

Search history

- Search 1: FT=(HOSE~ COUPLING~ AND HIGH~ PRESSURE~) (Results 2459)
Search 2: FT=(universal~ HOSE~ COUPLING~ accessory~ AND HIGH~ PRESSURE~) (Results 0)
Search 3: FT=(universal~ and HOSE~ COUPLING~ and accessory~ AND HIGH~ PRESSURE~) (Results 19)
Search 4: FT=(HOSE~ COUPLING~ AND HIGH~ PRESSURE~ and accessory) (Results 54)

Title: SELF-CONTAINED BRAKE AND REMOTE CONTROL SYSTEM FOR A TRAILER

Abstract: A self-contained trailer braking system comprises a fifth wheel hitch attached to a trailer frame, where the trailer hitch further comprises a kingpin to engage a fifth wheel of a towing vehicle. A sliding mechanism is attached to the kingpin, where the sliding mechanism is slidably captured within the trailer frame and can move between a forward position and a rear position. A spring is attached to the sliding mechanism and the trailer frame, where the spring biases the sliding member to the forward position. A brake actuator is mounted to the trailer frame and linked to the sliding mechanism. A brake assembly is attached to the brake actuator, and a power supply is attached to the brake assembly, where power is applied to the brake assembly when the sliding mechanism is away from the forward position.

Classifications:

International (IPC 8-9): B60T13/08 B60T7/16

B60T7/20 (Advanced/Invention);

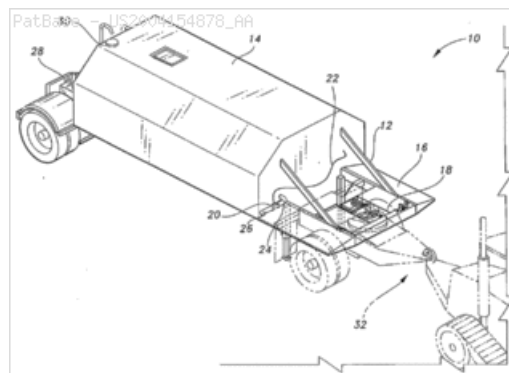
B60T13/00 B60T7/16 B60T7/20 (Core/Invention)

International (IPC 1-7): E01H3/02 F16D66/00

CPC: B60T7/16 B60T13/08

European: B60T13/08 B60T7/16

US: 188/1.11E 188/111E 188/112R 188/142 239/172 280/428 280/446.1



Family:

Publication number	Publication date	Application number	Application date
US2004154878 AA	20040812	US20040775653	20040210
US2005082386 AA	20050421	US20040969669	20041020
US7168531 BB	20070130	US20040775653	20040210

Priority:

US20030446502P 20030211 US20040775653 20040210 US20040969669 20041020

Probable Assignee: NAVARRO STEVE

Assignee(s): (std): NAVARRO STEVE

Inventor(s): (std): NAVARRO STEVE

Agent(s): LAW OFFICE OF TIMOTHY M BARLOW; TIMOTHY M

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
US2004154878 AA	20040812	LSPB	+	published / reissued	
US2005082386 AA	20050421	LSPB	+	published / reissued	
US2005082386 AA	20081110	LSWD	-ABD3	Abandoned -- Failure to Respond to an Office Action	
US7168531 BB	20070130	LSGT	+	granted / extensions (spc, cpc, pte)	
US7168531 BB	20100330	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US7168531 BB	20150130	LSLE	-LAPS	LAPSE FOR FAILURE TO PAY MAINTENANCE FEES	
US7168531 BB	20150302	LSLE	-PEX1	Patent Expired Due to NonPayment of Maintenance Fees Under 37 CFR 1.362	
US7168531 BB	20150302	LSLE	-STCH	INFORMATION ON STATUS: PATENT DISCONTINUATION	TEXT : PATENT EXPIRED DUE TO NONPAYMENT OF MAINTENANCE FEES UNDER 37 CFR 1.362
US7168531 BB	20150324	LSLE	-FP	EXPIRED DUE TO FAILURE TO PAY MAINTENANCE FEE	EFFECTIVE DATE : 20150130
US7168531 BB	20250408	PEXP		Calculated Patent Term Expiry (PTA 423 days)	

Title: VEHICLE FOR FIRE CONTROL AND FIRE RESCUE OPERATIONS IN EXTREME WILDLANDS

Abstract: A mid-sized firefighting and fire rescue vehicle capable of accessing a range of off-road wildland environments that is also "street legal" for rapid on-road transportation. The vehicle is configured to be outfitted as needed with any of a variety of different firefighting or fire rescue systems packaged as removable modules, fixed in place in the bed of the vehicle. The vehicle achieves stability and ruggedness through the use of three military type axles, two of which (the rear axles) are both drive axles. The vehicle is further configured with an open bed structured to receive, position, and retain an integrated, modularly structured, firefighting or fire rescue system in such a manner as may be switched out with alternate systems as required for the type of service into which the vehicle is called. The vehicle has a narrow gauge (width) that allows it to access remote and obstructed areas but is still large enough to adequately carry personnel and equipment safely to and from most wildland fire environments. The bed of the vehicle utilizes a quick load and unload system that includes either rails or alignment guide posts in a manner that allows the user to quickly change the vehicle's primary function.

Classifications:

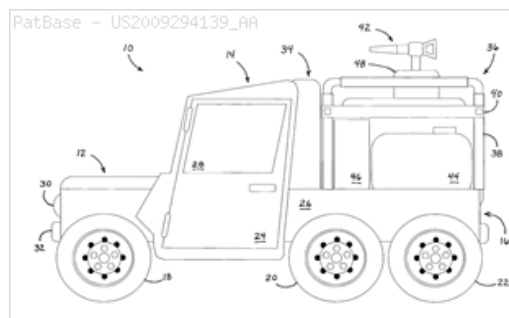
International (IPC 8-9): A62C27/00 (Advanced/Invention);

A62C27/00 (Core/Invention)

CPC: A62C3/0292 A62C27/00

European: A62C27/00 A62C3/02R

US: 169/24 169/24P



Family:

Publication number	Publication date	Application number	Application date
US2009294139 AA	20091203	US20090473045	20090527

Priority:

US20080056337P 20080527 US20090473045 20090527

Probable Assignee:

WILSON ROBERT H

Assignee(s): (std):

WILSON ROBERT H

Inventor(s): (std):

WILSON ROBERT H

Agent(s):

KAMMER BROWNING PLLC

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
US2009294139 AA	20091203	LSPB	+	published / reissued	
US2009294139 AA	20120507	LSWD	-ABD3	Abandoned -- Failure to Respond to an Office Action	

Title: AIR COMPRESSOR **ACCESSORY** DRIVEN BY PORTABLE ELECTRIC DRILL

Abstract: A pneumatic pump has provision for being driven by a conventional electric hand drill and chuck that are un-modified so that they can be detached by loosening the chuck jaws and used for other purposes. The provision includes first and second input shafts protruding at right angles to each other and connected by a bevel gear on each. In addition to improving drive access, to provide a choice of drive ratios, the bevel gears have different diameters. The rotary output of the shaft and bevel gear arrangement drives a reciprocating piston in a cylinder that, in association with check valves and a hose connection, can inflate a pneumatic tire, at a speed and to a pressure, determined by which drive ratio is chosen. The drill can be freely swiveled about either input shaft to which attached. A gauge indicates cylinder pressure. A frame permits the assembly of drive and pump to be used to pressurize a tank for storage of compressed air.

