ; MANTINBAND JACK YEHOOSHUA

**Inventor(s):** MICHAEL ADLER ; MOR GRINSTEIN ; SHMUEL BENTOV ; JACK YEHOOSHUA MANTINBAND

**Agent(s):** STOLMAR AND PARTNER PATENTANWALTE PARTG MBB ; SGOBBA MARCO ; PERANI AURELIO ; DE ELZABURU ALBERTO ; LUZZATTO AND LUZZATTO ; AYLIN SENER ; ROACH BROWN MCCARTHY AND GRUBER PC ; KEVIN D ; LUZZATTO AND LUZZATTO ET AL

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

**3) Family number: 31416541 (US2004256409A)**

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**Title:** FLUID DISPENSING APPARATUS

**Abstract:** A disposable tube set apparatus is provided apparatus for delivering a precise volume of a fluid to containers which comprise a reservoir for a fluid, an inlet conduit to said reservoir, at least one first outlet conduits from said reservoir, a sight tube connected to each of said at least one outlet conduit, each of said sight outlet tubes having an interior wall tapered away from a central vertical axis of each of said sight outlet tubes, a return conduit connecting each of said sight outlet tubes to said reservoir, and a second outlet conduit connected to each of said sight tubes.

**Classifications:**

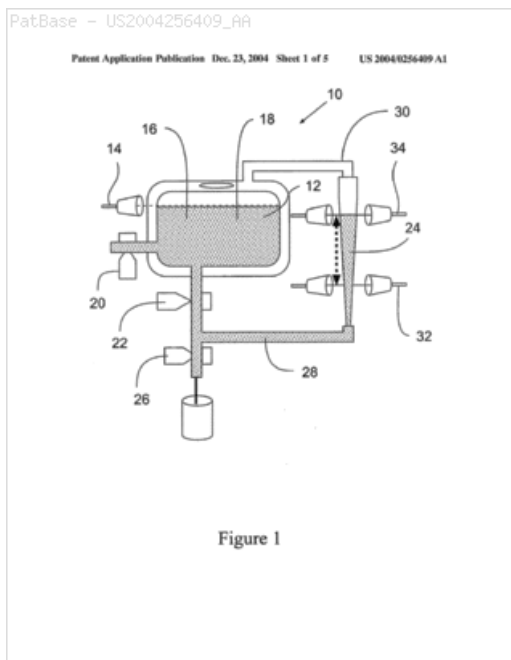
**International (IPC 8-9):** B67C3/20 B67D5/38 B67D7/56 G01F11/28 (Advanced/Invention);

B67C3/02 B67D7/06 G01F11/00 (Core/Invention)

**International (IPC 1-7):** B67D5/08 B67D5/38

**CPC:** B67C3/204

European: B67C3/20D  
 US: 222/129 222/155 222/158 222/318 222/424 222/450 222/462 222/64



#### Family:

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| US2004256409 AA    | 20041223         | US20040823171      | 20040413         |
| US7118011 BB       | 20061010         | US20040823171      | 20040413         |

#### Priority:

US20030479036P 20030617 US20040823171 20040413

**Probable Assignee:** EMD MILLIPORE CORP

**Assignee(s):** (std): MILLIPORE CORP

**Assignee(s):** PROULX STEPHEN P ; EMD MILLIPORE CORP

**Inventor(s):** (std): PROULX STEPHEN P

**Agent(s):** MILLIPORE CORP

#### 4) Family number: 74441900 (CO20190003208A)

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**Title:** MEDIDOR DE FLUJO DE GAS POR DESPLAZAMIENTO DE LIQUIDO GAS FLOW METER BY DISPLACEMENT OF LIQUID  
 (Machine translation)

**Abstract:** Source: CO20190003208A [ES] La presente invencion versa sobre un medidor de flujo de gas por desplazamiento de liquido que posee un dispositivo para desplazamiento de liquido (11) con camara interna (7) y externa (1), valvulas de entrada (6) y salida (5), sensores de nivel; donde los sensores de nivel (9) permiten la apertura de la valvula de salida (5) y el mecanismo de control (10) registra los datos del proceso. Tambien se revela el proceso para la medicion de flujo de gas usando este dispositivo. Este medidor puede ser empleado en biorrectores o en cualquier otra fuente de gas que requiera la medicion de flujo volumetrico total. Una ventaja del dispositivo de la invencion es que permite una lectura autonoma del volumen y los ciclos del proceso, entre otras medidas, sin requerir de un equipo de computo. **Machine translation:** The present invention relates to a gas flow meter by displacement of liquid that has a device for displacement of liquid (11) with internal chamber (7) and (1), inlet valves (6) and outlet (5), level sensors; wherein the level sensors (9) allow the opening of the outlet valve (5) and the control mechanism (10) records the data of the process. Also disclosed is the process for measuring gas flow using this device. This meter can be used in biorrectores or any other gas source that requires the total volumetric flow measurement. An advantage of the device of the invention is that it enables an autonomous reading volume and the process cycles, among other measures, without requiring a computer.

