

Search history

Search 1: SFT=((container or bottle) and dispens*) and CPC=(G01F11/28) (Results 180)
Search 2: 1 and pd<20140922 (Results 167)
Search 3: 2 and open* (Results 160)
Search 4: 3 and measure* (Results 119)

Title: Mechanism and a method for **opening** a sealed **container**

Abstract: A system and a method for delivering and metering a fixed volume of liquid, such as a liquid sterilant from a **container** into a vaporization system. The method for the delivering system includes the steps of sensing a requirement for additional liquid sterilant, determining whether the liquid sterilant to be added is acceptable for use, and delivering the liquid sterilant from a **container** into an accumulator. The method of metering the liquid sterilant into the vaporization system includes creating a vacuum in a chamber connected to the vaporizer and delivering the liquid sterilant into a vaporizer while continually sensing the flow of the delivery. The metering system maintains a slow, controlled flow in order to achieve efficient vaporization of the liquid sterilant and to provide accurate sensing of the gas/liquid interface.

Classifications:

International (IPC 8-9): A61L2/00 A61L2/16 A61L2/18 A61L2/20 A61L2/24 A61L2/26 A61L9/03 B01D1/00 B01J4/00 B26F1/00 B26F1/18 B65D83/00 B67B7/46 B67B7/52 B67B7/58 B67D3/00 B67D5/00 B67D99/00 G01F11/28 G01F13/00 (Advanced/Invention); A61L2/00 A61L2/16 A61L2/18 A61L2/24 B65D83/00 B67D5/08 B67D5/28 B67D7/08 B67D7/28 G01F13/00 (Advanced/Non-invention); A61L2/00 A61L2/16 A61L2/18 A61L2/20 A61L9/015 B65D83/00 G01F13/00 (Core/Invention)

International (IPC 1-7): A61L2/18 A61L2/20 A61L2/24 A61L2/26 A61L2/26 A61L9/03 B01D1/00 B01D1/00 B65B1/04 B65B3/04 B65B31/00 B65D83/00 B67B7/46 B67B7/52 B67B7/58 B67B7/58 B67C3/00 G01F13/00

CPC: A61L2/186 A61L2/24 A61L2202/122 A61L2202/14 G01F11/28 A61L2/16 A61L2202/15

European: A61L2/18P A61L2/24 G01F11/28 K61L202/122 K61L202/140

US: 141/2 141/285 141/2P 141/319 141/329 141/330 141/363 141/364 141/366 141/5 141/65 141/8 141/83 141/94 422/28 422/298

PatBase - US2002020464_AA

Patent Application Publication Feb. 21, 2002 Sheet 1 of 11 US 2002/0020464 A1

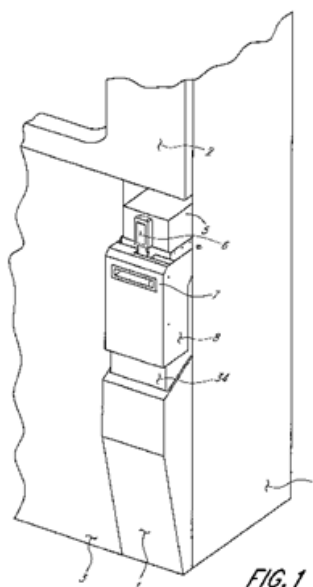


FIG. 1

Family:

Publication number	Publication date	Application number	Application date
AU200118297 A1	20010809	AU20010018297	20010205
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AU2004200583 AA	20040311	AU20040200583	20040213
AU2004200583 BB	20060608	AU20040200583	20040213
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AU2004200588 AA	20040311	AU20040200588	20040213
AU2004200588 BB	20051103	AU20040200588	20040213
AU772565 B2	20040429	AU20010018297	20010205
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CA2333826 C	20120424	CA20012333826	20010205
CA2744090 AA	20010807	CA20012744090	20010205
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CA2810290 AA	20010807	CA20012810290	20010205
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DE60148576 D1	20140306	DE20016048576	20010206
EP1121942 A2	20010808	EP20010301021	20010206
EP1121942 A3	20031022	EP20010301021	20010206
EP1121942 B1	20110706	EP20010301021	20010206
EP2266631 A1	20101229	EP20100075291	20010206
EP2266631 B1	20120620	EP20100075291	20010206
EP2266632 A1	20101229	EP20100075292	20010206
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ES2366598 T3	20111021	ES20010301021T	20010206
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ES2452547 T3	20140401	ES20100075292T	20010206
JP2001289687 A2	20011019	JP20010031461	20010207
JP2011227091 A2	20111110	JP20110140308	20110624
JP2012016812 A2	20120126	JP20110140297	20110624
JP4994534 B2	20120808	JP20010031461	20010207
JP5095845 B2	20121212	JP20110140297	20110624
JP5133444 B2	20130130	JP20110140308	20110624
KR100785640 B1	20071214	KR20010005563	20010206
KR100812557 B1	20080313	KR20070050776	20070525
KR100814273 B1	20080318	KR20070050777	20070525
KR20010078342 A	20010820	KR20010005563	20010206