Classifications:

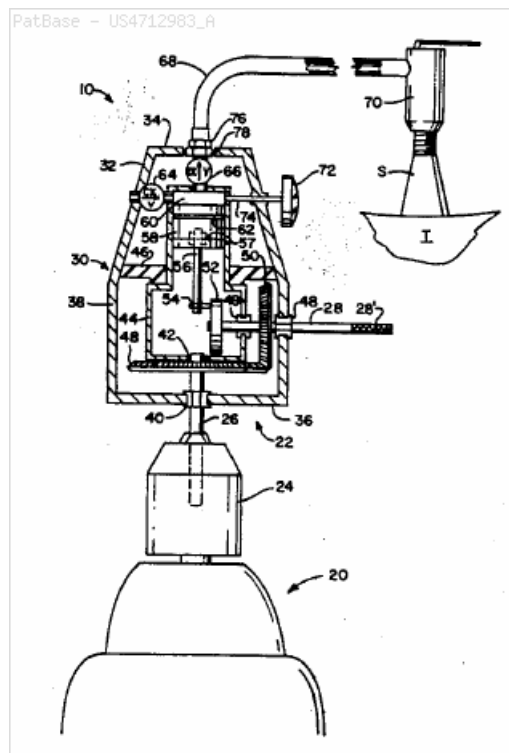
International (IPC 8-9): F04B35/04 F04B9/02 (Advanced/Invention); F04B35/00 F04B9/02 (Core/Invention)

International (IPC 1-7): F04B21/00 F04B35/00 F16H37/08

CPC: F04B9/02 F04B35/04 Y10T74/1906 Y10T74/19665

European: F04B35/04 F04B9/02

US: 417/234 417/411 417/415 74/417 74/665C



Family:

Publication number	Publication date	Application number	Application date
US4712983 A	19871215	US19850796178	19851108
US4874296 A	19891017	US19870132344	19871214

Priority:

US19850796178 19851108 US19870132344 19871214

Probable Assignee: MOYNIHAN PATRICK B

Assignee(s): (std): MOYNIHAN PATRICK B

Inventor(s): (std): MOYNIHAN PATRICK B

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
US4712983 A	19871215	LSGT	+	granted / extensions (spc, cpc, pte)	
US4712983 A	19871015	LSGT	PAT1	Patented Case	
US4712983 A	19911215	LSLE	-LAPS	LAPSE FOR FAILURE TO PAY MAINTENANCE FEES	
US4712983 A	19920218	LSLE	-FP	EXPIRED DUE TO FAILURE TO PAY MAINTENANCE FEE	EFFECTIVE DATE : 19911215
US4712983 A	20180131	LSLE	-PEX1	Patent Expired Due to NonPayment of Maintenance Fees Under 37 CFR 1.362	
US4712983 A	20180131	LSLE	-STCH	INFORMATION ON STATUS: PATENT DISCONTINUATION	TEXT : PATENT EXPIRED DUE TO NONPAYMENT OF MAINTENANCE FEES UNDER 37 CFR 1.362

US4874296 A	19891017	LSGT	+	granted / extensions (spc, cpc, pte)	
US4874296 A	19890829	LSGT	PAT1	Patented Case	
US4874296 A	19931017	LSLE	-LAPS	LAPSE FOR FAILURE TO PAY MAINTENANCE FEES	
US4874296 A	19931228	LSLE	-FP	EXPIRED DUE TO FAILURE TO PAY MAINTENANCE FEE	EFFECTIVE DATE : 19891017
US4874296 A	20180130	LSLE	-PEX1	Patent Expired Due to NonPayment of Maintenance Fees Under 37 CFR 1.362	
US4874296 A	20180130	LSLE	-STCH	INFORMATION ON STATUS: PATENT DISCONTINUATION	TEXT : PATENT EXPIRED DUE TO NONPAYMENT OF MAINTENANCE FEES UNDER 37 CFR 1.362

Title: PATIENT SUPPORT SURFACE CONTROL, END OF LIFE INDICATION, AND X-RAY CASSETTE SLEEVE

Abstract: A patient support apparatus may include a support surface configured to conduct air along a top face of the support surface so that heat and moisture from a patient lying on the support surface are drawn away from the top face of the support surface. An opening may be formed in a side of the support surface. A cavity may extend from the opening into the support surface. An inlet port may be positioned within the cavity and fluidly coupled to the top face. A blower assembly may be configured to position within the cavity. The blower assembly may have an outlet port that couples to the inlet port when the blower assembly is positioned within the cavity. The blower assembly may conduct air through the inlet port to the top face of the support surface.

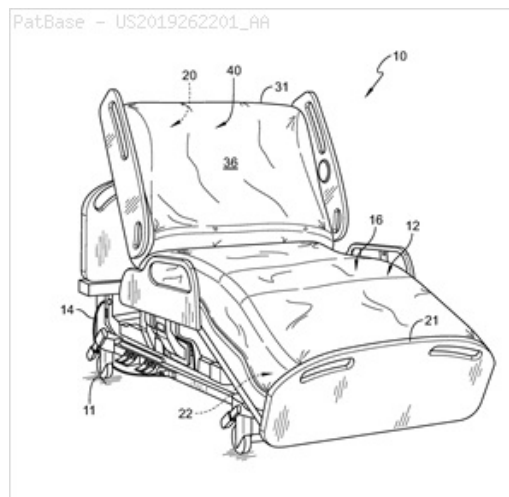
Classifications:

International (IPC 8-9): A47C21/04 A61F7/00 A61G7/00 A61G7/018

A61G7/05 A61G7/057 A61G7/075 G03B42/02 (Advanced/Invention)

CPC: A61G7/05784 A47C21/042 A61G7/015 A61G7/018 A61G7/05769

A61G7/05792 A61G7/0755 A61G2210/50 A61G2210/70



Family:

Publication number	Publication date	Application number	Application date
AU2019201323 AA	20190912	AU20190201323	20190226
CN110192956 A	20190903	CN201910147457	20190227
EP3530251 A2	20190828	EP20190159476	20190226
US2019262201 AA	20190829	US20190285608	20190226

Priority:

US20180635749P 20180227 US20180667769P 20180507 US20190793668P 20190117
US20190285608 20190226

Probable Assignee: HILL ROM SERVICES INC

Assignee(s): (std): HILL ROM SERVICES INC

Assignee(s): JPMORGAN CHASE BANK NA

Inventor(s): (std): NEWKIRK DAVID C ; SAUSER FRANK E ; AMRHEIN STEPHEN S ; BORGMAN DOUGLAS E ; JOHANNIGMAN NICOLE ; RAMEGOWDA JNANESHA ; GRACE JASON B ; GILREATH JASON M ; WILLIAMSON RACHEL L ; FISK BRANDON P ; MONTINI MICHAEL R ; SIMPSON THOMAS L ; BLESSING FARON L ; VOLL JAMES D ; CHOI KIN MENG ; SCHULTZ FREDERICK K ; WAGER ANDREW R ; SESHADRI SRIDHAR KARIMPUZHA ; MEYER ERIC R ; GIBBONS GARY R ; SHANNON GREGORY J ; CHURILLA MICHAEL ; FRANKLIN TAYLOR ; WAGNER CATHERINE M ; SHAH ARPIT ; WONG WUI HSIEN ; SMITH KATHRYN R ; KAIKENDER PHILIPPE ; GUETTA MATTHIEU ; LELLIG JEAN FRANCOIS ; GAUTIER HERVE ; BORGMAN DARRELL L ; LACHENBRUCH CHARLES A ; GUTHRIE BRIAN ; MOORES KEITH ; BYERS JOHN G ; CORBIN SCOTT ; GOEWERT JOHN ; CORBIN SCOTT M

Agent(s): SHELSTON IP PTY LTD; FINDLAY ALICE ROSEMARY

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

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
AU2019201323 AA	20190912	LSPB	+	published / reissued	
CN110192956 A	20190903	LSPB	+	published / reissued	
CN110192956 A	20190903	LSPB	PB01	公开 (The publication of application)	TEXT : 公开 (DISCLOSURE)
EP3530251 A2	20190828	LSPB	+	published / reissued	
US2019262201 AA	20190829	LSPB	+	published / reissued	

US2019262201 AA	20190904	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : JPMORGAN CHASE BANK, N.A., ILLINOIS OLDPARTY : SECURITY AGREEMENT; ASSIGNORS:HILL-ROM HOLDINGS, INC.; HILL-ROM, INC.; HILL-ROM SERVICES, INC.; AND OTHERS; REEL/FRAME:050260/0644 EFFECTIVE DATE : 20190830
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Title: HYDRATION SYSTEM **ACCESSORY** DEVICE

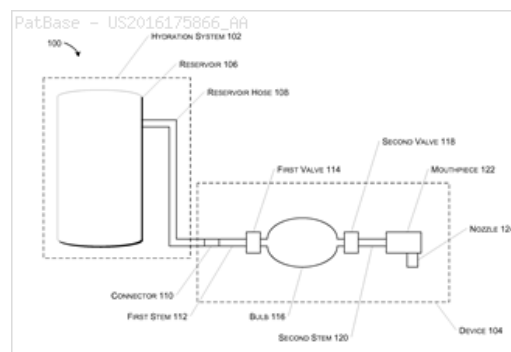
Abstract: The systems and processes described herein correspond to a device that is to be detachably coupled to a hydration system, such as a backpack-based hydration system. The device may receive fluid from a reservoir included within the hydration system via a reservoir **hose coupled** to the reservoir. The device may include a pump and one or more valves that control the extent to which the fluid flows in and out of the interior of the pump. The fluid may exit a mouthpiece of the device based at least partly in response to a user applying pressure to the exterior surface of the pump, such as by the user squeezing or otherwise compressing the pump. The user may consume or otherwise use the fluid without having to apply suction to the mouthpiece of the device.

Classifications:

International (IPC 8-9): A45F3/16 A45F3/20 B05B11/06 B05B9/08 B67D7/84 (Advanced/Invention)

CPC: A45F3/16 A45F2003/166 B05B9/085

US: 1/1 222/175 222/207 222/394



Family:

Publication number	Publication date	Application number	Application date
US2016175866 AA	20160623	US20140574091	20141217
US2017035188 AA	20170209	US20160296815	20161018
US9924781 BB	20180327	US20160296815	20161018

Priority:

US20140574091 20141217 US20160296815 20161018

Probable Assignee: KALALAU RYAN K

Assignee(s): (std): KALALAU RYAN K

Inventor(s): (std): KALALAU RYAN K

Agent(s): LEE AND HAYES PLLC

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
US2016175866 AA	20160623	LSPB	+	published / reissued	
US2016175866 AA	20161211	LSWD	-ABD3	Abandoned -- Failure to Respond to an Office Action	
US2017035188 AA	20170209	LSPB	+	published / reissued	
US2017035188 AA	20170823	LSES	NFA1	Non Final Action Mailed	
US2017035188 AA	20171213	LSES	+NAM1	Notice of Allowance Mailed -- Application Received in Office of Publications	
US2017035188 AA	20180307	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US9924781 BB	20180327	LSGT	+	granted / extensions (spc, cpc, pte)	
US9924781 BB	20180307	LSGT	PAT1	Patented Case	
US9924781 BB	20361018	PEXP		Calculated Patent Term Expiry	

Title: HEATED VACCUUM CARPET CLEANING AND DRYING APPARATUS

Abstract: A vacuum cleaning and/or drying systems having heaters which provide drying air to aid in drying or combined cleaning and drying. The system is particularly adapted and beneficial for use on carpets, but can also be used to clean other surfaces such as smooth floors or upholstery. The heaters are on a portable cleaning unit used within the room being cleaned. A support unit is preferably provided outside the room or building to generate vacuum and remove moisture from the room. The support unit is typically mounted on a vehicle and can provide compressed air or other gases and cleaning fluids. Compressed air can be used to agitate and facilitate both cleaning and drying. Compressed air can also be used to apply one or more additives, such as deodorizers and fragrances. The portable unit can also be used for drying flooded carpets and the like.

Classifications:

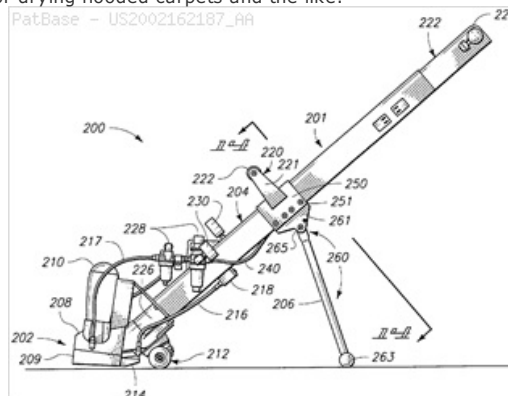
International (IPC 8-9): A47L11/30 A47L11/34 A47L9/02 A47L9/08 B08B5/04 (Advanced/Invention); B08B5/00 (Core/Invention)

International (IPC 1-7): A47L11/30 A47L5/14 A47L7/04 B08B5/04

CPC: A47L9/02 A47L9/08 A47L11/34 A47L11/4044 A47L11/4088 A47L11/4083

European: A47L11/34 A47L11/40F6 A47L11/40N2 A47L11/40N6 A47L9/02 A47L9/08

US: 15/321 15/322 15/339 15/345 15/345P



Family:

Publication number	Publication date	Application number	Application date
AU2000244885 AA	20011107	AU20000244885	20000424
AU200044885 A1	20011107	AU20000044885	20000424
AU200044885 A5	20011107	AU20000044885D	20000424
US2002162187 AA	20021107	US20010797917	20010301
US2003097727 AA	20030529	US20030340509	20030110
US6052861 A	20000425	US19980042894	19980316
US6449799 BA	20020917	US20000556242	20000424
US6505379 BB	20030114	US20010797917	20010301
US7171722 BB	20070206	US20030340509	20030110
WO0181018 A1	20011101	WO2000US11051	20000424