#### Classifications:

**International (IPC 8-9):** G01F1/00 G01F1/28 G01F1/58 G01F1/696 G01F1/78 G01F1/86 (Advanced/Invention)

#### Family:

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| CO20190003208 A1   | 20190510         | CO20190003208      | 20190401         |

#### Priority:

CO20190003208 20190401

**Probable Assignee:** UNIV ANTONIO NARINO

**Assignee(s):** (std): UNIV ANTONIO NARINO

**Assignee(s):** UNIVERSIDAD ANTONIO NARINO

**Inventor(s):** (std): ARANGO OVIEDO JINETH ANDREA ; LUNA WANDURRAGA HECTOR JAVIER ; MARTINEZ ROJAS ANDRES JULIAN ; VALDERRAMA RINCON JOAQUIN ANDRES ; VALDERRAMA RINCON JUAN DANIEL

#### 5) Family number: 51447082 (US2012308409A)

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**Title:** FLUID FLOW METER

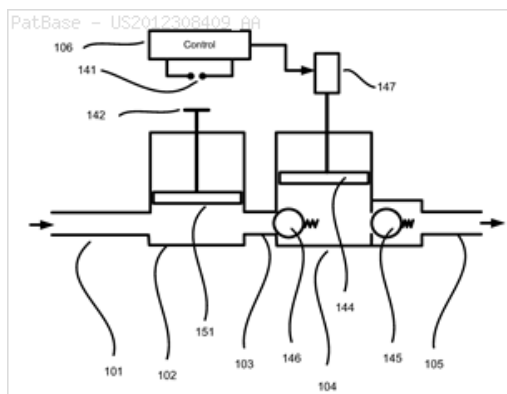
**Abstract:** A fluid flow meter comprising a fluid pump to displace fluid with pumping strokes of one or more pumping stroke types wherein each of the one or more stroke types displaces a known volume of fluid, a sensor functionally associated with a fluid reservoir and adapted to generate a signal indicative of a fluid pumping condition within the fluid reservoir, which fluid reservoir is integral or functionally associated with the pump, and circuitry to trigger one or a sequence of strokes of the pump in response to a signal from the sensor.

**Classifications:**

**International (IPC 8-9):** B67D B67D7/16 F04B13/00 F04B19/22 F04B23/02 F04B41/02 F04B49/06 G01F11/04 G01F11/08 G01F15/00 G01F23/60 G01F3/16 (Advanced/Invention)

**CPC:** F04B23/025 G01F3/16 G01F15/005 G01F23/603 Y10T137/85978 F04B13/00 F04B19/22 F04B41/02 F04B49/065 F04B23/02

**US:** 417/274



**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| AU2012204787 AA    | 20120712         | AU20120204787      | 20120105         |
| AU2012204787 AA    | 20130704         | AU20120204787      | 20120105         |
| BR112013016822 A2  | 20170801         | BR20131116822      | 20120105         |
| CA2822589 AA       | 20130620         | CA20122822589      | 20120105         |
| CN103354800 A      | 20131016         | CN201280004411     | 20120105         |
| CN103354800 B      | 20191018         | CN201280004411     | 20120105         |
| EP2661412 A1       | 20131113         | EP20120732381      | 20120105         |
| EP2661412 A4       | 20141008         | EP20120732381      | 20120105         |
| IL227019 A0        | 20130829         | IL20120227019      | 20120105         |
| IN05386DN2013 A    | 20160506         | IN2013DN05386      | 20130617         |
| KR102095688 B1     | 20200401         | KR20197006320      | 20120105         |
| KR20140032990 A    | 20140317         | KR20137020413      | 20120105         |
| KR20190042596 A    | 20190424         | KR20197006320      | 20120105         |
| KR20200049798 A    | 20200508         | KR20207008349      | 20120105         |
| US2012308409 AA    | 20121206         | US20120574797      | 20120105         |
| US2020003202 AA    | 20200102         | US20190252878      | 20190121         |
| US10240590 BB      | 20190326         | US20120574797      | 20120105         |
| WO12093370 A1      | 20120712         | WO20121B50067      | 20120105         |

**Priority:**

US20110429897P 20110105 US20120574797 20120105 WO20121B50067 20120105  
US20120574797 20120724 US20190252878 20190121

**Probable Assignee:** FIZE RES LTD

**Assignee(s):** (std): FIZE RES LTD ; LEVINE NOAM ; NOAM LEVINE

**Assignee(s):** FIZE RESEARCH LTD

**Inventor(s):** (std): LEVINE NOAM ; NOAM LEVINE

**Agent(s):** BALDWIN'S INTELLECTUAL PROPERTY; OSLER HOSKIN AND HARCOURT LLP; WALSH MARIE GORETTI; SHERMAN VLADIMIR; PROFESSIONAL PATENT SOLUTIONS LTD; PROFESSIONAL PATENT SOLUTIONS

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