KR20070060061 A	20070612	KR20070050777	20070525
KR20070075369 A	20070718	KR20070050776	20070525
TW514535 B	20021221	TW20010102564	20010309
US2002020464 AA	20020221	US20010846400	20010501
US2002157726 AA	20021031	US20010846401	20010501
US6279622 BA	20010828	US20000499418	20000207
US6390155 BA	20020521	US20010846400	20010501
US6530399 BB	20030311	US20010846401	20010501

Priority:

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CA20012333826	20010205	CA20012744090	20010205	CA20012810290	20010205
EP20010301021	20010206	EP20100075291	20010206	EP20100075292	20010206
JP20010031461	20010207	US20010846400	20010501	US20010846401	20010501
AU20040200583	20040213	AU20040200588	20040213	CA20112333826	20110711
CA20132744090	20130408				

Probable Assignee: ETHICON INC

Assignee(s): (std): ETHICON INC

Assignee(s): ETHICON INC SOMERVILLE ; FELT CURTIS H ; GUINTO REMIGIO ; KOHLER JAMES P ; KROGH ROSS G ; NGUYEN NICK NGOC

Inventor(s): (std): REMIGIO GUINTO ; NICK NGOC NGUYEN ; NGUYEN NICK NGOC ; KROGH ROSS G ; KOHLER JAMES P ; GUINTO REMIGIO ; GEE LAW ROSS ; FELT CURTIS H ; JAMES B KOHLER ; CURTIS H FELD

Inventor(s): GUINTO REMIGIO MISSION VIEJO ; CURTIS H FELT ; JAMES P KOHLER ; FELT CURTIS H MISSION VIEJO ; GUINTO REMIGIO IRVINE ; KOHLER JAMES P LAGUNA HILLS ; KROGH ROSS G RANCHO SANTO MARGARITA ; NGUYEN NICK NGOC COSTA MESA ; ROSS G KROGH

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Designated states: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR

Title: **DISPENSING** DEVICE FOR **DISPENSING** A LIQUID PRODUCT

Abstract: A **dispensing** device includes a first chamber that is longitudinally movable in a second chamber and has an outer surface sealingly contacting an inner surface of the second chamber. An intermediate valve is positioned between an interior part of the first chamber and an interior part of the second chamber. The intermediate valve includes a valve seat plate having at least one **opening** and a valve flapper plate having at least one flapper for covering the at least one **opening** in the valve seat plate. The at least one flapper moves to an **open** position allowing the liquid product to flow from the interior space of first chamber to the interior space of the second chamber when the first chamber is moved in a first longitudinal direction and moves to a closed position limiting flow of the liquid product when the first chamber is moved in an opposite second longitudinal direction.

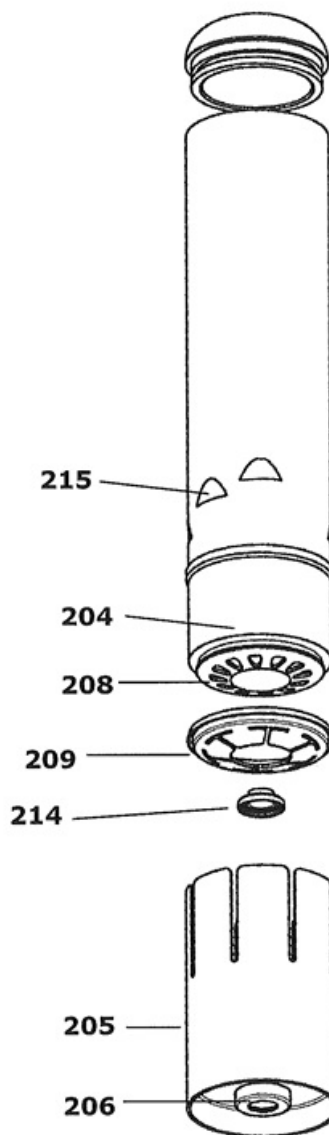
Classifications:

International (IPC 8-9): B05B11/00 B65D25/48 B65D25/52
B65D47/20 B65D83/00 B67D7/56 G01F11/08 G01F11/10 G01F11/12
G01F11/26 G01F11/28 G01F15/00 (Advanced/Invention);
B65D47/20 (Advanced/Non-invention)

CPC: G01F11/288 G01F11/10 G01F11/26 G01F11/262 G01F11/263
G01F11/28 B65D25/52 B65D47/2031

US: 222/1 222/154 222/156 222/158 222/207 222/212 222/251
222/442 222/453 222/632 222/634

PatBase - US2013214005_AA



Family:

Publication number	Publication date	Application number	Application date
CA2865039 AA	20140819	CA20132865039	20130221
CA2865039 C	20171219	CA20132865039	20130221
CN104395198 A	20150304	CN201380021032	20130221
CN104395198 B	20171107	CN201380021032	20130221
DK177528 B1	20130823	DK20120000143	20120222
DK177528 B1	20130908	DK20120000143	20120222
EP2817236 A1	20141231	EP20130708978	20130221
IN06848CN2014 A	20160701	IN2014CN06848	20140917
JP2015508047 T2	20150316	JP20140558822T	20130221
JP6046751 B2	20161221	JP20140558822T	20130221
MX2014010169 A1	20150605	MX20140010169	20130221
US2013214005 AA	20130822	US20120609873	20120911
US2016207664 AA	20160721	US20130379944	20130221
US8657159 BB	20140225	US20120609873	20120911
US9499305 BB	20161122	US20130379944	20130221
WO13126553 A1	20130829	WO2013US27111	20130221

Priority:

DK20120000143 20120222 US20120136098 20120911 US20120609873 20120911
WO2013US27111 20130221 US20130379944 20130221

Probable Assignee: MEZURWARE LLC

Assignee(s): (std): KROGH NIELSEN KELD ; MEZUREWARE LLC ; MEZURWARE LLC ; NIELSEN KELD KROGH

Assignee(s): MEZURWARE LLC210 NORTH MAIN STREETSUITE 300KERNERSVILLENC27284US

Inventor(s): (std): KROGH NIELSEN KELD ; NIELSEN KELD KROGH

Inventor(s): NIELSEN KELD KROGHDK

Agent(s): SMART AND BIGGAR; YEADON MARK; MYERS BIGEL SIBLEY AND SAJOVEC PA; MYERS BIGEL PA

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

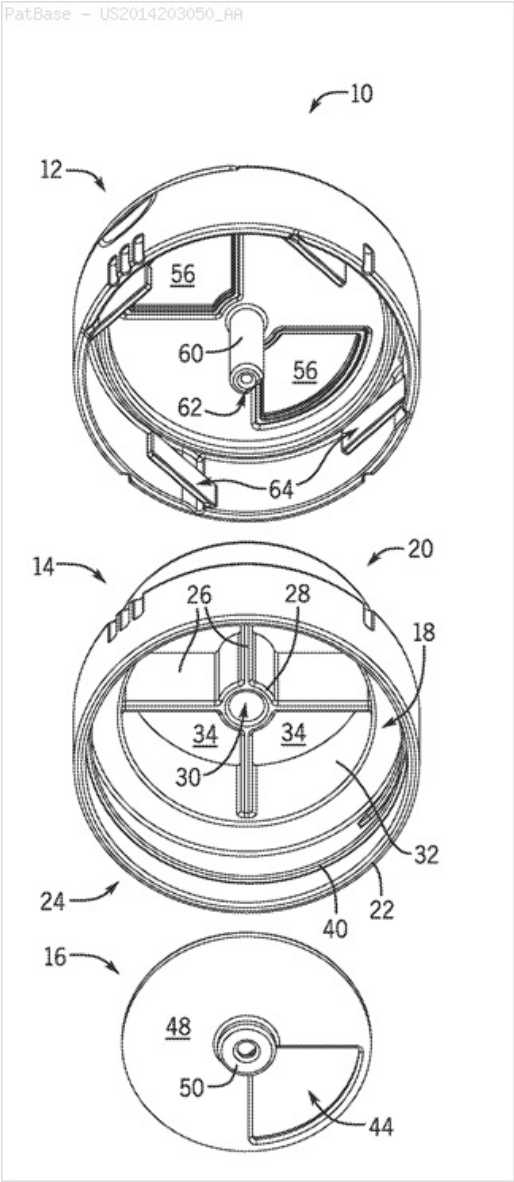
Abstract: A portion distribution device for portioning substances from a container in pre-defined increments is disclosed. The portion distribution device includes a portion divider having a portion opening, and a measurement chamber body rotatively coupled to the portion divider. The measurement chamber body includes a plurality of chambers equal in volume and a base joined to the plurality of chambers, with the base constructed to be selectively connected to the container. The portion distribution device also includes a lid rotatively coupled to the measurement chamber body, with the lid further including a top surface having at least one lid opening formed therethrough, at least one flap operative to close the at least one lid opening, and a rod extending downward from the top surface, through the measurement chamber body, and coupled to the portion divider.