Priority:

US19980042894 19980316 US20000556242 20000424 WO2000US11051 20000424
US20010797917 20010301 US20030340509 20030110

Probable Assignee: KRIS D KELLER

Assignee(s): (std): KELLER KRIS D ; KRIS D KELLER

Inventor(s): (std): KELLER KRIS D

Inventor(s): KRIS D KELLER

Agent(s): GREGORY IP LAW; RANDY A

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

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
AU2000244885 AA	20011107	LSPB	+	published / reissued	
AU200044885 A1	20011107	LSPB	+	published / reissued	
US2002162187 AA	20021107	LSPB	+	published / reissued	
US2003097727 AA	20030529	LSPB	+	published / reissued	
US6052861 A	20000425	LSGT	+	granted / extensions (spc, cpc, pte)	
US6052861 A	20010508	LSRE	CC	CERTIFICATE OF CORRECTION	
US6052861 A	20031016	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US6052861 A	20071009	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8

US6052861 A	20120425	LSLE	-LAPS	LAPSE FOR FAILURE TO PAY MAINTENANCE FEES	
US6052861 A	20120521	LSLE	-PEX1	Patent Expired Due to NonPayment of Maintenance Fees Under 37 CFR 1.362	
US6052861 A	20120521	LSLE	-STCH	INFORMATION ON STATUS: PATENT DISCONTINUATION	TEXT : PATENT EXPIRED DUE TO NONPAYMENT OF MAINTENANCE FEES UNDER 37 CFR 1.362
US6052861 A	20120612	LSLE	-FP	EXPIRED DUE TO FAILURE TO PAY MAINTENANCE FEE	EFFECTIVE DATE : 20120425
US6052861 A	20180316	PEXP		Calculated Patent Term Expiry	
US6449799 BA	20020917	LSGT	+	granted / extensions (spc, cpc, pte)	
US6449799 BA	20030617	LSRE	CC	CERTIFICATE OF CORRECTION	
US6449799 BA	20060316	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US6449799 BA	20100917	LSLE	-LAPS	LAPSE FOR FAILURE TO PAY MAINTENANCE FEES	
US6449799 BA	20100917	LSRE	+REIN	REINSTATEMENT AFTER MAINTENANCE FEE PAYMENT CONFIRMED	
US6449799 BA	20101109	LSLE	-FP	EXPIRED DUE TO FAILURE TO PAY MAINTENANCE FEE	EFFECTIVE DATE : 20100917
US6449799 BA	20110314	LSRE	+PRDP	PATENT REINSTATED DUE TO THE ACCEPTANCE OF A LATE MAINTENANCE FEE	EFFECTIVE DATE : 20110315
US6449799 BA	20110315	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US6449799 BA	20140917	LSLE	-LAPS	LAPSE FOR FAILURE TO PAY MAINTENANCE FEES	
US6449799 BA	20141013	LSLE	-PEX1	Patent Expired Due to NonPayment of Maintenance Fees Under 37 CFR 1.362	
US6449799 BA	20141013	LSLE	-STCH	INFORMATION ON STATUS: PATENT DISCONTINUATION	TEXT : PATENT EXPIRED DUE TO NONPAYMENT OF MAINTENANCE FEES UNDER 37 CFR 1.362
US6449799 BA	20141104	LSLE	-FP	EXPIRED DUE TO FAILURE TO PAY MAINTENANCE FEE	EFFECTIVE DATE : 20140917
US6449799 BA	20200424	PEXP		Calculated Patent Term Expiry	
US6505379 BB	20030114	LSGT	+	granted / extensions (spc, cpc, pte)	
US6505379 BB	20060714	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US6505379 BB	20110114	LSRE	+REIN	REINSTATEMENT AFTER MAINTENANCE FEE PAYMENT CONFIRMED	
US6505379 BB	20110308	LSLE	-FP	EXPIRED DUE TO FAILURE TO PAY MAINTENANCE FEE	EFFECTIVE DATE : 20110114
US6505379 BB	20110314	LSRE	+PRDP	PATENT REINSTATED DUE TO THE ACCEPTANCE OF A LATE MAINTENANCE FEE	EFFECTIVE DATE : 20110315
US6505379 BB	20110315	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US6505379 BB	20150114	LSLE	-LAPS	LAPSE FOR FAILURE TO PAY MAINTENANCE FEES	
US6505379 BB	20150209	LSLE	-PEX1	Patent Expired Due to NonPayment of Maintenance Fees Under 37 CFR 1.362	
US6505379 BB	20150209	LSLE	-STCH	INFORMATION ON STATUS: PATENT DISCONTINUATION	TEXT : PATENT EXPIRED DUE TO NONPAYMENT OF MAINTENANCE FEES UNDER 37 CFR 1.362
US6505379 BB	20150303	LSLE	-FP	EXPIRED DUE TO FAILURE TO PAY MAINTENANCE FEE	EFFECTIVE DATE : 20150114

US6505379 BB	20210322	PEXP		Calculated Patent Term Expiry (PTA 21 days)	
US7171722 BB	20070206	LSGT	+	granted / extensions (spc, cpc, pte)	
US7171722 BB	20100806	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US7171722 BB	20150206	LSLE	-LAPS	LAPSE FOR FAILURE TO PAY MAINTENANCE FEES	
US7171722 BB	20150309	LSLE	-PEX1	Patent Expired Due to NonPayment of Maintenance Fees Under 37 CFR 1.362	
US7171722 BB	20150309	LSLE	-STCH	INFORMATION ON STATUS: PATENT DISCONTINUATION	TEXT : PATENT EXPIRED DUE TO NONPAYMENT OF MAINTENANCE FEES UNDER 37 CFR 1.362
US7171722 BB	20150331	LSLE	-FP	EXPIRED DUE TO FAILURE TO PAY MAINTENANCE FEE	EFFECTIVE DATE : 20150206
US7171722 BB	20231012	PEXP		Calculated Patent Term Expiry (PTA 275 days)	
WO0181018 A1	20011101	LSPB	+	published / reissued	
WO0181018 A1	20021002	LSWD	REG	REFERENCE TO NATIONAL CODE	REF COUNTRY CODE : DE REF LEGAL EVENT CODE : 8642
WO0181018 A1	20030514	LSNE	-122	EP: PCT APPLICATION NON-ENTRY IN EUROPEAN PHASE	REF COUNTRY CODE : WO
WO0181018 A1	20040128	LSNE	NENP	NON-ENTRY INTO THE NATIONAL PHASE IN:	REF COUNTRY CODE : JP

Title: SCUBA MOUTHPIECE HAVING MOUTH ACTIVATION OF GAS SUPPLY

Abstract: A SCUBA mouthpiece (7), a valve body (5) having one end receiving a **hose coupling** (4) and one end receiving the mouthpiece, and a valve actuator (12) extending through the mouthpiece. Inward squeezing pressure by the diver's mouth opens the valve and supplies breathing gas.

Classifications:

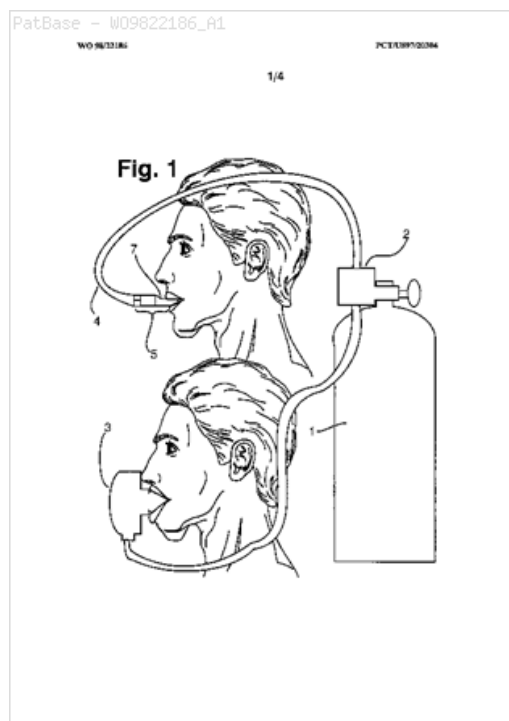
International (IPC 8-9): A62B9/02 B63C11/22 (Advanced/Invention);

A62B9/00 B63C11/02 (Core/Invention)

International (IPC 1-7): A62B18/10

CPC: A62B9/02 B63C11/2227

European: A62B9/02 B63C11/22B



Family:

Publication number	Publication date	Application number	Application date
AU199851725 A1	19980610	AU19980051725	19971104
WO9822186 A1	19980528	WO1997US20304	19971104

Priority:

US19960031372P 19961119 WO1997US20304 19971104

Probable Assignee: SEA TURTLE SCUBA INC

Assignee(s): (std): SEA TURTLE SCUBA INC

Inventor(s): (std): STIER BARRY

Inventor(s): BARRY STIER

Designated states: AL AM AT AU AZ BA BB BE BG BR BY CA CH CN CU CZ DE DK EE ES FI FR GB GE GH GR HU ID IE IL IS IT JP KE KG KP KR KZ LC LK LR LS LT LU LV MC MD MG MK MN MW MX NL NO NZ PL PT RO RU SD SE SG SI SK SL SZ TJ TM TR TT UA UG UZ VN YU ZW

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
AU199851725 A1	19980610	LSPB	+	published / reissued	
WO9822186 A1	19980528	LSPB	+	published / reissued	
WO9822186 A1	19990923	LSWD	REG	REFERENCE TO NATIONAL CODE	REF COUNTRY CODE : DE REF LEGAL EVENT CODE : 8642
WO9822186 A1	20000412	LSNE	-122	EP: PCT APPLICATION NON-ENTRY IN EUROPEAN PHASE	REF COUNTRY CODE : WO
WO9822186 A1	20000519	LSNE	NENP	NON-ENTRY INTO THE NATIONAL PHASE IN:	REF COUNTRY CODE : CA

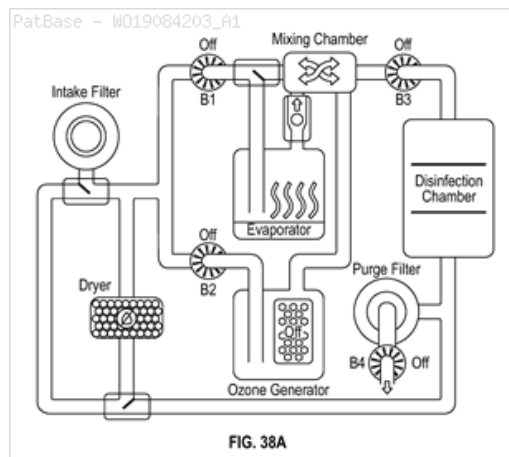
Title: DEVICES, SYSTEMS, AND METHODS FOR STERILIZATION, DISINFECTION, SANITIZATION AND DECONTAMINATION

Abstract: A sterilization, disinfection, sanitization, or decontamination system having a chamber defining a region, and a generator for creating a free radical effluent with reactive oxygen, nitrogen, and other species and/or a vaporizer. A closed loop circulating system without a free-radical destroyer is provided for supplying the mixture of free radicals from the generator mixed with the hydrogen peroxide solution in the form of the effluent to the chamber. The system is used in sterilizing, disinfecting, sanitizing, or decontaminating items in the chamber or room and, with a wound chamber, in treating wounds on a body. The wound chamber may be designed to maintain separation from wounds being treated. Various embodiments can control moisture to reduce or avoid unwanted condensation. Some embodiments may be incorporated into an appliance having a closed space, such as a washing machine. Some embodiments may include a residual coating device that deposits a bactericidal coating on sterilized items.

Classifications:

International (IPC 8-9): A61L2/16 B65D90/02 (Advanced/Invention)

CPC: A61L2/186 A61L2/0082 A61L2/10 A61L2/14 A61L2/202 A61L2/22 A61L2202/11 A61L2202/122 A61L2202/13 A61L2202/14 A61L2202/15 A61L2202/16 A61L2202/21 A61L2202/24 A61L2202/25 B65D90/02 C01B13/11 H05H1/2406



Family:

Publication number	Publication date	Application number	Application date
WO19084203 A1	20190502	WO2018US57404	20181024

Priority:

US20170577130P 20171025 US20170599649P 20171215 US20180727344P 20180905

Probable Assignee: STERIFRE MEDICAL INC

Assignee(s): (std): STERIFRE MEDICAL INC

Inventor(s): (std): ALLEN ROBERT ; ERTTEL JASON ; GOLKOWSKI CZESLAW ; GREENE JON ; GOLKOWSKI MARK ; MAKAROV SERGEY ; SHEA RICK ; YE DANWEI ; PARKER BEN

Agent(s): ALTMAN DANIEL E

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 DJ 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 IR IS IT JO JP KE KG KH KM KN KP KR KW KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA 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

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
WO19084203 A1	20190502	LSPB	+	published / reissued	

Title: Apparatus and methods for hose storage

Abstract: A hose storage device that can be removably or permanently attached to a vehicle or to the frame unit of a portable power unit, such as those used with hydraulic rescue tools for the extrication of persons trapped in automobiles, trailers, buildings, etc. One or more of the devices can be used with a single power unit depending on the number of hoses to be used with the power unit. Hose storage devices are lightweight, durable and help prevent the damage to hoses that can result from other storage systems.