Classifications:

International (IPC 8-9): G01F11/26 G01F11/28 (Advanced/Invention); A47G19/34 G01F11/00 G01F11/46 (Advanced/Non-invention)

CPC: G01F11/261 A47G19/34 G01F11/003 G01F11/28 G01F11/46 Y10T29/49826

US: 1/1 222/426 29/428



Family:

Publication number	Publication date	Application number	Application date
US2014203050 AA	20140724	US20140159734	20140121
US9297683 BB	20160329	US20140159734	20140121

Priority:

US20130754734P 20130121 US20140159734 20140121

Probable Assignee: BLACKBURN BRETT J

Assignee(s): (std): BLACKBURN BRETT J

Inventor(s): (std): BLACKBURN BRETT J

Agent(s): ZIOLKOWSKI PATENT SOLUTIONS GROUP SC

Title: DEVICE AND METHOD FOR METERING MEDIA

Abstract: The invention relates to a device (1) for metering media (2) and comprises at least one storage vessel (3), a measuring vessel (14) and a target vessel (14) that are interconnected to give one unit. By the exertion of force on the media (2) to be metered they can communicate between the storage vessel (3) and the measuring vessel (4) and can then be transferred to the target vessel (14). The metering volume is determined by the geometry of the measuring vessel (4). The target vessel (14) can be separated from the measuring vessel (4) by severing (welding, gluing, cutting) the connection between (14) and (4). The invention also relates to a method for metering media using the device (1) according to the invention. The device is suitable as a disposable unit and for the sterile metering of media in a non-sterile environment.

Classifications:

International (IPC 8-9): B05B9/00 B65B1/04 B65B3/30 B67C3/20 B67D7/16 G01F11/28 (Advanced/Invention);

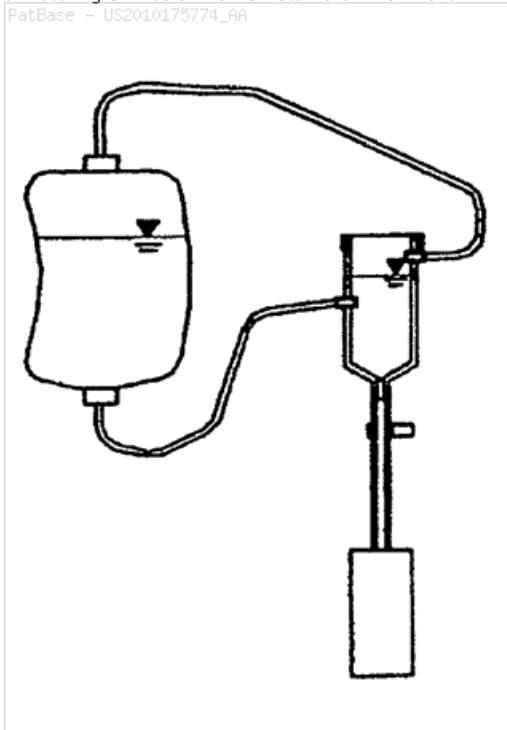
B65B1/04 B65B3/00 B67C3/02 B67D7/08 G01F11/00 (Core/Invention)

CPC: G01F11/28

European: G01F11/28

US: 141/1 141/1P 141/234 141/326 141/326S 222/437 222/437S 222/457 222/457S 239/127 239/379

PatBase - US2010175774_AA



Family:

Publication number	Publication date	Application number	Application date
DE102006054606 A1	20080529	DE200610054606	20061121
DE202007014392 U1	20080103	DE200720014392U	20071016
EP2097722 A2	20090909	EP20070819531	20071102
EP2097722 B1	20180110	EP20070819531	20071102
US2010175774 AA	20100715	US20070311809	20071102
US8087596 BB	20120103	US20070311809	20071102
WO08061614 A2	20080529	WO2007EP09504	20071102
WO08061614 A3	20080710	WO2007EP09504	20071102

Priority:

DE200610054606 20061121 DE200720014392U 20071016 WO2007EP09504 20071102

Probable Assignee: SARTORIUS STEDIM BIOTECH GMBH

Assignee(s): (std): MENNENGA HEYO ; SARTORIUS STEDIM BIOTECH GMBH

Inventor(s): (std): MENNENGA HEYO

Agent(s): HESPOS AND PORCO LLP; GERALD E; MICHAEL J

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI 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 PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: APPARATUS FOR DISPENSING LIQUIDS

Abstract: Multi-channel metering apparatus with automatic calibration, where the individual dispensing channels 1, the micro-valves 4 of which are connected with the outlets of a distributor 8, 13 or 15 whose inlet is filled with fluid by a vessel 9, 14 or 17 thus connected, are able to be calibrated in relation to each other in that between the vessel 9, 14 or 17 and the inlet of the distributor 8, 13 or 15 a flow sensor 10 is arranged which for calibration during delivery of the fluid via a respective nozzle 2 of a respective dispensing channel 1 records the flow and generates signals which are respectively assigned to a defined opening time of a micro-valve 4 and a specific dispensing channel 1 and thus stored allows for individual control of the micro-valves 4 in order to equalize the tolerances of the dispensing channels 1.