Classifications:

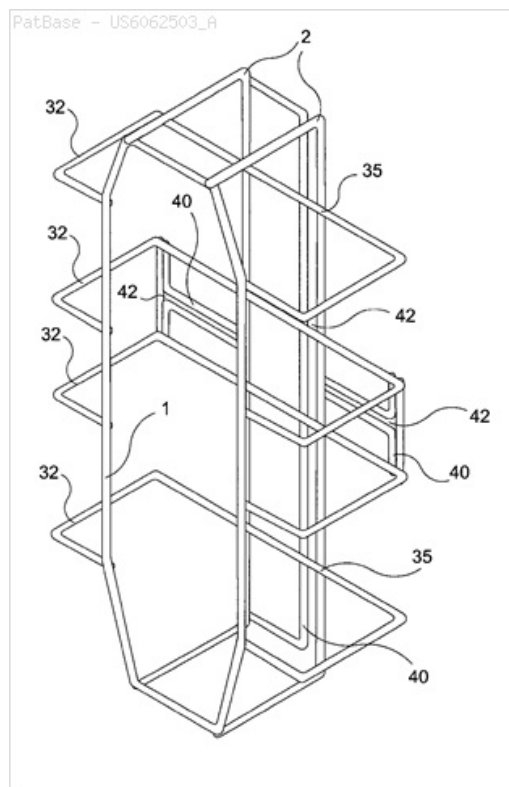
International (IPC 8-9): A62C33/04 B65D85/04 B65H75/20 B65H75/36 B65H75/42 (Advanced/Invention)

International (IPC 1-7): B65D6/08 B65H16/00 B65H16/02 B65H75/38 B65H75/42

CPC: A62C33/04 B65D85/04 B65H75/20 B65H75/364

European: A62C33/04 B65D85/04 B65H75/20 B65H75/36B2

US: 220/491 242/387 242/588 242/588.2 242/590 242/594



Family:

Publication number	Publication date	Application number	Application date
CA2207750 AA	19971213	CA19972207750	19970613
US6062503 A	20000516	US19980096951	19980612

Priority:

US1996063564 19960613 CA19972207750 19970613 US19980096951 19980612

Probable Assignee: FAST BASKET INC

Assignee(s): (std): BLAIR WILLIAM BLAKE ; FAST BASKET INC ; GODFREY DANIEL

Inventor(s): (std): GODFREY DANIEL ; BLAIR WILLIAM BLAKE

Agent(s): MACRAE AND CO

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
CA2207750 AA	19971213	LSPB	+	published / reissued	
CA2207750 AA	20020613	LSLE	-FZDE	DEAD	
US6062503 A	20000516	LSGT	+	granted / extensions (spc, cpc, pte)	
US6062503 A	19991203	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : FAST BASKET, INC., FLORIDA OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:BLAIR, WILLIAM BLAKE; GODFREY, DANIEL; REEL/FRAME:010447/0666; SIGNING DATES FROM 19990504 TO 19991113
US6062503 A	20010320	LSRE	CC	CERTIFICATE OF CORRECTION	

US6062503 A	20040517	LSRE	+REIN	REINSTATEMENT AFTER MAINTENANCE FEE PAYMENT CONFIRMED	
US6062503 A	20040713	LSLE	-FP	EXPIRED DUE TO FAILURE TO PAY MAINTENANCE FEE	EFFECTIVE DATE : 20040516
US6062503 A	20040715	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US6062503 A	20041011	LSRE	+PRDP	PATENT REINSTATED DUE TO THE ACCEPTANCE OF A LATE MAINTENANCE FEE	EFFECTIVE DATE : 20041014
US6062503 A	20080516	LSLE	-LAPS	LAPSE FOR FAILURE TO PAY MAINTENANCE FEES	
US6062503 A	20080616	LSLE	-PEX1	Patent Expired Due to NonPayment of Maintenance Fees Under 37 CFR 1.362	
US6062503 A	20080616	LSLE	-STCH	INFORMATION ON STATUS: PATENT DISCONTINUATION	TEXT : PATENT EXPIRED DUE TO NONPAYMENT OF MAINTENANCE FEES UNDER 37 CFR 1.362
US6062503 A	20080708	LSLE	-FP	EXPIRED DUE TO FAILURE TO PAY MAINTENANCE FEE	EFFECTIVE DATE : 20080516
US6062503 A	20180612	PEXP		Calculated Patent Term Expiry	

Title: AIR COMPRESSOR ASSEMBLY

Abstract: An air compressor assembly with one or more of the following features: a removable manifold assembly capable of being remotely located from the air compressor assembly for controlling and distributing compressed air from the air compressor assembly to one or more air powered tools, a lifting handle, a handle capable of assuming a plurality of positions, condensate removal devices, and a stable base and tie-down points.

Classifications:

International (IPC 8-9): A01G25/09 B60P3/30 B60R15/04 B67D5/00 B67D99/00 E03B5/00 F04B35/04 F04B35/06 F04B39/00 F04B41/02 F04B49/00 F04B53/00 F16M3/00 (Advanced/Invention); B67D99/00 F04B35/00 F04B41/00 F04B49/00 F04B53/00 F16M3/00 (Core/Invention)

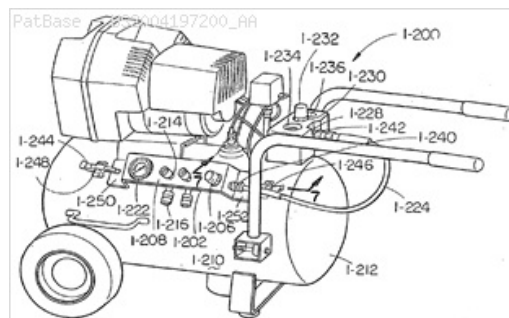
International (IPC 1-7): A01G25/09 A45D19/04 A47J47/16 B60P3/22 B60P3/30 B60R15/04 B65H75/34 E01H1/10 E01H3/02 F04B39/00 F04B53/00 F25B27/00

CPC: Y10T137/86051 Y10T137/6851 Y10T137/8326 Y10T137/5109 Y10T137/6914 Y10T137/7837 Y10T137/5283 B25H3/00 B62B1/008 B62B1/125 B62B5/067 F04B35/06 F04B41/02 F04B49/00

European: B25H3/00 B62B1/12T F04B35/06 F04B41/02 F04B49/00 L62B1/00P L62B5/06S

US: 137/269 137/271 137/343 137/511 137/557 137/565.18 137/899.4 137/899.400S 248/127 248/128 248/129 248/145.6 417/234 417/234P 417/313 417/313S 417/410.1 417/410.100P 417/410.100S 417/572 417/572S 417/63 D15/9

Locarno class: 15/02



Family:

Publication number	Publication date	Application number	Application date
CA2569149 AA	20061129	CA20052569149	20050527
CA2569149 C	20130723	CA20052569149	20050527
CN101158342 A	20080409	CN200610064411	20061012
CN101158342 B	20130508	CN200610064411	20061012
CN1536225 A	20041013	CN20031056352	20030904
CN1993549 A	20070704	CN200580026002	20050527
CN1993549 B	20120411	CN200580026002	20050527
CN3356516 D	20040310	CN20033058051F	20030827
EP1770279 A2	20070404	EP20060121595	20061002
EP1770279 A3	20111026	EP20060121595	20061002
EP2508757 A2	20121010	EP20120175057	20061002
EP2508757 A3	20180221	EP20120175057	20061002
US2004197200 AA	20041007	US20040832627	20040426
US2005191187 AA	20050901	US20050123417	20050506
US2006104835 AA	20060518	US20050048639	20050131
US2007122292 AA	20070531	US20060541952	20061002
US2008044296 AA	20080221	US20070652842	20070112
US2009053076 AA	20090226	US20080262812	20081031
US2011123362 AA	20110526	US20100941353	20101108
US6468048 BA	20021022	US20010802139	20010308
US6532990 BA	20030318	US20010801406	20010308
US6532991 BA	20030318	US20010801408	20010308
US6655925 BA	20031202	US20010802149	20010308
US6742995 BA	20040601	US20020277187	20021021
US6923627 BA	20050802	US20030410129	20030409
US7025573 BA	20060411	US20040982395	20041105
US7163382 BA	20070116	US20030444708	20030523
US7413414 BB	20080819	US20040832627	20040426
US7458784 BB	20081202	US20050123417	20050506
US7832991 BB	20101116	US20070652842	20070112
US7909584 BB	20110322	US20060541952	20061002
US8814535 BB	20140826	US20100941353	20101108
USD491197 S1	20040608	US20030179391F	20030409
WO05117567 A2	20051215	WO2005US19182	20050527
WO05117567 A3	20061214	WO2005US19182	20050527