Classifications:

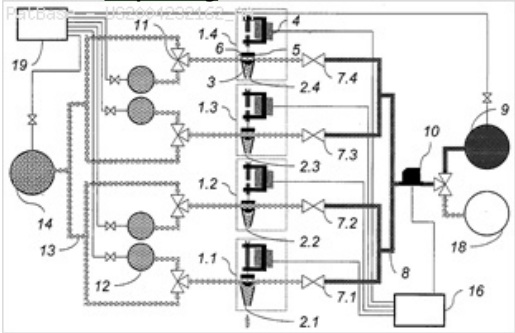
International (IPC 8-9): B01L3/02 G01F11/28 G01F13/00 G01F25/00 G01N35/00 G01N35/10 G06F19/00 (Advanced/Invention); G01N35/00 (Advanced/Non-invention); B01L3/02 G01F11/00 G01F13/00 G01F25/00 G01N35/00 G01N35/10 G06F19/00 (Core/Invention); G01N35/00 (Core/Non-invention)

International (IPC 1-7): B01J4/00 B01L3/02 B05B1/14 B67D5/08 G01F11/10 G01N35/10

CPC: Y10T436/2575 B01L3/021 B01L2200/148 B01L2300/0861 B01L2400/0487 B01L2400/06 G01F11/28 G01F13/006 G01F25/0092 G01N35/00594 G01N35/00693 G01N35/1016 G01N35/1065 G01N35/1072 G01N2035/1039

European: B01L3/02C G01F11/28 G01F13/00C G01F25/00D G01N35/00G1 G01N35/10C3 L01L200/14D L01L300/08E L01L400/04M8 L01L400/06 S01N35/00G1E S01N35/10C3 S01N35/10F4B S01N35/10M S01N35/10M3

US: 222/482 222/482S 222/55 222/63 222/63P 422/100 422/101 422/501 422/99 436/180 702/100 702/55



Family:

Publication number	Publication date	Application number	Application date
DE10255595 A1	20040603	DE20021055595	20021126
DE50308907 D1	20080214	DE20035008907	20031125
DE50308908 D1	20080214	DE20035008908	20031125
EP1424129 A2	20040602	EP20030027083	20031125
EP1424129 A3	20050907	EP20030027083	20031125
EP1424129 B1	20080102	EP20030027083	20031125
EP1424130 A2	20040602	EP20030027084	20031125
EP1424130 A3	20050907	EP20030027084	20031125
EP1424130 B1	20080102	EP20030027084	20031125
US2004232162 AA	20041125	US20030722366	20031125
US2005035146 AA	20050217	US20030722113	20031125
US7379832 BB	20080527	US20030722366	20031125
US7553452 BB	20090630	US20030722113	20031125

Priority:

DE20021055595 20021126

Probable Assignee: CYBIO AG

Assignee(s): (std): CYBIO AG

Inventor(s): (std): HEIBE GERD ; HEIBETAE GERD ; HEISE GERD ; HEISSE GERD ; KOBERICH HARTMUT ; KOEBERICH HARTMUT ; KRAEMER WOLFGANG ; KRAMER WOLFGANG ; MOORE THOMAS ; RAUSCH TORSTEN ; RENARD SIMON ; ZIMMERMANN PETER

Inventor(s): HEI BETA E GERD

Agent(s): SCHALLER RENATE ET AL; TESTA HURWITZ AND THIBEAULT LLP; REED SMITH LLP

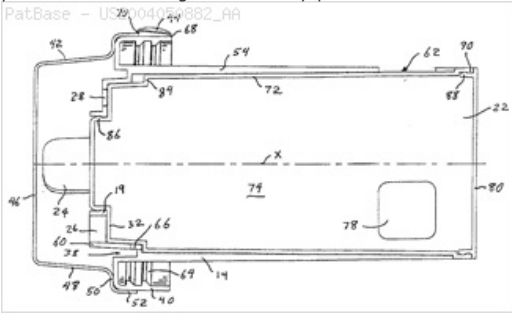
Designated states: AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PT RO SE SI SK TR

Title: TWO-PIECE MEASURING **DISPENSING** CAP

Abstract: A two-piece **dispensing** cap for a **container** has a body and an insert mounted for rotation within the body. The body has a sidewall defining a cylindrical chamber with an **open** first end and an end wall forming a partially closed second end. The body sidewall has an inlet while the body end wall has an axial **opening**, a non-axial outlet, and a protruding flange for attachment to a **container** mouth. The insert is received into **open** first end of the cylindrical chamber. The insert has a peripheral wall dimensioned to conform to the cylindrical housing interior surface and a first insert end wall including a protruding handle extending through the axial **opening** in the body end wall. The insert includes **openings** to permit filling of the insert from the **container** and **dispensing** of the contents of the insert. An insert second end wall is integrally formed with a hinge to the insert peripheral wall while an over-cap is integrally formed with a hinge to the body portion.