Priority:

US20000187680P	20000308	US20000187723P	20000308	US20000187744P	20000308
US20000187745P	20000308	US20010802149	20010308	US20010801406	20010308
US20010801408	20010308	US20010802139	20010308	US20020277187	20021021
US20030410129	20030409	US20030179391F	20030409	US20030469645P	20030512
US20030444708	20030523	US20030517644P	20031105	US20040540755P	20040130
US20040832627	20040426	US20040575907P	20040601	US20040982395	20041105
US20050048639	20050131	US20050123417	20050506	WO2005US19182	20050527
US20050723172P	20051003	EP20060121595	20061002	US20060541952	20061002
US20070652842	20070112	US20080541952	20081002	US20080262812	20081031
US20100941353	20101108				

Probable Assignee: BLACK AND DECKER INC

Assignee(s): (std): DELLBES AIR POSER CORP ; DEVILBISS AIR POWER CO ; HATHCOCK LANCE ; ETTER MARK A ; MORGAN FREDRICK M ; HANSON CHAD W ; VINTZEL JAMES ; SMITH TIMOTHY C ; MORGAN FREDERICK M ; BLACK AND DECKER INC ; BUCK JOHN ; VOS STEPHEN J ; WELSH ROBERT P

Assignee(s): WOOD MARK W ; BURKHOLDER ROBERT F ; DAVIS MIKE L ; DEVILBISS AIR POWER COMPANY ; ROBENALT DAVID W ; HARDIN JOHN W ; MORGAN FRED M ; SMITH DAVE C ; HATHCOOK LANCE ; BARBOUR CRANDALL B

Inventor(s): (std): SHDIWEI J K ; DWHITE G ; WORS S J ; VOS STEPHEN J ; HATHCOOK LANCE ; HATHCOCK LANCE ; KRENTZER GARY ; PATTERSON TRAVIS ; JORDAN STEVE A ; VINTZEL JAMES ; WHITE GARY D ; ETTER MARK A ; MORGAN FREDRICK M ; HANSON CHAD W ; LANCE VOS STEPHEN J HATHCOCK ; MORGAN FREDERICK ; HANSON CHAD ; BARBOUR CRANDALL ; BURKHOLDER ROBERT ; WOOD MARK ; STILLWELL J C ; MORGAN FREDERICK M ; BUCK JOHN ; WELSH ROBERT P ; SMITH TIMOTHY C ; MORGAN FRED M ; DAVIS MIKE L ; BARBOUR CRANDALL B ; BURKHOLDER ROBERT F ; WOOD MARK W ; SMITH DAVE C ; ROBENALT DAVID W ; HARDIN JOHN W ; STILWELL J CODY ; WHITE GARY ; VOS STEPHEN ; BUCK JOHN E ; LANCE HATHCOCK ; JOHN BUCK

Inventor(s): STILLWELL J CODY ; S J WORS ; J K SHDIWEI ; JK SHDIWEI ; G DWHITE ; SJ WORS ; HARDIN JOHN ; STILLWELL J ; DAVIS MIKE ; MORGAN FRED ; ROBENALT DAVID ; SMITH DAVE ; SMITH TIMOTHY ; ETTER MARK ; WELSH ROBERT ; MORGAN FREDRICK ; VOS STEPHEN J HATHCOCK LANCE

Agent(s): GOWLING LAFLEUR HENDERSON LLP; BELL IAN STEPHEN; SBD IPADMIN; SUITER WEST SWANTZ PC LLO; BLACK AND DECKER CORP; HARNESS DICKEY AND PIERCE PLC; SUITER WEST PC LLO; ADAN; CHARLES E; MICHAEL P; AYALA ADAN; MARKOW SCOTT B; SCOTT B; LEARY MICHAEL P; RHONDA L

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KM KP KR KZ LC LI LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX 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 SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
CA2569149 AA	20061129	LSPB	+	published / reissued	
CA2569149 AA	20100525	LSSES	+EEER	EXAMINATION REQUEST	
CA2569149 C	20130723	LSGT	+	granted / extensions (spc, cpc, pte)	
CA2569149 C	20250527	PEXP		Calculated Patent Term Expiry	
CN101158342 A	20080409	LSPB	+	published / reissued	
CN101158342 A	20080409	LSPB	+C06	PUBLICATION	
CN101158342 B	20130508	LSGT	+	granted / extensions (spc, cpc, pte)	
CN101158342 B	20130508	LSGT	+C14	GRANT OF PATENT OR UTILITY MODEL	
CN101158342 B	20261012	PEXP		Calculated Patent Term Expiry	
CN1536225 A	20041013	LSPB	+	published / reissued	
CN1536225 A	20041013	LSPB	+C06	PUBLICATION	
CN1536225 A	20070221	LSDW	-C02	DEEMED WITHDRAWAL OF PATENT APPLICATION AFTER PUBLICATION (PATENT LAW 2001)	
CN1993549 A	20070704	LSPB	+	published / reissued	
CN1993549 A	20070704	LSPB	+C06	PUBLICATION	
CN1993549 B	20120411	LSGT	+	granted / extensions (spc, cpc, pte)	
CN1993549 B	20120411	LSGT	+C14	GRANT OF PATENT OR UTILITY MODEL	
CN1993549 B	20250527	PEXP		Calculated Patent Term Expiry	
CN3356516 D	20040310	LSGT	+	granted / extensions (spc, cpc, pte)	
CN3356516 D	20130827	PEXP		Calculated Patent Term Expiry	