Classifications:

International (IPC 8-9): B65D1/00 G01F11/26
G01F11/28 (Advanced/Invention);
B65D1/00 G01F11/00 G01F11/10 (Core/Invention)
International (IPC 1-7): B65D B65D1/00 B67D5/16 G01F11/28
CPC: G01F11/263 G01F11/28
European: G01F11/26B2 G01F11/28
US: 222/111 222/442 222/452 222/556



Family:

Publication number	Publication date	Application number	Application date
AU2003268010 AA	20040430	AU20030268010	20030721
AU2003268010 AH	20040430	AU20030268010	20030721
EP1539589 A2	20050615	EP20030748961	20030721
EP1539589 A4	20091104	EP20030748961	20030721
US2004050882 AA	20040318	US20020244909	20020916
US6783031 BB	20040831	US20020244909	20020916
WO04024569 A2	20040325	WO2003US22691	20030721
WO04024569 A3	20040729	WO2003US22691	20030721

Priority:

US20020244909 20020916 WO2003US22691 20030721

Probable Assignee: ROBBINS EDWARD S III

Assignee(s): (std): ROBBINS EDWARD S ; ROBBINS EDWARD S III

Assignee(s): ROBBINS EDWARD SIII ; ROBBINS III EDWARD S ; WHITE RONALD R ; MILLER JOHN J

Inventor(s): (std): MILLER JOHN J ; ROBBINS EDWARD S ; ROBBINS EDWARD S III ; WHITE RONALD R

Inventor(s): EDWARD S III ROBBINS ; EDWARD SIII ROBBINS ; JOHN J MILLER ; ROBBINS EDWARD SIII ; RONALD R WHITE

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

Title: **Dispenser** for pulverulent or granular materials

Abstract: PCT No. PCT/DE91/01009 Sec. 371 Date Oct. 22, 1992 Sec. 102(e) Date Oct. 22, 1992 PCT Filed Dec. 20, 1991.A **dispenser** for, in particular, pulverulent or granular materials, have a storage chamber, a portioning chamber and a discharge chamber having a discharge **opening**. The discharge chamber is separated from the portioning chamber by a partition, in which, by a first tilting over, the material passes into the portioning chamber and from there, on tilting back, passes into the discharge chamber and, on a second tilting over, the portioned material is discharged. The **dispenses** also includes, as well as with a closure, which in the closed state closes both a through **opening** from the storage chamber to the portioning chamber, as well as the discharge **opening**.

Classifications:

International (IPC 8-9): B65D83/00 B65D83/06 G01F11/26 G01F11/28 (Advanced/Invention);

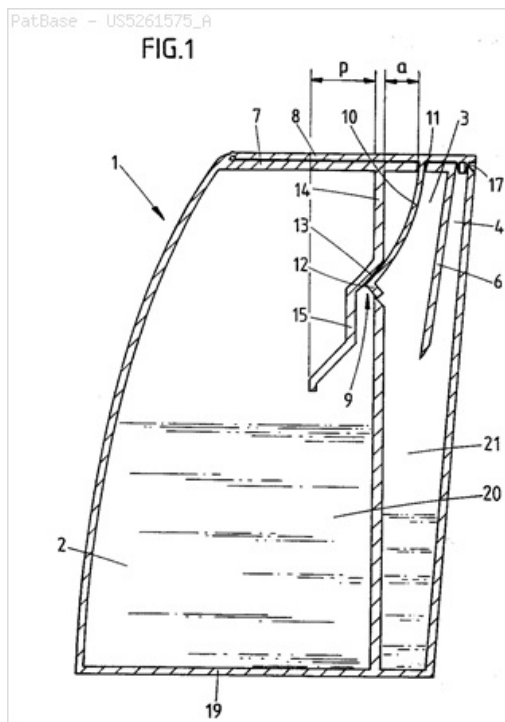
B65D83/06 G01F11/00 (Core/Invention)

International (IPC 1-7): B65D25/52 B65D83/00 B65D83/06 G01F11/26 G01F11/28

CPC: G01F11/28

European: G01F11/28

US: 222/455 222/546



Family:

Publication number	Publication date	Application number	Application date
AU199191330 A1	19920722	AU19910091330	19911220
AU642329 B2	19931014	AU19910091330	19911220
BRPI9106219 A	19930330	BR1991PI06219	19911220
CA2074810 AA	19920728	CA19912074810	19911220
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EP0492534 A1	19920701	EP19910122002	19911220
HU62524 A2	19930528	HU19910002722Q	19911220
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Priority:

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WO1991DE001009 19911220

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Assignee(s): KELLER PETER ; KELLER GMBH 2810 VERDEN DE ; EFFEM G M B H

Inventor(s): (std): KELLER PETER ; KELLER PETER DE ; PETER KELLER

Agent(s): WATERMARK PATENT AND TRADE MARKS ATTORNEYS; WATERMARK INTELLECTUAL PROPERTY PTY LTD; G RONALD BELL AND ASSOCIATES

Designated states: AT AU BE BR CA CH DE DK ES FR GB GR HU IT JP LI LU NL PL SE SU US

Title: DISCHARGE DEVICE WITH A METERED DOSE VALVE

Abstract: A discharge device with a metered dose valve is proposed. The metered dose valve comprises an inlet valve, a metering chamber and an outlet valve. In order to allow discharge of fluid from the metering chamber in multiple steps, a user can depress and release an actuation member multiple times in a selected discharge state wherein refill of the metering chamber with new liquid is prevented.

Classifications:

International (IPC 8-9): A61M11/00 B65D83/00 B65D83/44 B67B1/00 G01F11/00 G01F11/04 G01F11/28

G01F13/00 (Advanced/Invention);

B65D83/00 B67B1/00 G01F11/00 (Core/Invention);

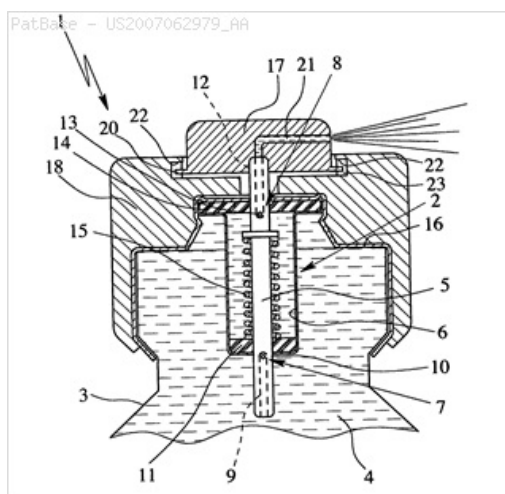
G01F (Subclass/Invention)

International (IPC 1-7): G01F11/28

CPC: G01F11/28

European: G01F11/28

US: 222/153.11 222/402.2



Family:

Publication number	Publication date	Application number	Application date
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Priority:

GB20030028564 20031210 EP20040803485 20041203 WO2004EP13761 20041203

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Agent(s): FISHER ADAMS KELLY CALLINANS; CALLINANS; FETHERSTONHAUGH AND CO; HAECKEL STEFAN; REINHOLD COHN AND PARTNERS; ROBERTS MLOTKOWSKI AND HOBBS; DAVID S; ROBERTS

MLOTKOWSKI SAFRAN AND COLE PC

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

Title: APPARATUS AND METHOD FOR THE TRANSFER AND DELIVERY OF HIGH PURITY CHEMICALS

Abstract: The present invention provides improved method and apparatus for the transfer and delivery of very high purity chemicals for use in semiconductor production and similar processes. By employing multiple alternating pressure vessels, chemicals are drawn from virtually any bulk source and delivered to one or more end-users. The use of a vacuum system to draw chemicals through sealed conduits eliminates the need for pumps which are a source of both maintenance problems and contamination in the system. Multiple vessels provide for a variety of flow options, which include continuous chemical delivery to the end-users, recirculation and regular filtration during periods of low use, and built-in redundancy to avoid system shut down if there is a component failure.

Classifications:

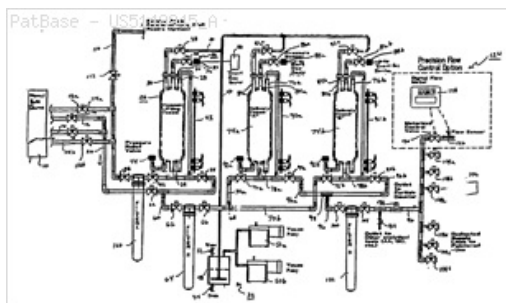
International (IPC 8-9): B01F15/02 B01F15/04 B01J4/00 B01J4/02 B24B37/00 B24B37/04 B24B57/00 B24B57/02 B67D7/02 B67D7/74 C09K3/14 F17D1/08 G01F11/28 G01F23/00 G01F23/02 G01N1/00 H01L21/00 H01L21/304 (Advanced/Invention); B01F15/02 B01J4/02 H01L21/304 (Advanced/Non-invention); B01F15/04 B01J4/00 B01J4/02 B24B37/00 B24B37/04 B24B57/00 B67D7/02 C09K3/14 F17D1/00 G01F11/00 H01L21/00 H01L21/02 (Core/Invention)

International (IPC 1-7): B01F15/02 B01J19/00 B01J4/00 B01J4/02 B24B37/00 B24B57/00 B67D5/06 B67D5/08 B67D5/54 B67D5/56 C09K3/14 F17D1/08 G01F11/00 G01N1/00 H01L21/304

CPC: C09K3/1463 B67D7/0277 Y10T137/3109 Y10T137/3124 Y10T137/3127 B01J4/02 B01J2219/00006 B24B57/02 Y10T137/4891 B67D7/0272 B01F15/00422 B01F15/0454 B01F2215/0036 B24B37/04 B67D7/0283 G01F11/28 G01F23/00 G01F23/02 H01L21/67253 H01L21/67276

European: B01F15/00K60P B01F15/04H5 B01J4/02 B24B37/04 B24B57/02 B67D7/02E6B B67D7/02F B67D7/02F2 C09K3/14D2 G01F11/28 G01F23/00 G01F23/02 H01L21/67S8B H01L21/67S8E L01F215/00A42 L01J219/00A2B

US: 137/205 137/208 137/209 137/268 222/1 222/135 222/145.5 222/145.6 222/152 222/189 222/189.06 222/189.08 222/318 222/399 222/56 222/59 222/61 222/64 222/66 222/71 366/134 366/137 366/160.5 366/182.1 366/191



Family:

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Priority:

US19900583826	19900917	WO1991US06717	19910907	WO1991US06717	19910917
WO1991US06717	19910917	WO1991US06717	19910917	US19920948392	19920921
US19930035252	19930322	WO1994US03035	19940322	US19940275958	19940715
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WO1995US08769	19950713	US19960667360	19960621	US19970898882	19970627

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Assignee(s): APPLIED CHEMICAL SOLUTIONS HOLLISTER CALIF ; BOC EDWARDS INC ; EDWARDS VACUUM INC ; APPLIED CHEMICAL SOLUTIONS INC A MN CORP ; APPLIED CHEMICAL SOLUTIONS HOLLISTER CALIF US ; AIR LIQUIDE ; AIR LIQUIDE ELECTRONICS US LP ; APPLIED CHEMICAL SOLUTION ; BOC GROUP INC ; APURADO CHEM SORYUUSHONZU ; APPLIED CHEMICAL SOLUTIONS HOLLISTER ; APPLIED CHEMICAL SOLUTIONS A CORP ; APPLIED CHEMICAL SOLUTIONS A CORP OF CA

Inventor(s): (std): BERNOSKY EUGENE W ; CORLETT GARY L ; CORLETT L ; FERRI EDWARD T JR ; FERRI JR EDWARD T ; FERRI T ; GEATZ J ; GEATZ J TOBIN ; GEATZ TOBIN ; ROBERSON GLENN A JR ; ROBERSON JR GLENN A

Inventor(s): JIITSU JEI TOBIN ; ROBERSON GLENN A ; FERRIE JR EDWARD T ; FERRI EDWARD T

Designated states: AT BE CA CH CN CY DE DK ES FI FR GB GR IE IT JP KR LI LU MC NL PT RU SE SG

Title: Increasing the accuracy of liquid volume measurements utilizing liquid level sensing

Abstract: An improvement in apparatus and method for measuring a prescribed volume of liquid by flowing the liquid into a reservoir and sensing the level of the liquid in the reservoir to determine when a known volume is reached places that level within a portion of the reservoir having a much-reduced cross-sectional area compared to the cross-sectional area of the remainder of the reservoir such that any inaccuracy in the sensing of the level to determine when the known volume is reached results in only a minimal deviation in the measured volume of liquid from the prescribed volume of liquid.

Classifications:

International (IPC 1-7): B65B1/36 G01F1/00 G01F11/28 G01F17/00 G01F23/00

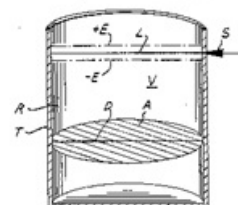
CPC: G01F1/007 G01F11/28

European: G01F1/00C G01F11/28

US: 141/1 141/128 141/198 141/83 141/94 73/290R

PatBase - US4880039_A

U.S. Patent Nov. 14, 1989 Sheet 1 of 4 4,880,039



PRIOR ART
FIG. 1

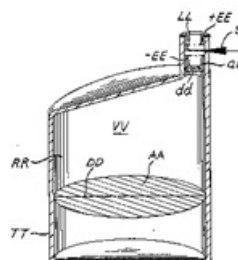


FIG. 2

Family:

Publication number	Publication date	Application number	Application date
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EP0399733 A3	19910605	EP19900305406	19900518
US4880039 A	19891114	US19890356763	19890525

Priority:

US19890356763 19890525

Probable Assignee:

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Inventor(s): (std):

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Designated states:

AT CH DE GB LI