EP1770279 A2	20070404	LSPB	+	published / reissued	
EP1770279 A3	20120704	LSFE	-AKY	NO DESIGNATION FEES PAID	
EP1770279 A3	20120905	LSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 20120727
EP1770279 A3	20171220	LSES	+17Q	FIRST EXAMINATION REPORT DESPATCHED	EFFECTIVE DATE : 20171117
EP1770279 A3	20181114	LSDW	-18D	APPLICATION DEEMED TO BE WITHDRAWN	EFFECTIVE DATE : 20180529
EP2508757 A2	20121010	LSPB	+	published / reissued	
EP2508757 A3	20180314	LSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 20180201
US2004197200 AA	20041007	LSPB	+	published / reissued	
US2004197200 AA	20050419	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : BLACK & DECKER INC., DELAWARE OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:DEVILBISS AIR POWER COMPANY; REEL/FRAME:016097/0826 EFFECTIVE DATE : 20050418
US2004197200 AA	20080730	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US2005191187 AA	20050901	LSPB	+	published / reissued	
US2005191187 AA	20081112	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US2006104835 AA	20060518	LSPB	+	published / reissued	
US2006104835 AA	20050620	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : BLACK & DECKER INC., DELAWARE OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:ETTER, MARK A.; MORGAN, FREDERICK M.; HANSON, CHAD W.; AND OTHERS; REEL/FRAME:016363/0123; SIGNING DATES FROM 20050413 TO 20050615
US2006104835 AA	20090731	LSWD	-ABD3	Abandoned -- Failure to Respond to an Office Action	
US2007122292 AA	20070531	LSPB	+	published / reissued	
US2007122292 AA	20110302	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US2008044296 AA	20080221	LSPB	+	published / reissued	
US2008044296 AA	20101027	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US2009053076 AA	20090226	LSPB	+	published / reissued	
US2009053076 AA	20111103	LSWD	-ABD3	Abandoned -- Failure to Respond to an Office Action	
US2011123362 AA	20110526	LSPB	+	published / reissued	
US2011123362 AA	20140806	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US6468048 BA	20021022	LSGT	+	granted / extensions (spc, cpc, pte)	
US6468048 BA	20010413	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER

					OWNER : DEVILBISS AIR POWER COMPANY, TENNESSEE OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR: BURKHOLDER, ROBERT; REEL/FRAME: 011680/0408 EFFECTIVE DATE : 20010223
US6468048 BA	20050419	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : BLACK & DECKER INC., DELAWARE OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR: DEVILBISS AIR POWER COMPANY; REEL/FRAME: 016097/0826 EFFECTIVE DATE : 20050418
US6468048 BA	20060405	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US6468048 BA	20101022	LSLE	-LAPS	LAPSE FOR FAILURE TO PAY MAINTENANCE FEES	
US6468048 BA	20101122	LSLE	-PEX1	Patent Expired Due to NonPayment of Maintenance Fees Under 37 CFR 1.362	
US6468048 BA	20101122	LSLE	-STCH	INFORMATION ON STATUS: PATENT DISCONTINUATION	TEXT : PATENT EXPIRED DUE TO NONPAYMENT OF MAINTENANCE FEES UNDER 37 CFR 1.362
US6468048 BA	20101214	LSLE	-FP	EXPIRED DUE TO FAILURE TO PAY MAINTENANCE FEE	EFFECTIVE DATE : 20101022
US6468048 BA	20210308	PEXP		Calculated Patent Term Expiry	
US6532990 BA	20030318	LSGT	+	granted / extensions (spc, cpc, pte)	
US6532990 BA	20010308	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : DEVILBISS AIR POWER COMPANY, TENNESSEE OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS: WOOD, MARK W.; BURKHOLDER, ROBERT F.; BARBOUR, CRANDALL B.; AND OTHERS; REEL/FRAME: 011587/0852; SIGNING DATES FROM 20010223 TO 20010303
US6532990 BA	20050419	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : BLACK & DECKER INC., DELAWARE OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR: DEVILBISS AIR POWER COMPANY; REEL/FRAME: 016097/0826 EFFECTIVE DATE : 20050418
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US6532990 BA	20100920	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US6532990 BA	20150318	LSLE	-LAPS	LAPSE FOR FAILURE TO PAY MAINTENANCE FEES	
US6532990 BA	20150413	LSLE	-PEX1	Patent Expired Due to NonPayment of Maintenance Fees Under 37 CFR 1.362	
US6532990 BA	20150413	LSLE	-STCH	INFORMATION ON STATUS: PATENT DISCONTINUATION	TEXT : PATENT EXPIRED DUE TO NONPAYMENT OF MAINTENANCE FEES UNDER 37 CFR 1.362
US6532990 BA	20150505	LSLE	-FP	EXPIRED DUE TO FAILURE TO PAY MAINTENANCE FEE	EFFECTIVE DATE : 20150318
US6532990 BA	20210308	PEXP		Calculated Patent Term Expiry	
US6532991 BA	20030318	LSGT	+	granted / extensions (spc, cpc, pte)	

US6532991 BA	20010308	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : DEVILBISS AIR POWER COMPANY, TENNESSEE OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:WOOD, MARK W.; ROBENALT, DAVID W.; BARBOUR, CRANDALL B.; REEL/FRAME:011587/0813 EFFECTIVE DATE : 20010223
US6532991 BA	20050419	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : BLACK & DECKER INC., DELAWARE OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:DEVILBISS AIR POWER COMPANY; REEL/FRAME:016097/0826 EFFECTIVE DATE : 20050418
US6532991 BA	20060707	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US6532991 BA	20100920	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US6532991 BA	20150318	LSLE	-LAPS	LAPSE FOR FAILURE TO PAY MAINTENANCE FEES	
US6532991 BA	20150413	LSLE	-PEX1	Patent Expired Due to NonPayment of Maintenance Fees Under 37 CFR 1.362	
US6532991 BA	20150413	LSLE	-STCH	INFORMATION ON STATUS: PATENT DISCONTINUATION	TEXT : PATENT EXPIRED DUE TO NONPAYMENT OF MAINTENANCE FEES UNDER 37 CFR 1.362
US6532991 BA	20150505	LSLE	-FP	EXPIRED DUE TO FAILURE TO PAY MAINTENANCE FEE	EFFECTIVE DATE : 20150318
US6532991 BA	20210308	PEXP		Calculated Patent Term Expiry	
US6655925 BA	20031202	LSGT	+	granted / extensions (spc, cpc, pte)	
US6655925 BA	20010611	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : DEVILBISS AIR POWER COMPANY, TENNESSEE OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:ROBENALT, DAVID W.; SMITH, DAVE C.; WOOD, MARK W.; AND OTHERS; REEL/FRAME:011880/0345; SIGNING DATES FROM 20010223 TO 20010303
US6655925 BA	20031113	LSGT	PAT1	Patented Case	
US6655925 BA	20050419	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : BLACK & DECKER INC., DELAWARE OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:DEVILBISS AIR POWER COMPANY; REEL/FRAME:016097/0826 EFFECTIVE DATE : 20050418
US6655925 BA	20070330	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US6655925 BA	20110602	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US6655925 BA	20151202	LSLE	-LAPS	LAPSE FOR FAILURE TO PAY MAINTENANCE FEES	
US6655925 BA	20151228	LSLE	-PEX1	Patent Expired Due to NonPayment of Maintenance Fees Under 37 CFR 1.362	
US6655925 BA	20151228	LSLE	-STCH	INFORMATION ON STATUS: PATENT DISCONTINUATION	TEXT : PATENT EXPIRED DUE TO NONPAYMENT OF MAINTENANCE FEES UNDER 37 CFR 1.362
US6655925 BA	20160119	LSLE	-FP	EXPIRED DUE TO FAILURE TO PAY	EFFECTIVE DATE : 20151202

US6655925 BA	20210308	PEXP		MAINTENANCE FEE Calculated Patent Term Expiry	
US6742995 BA	20040601	LSGT	+	granted / extensions (spc, cpc, pte)	
US6742995 BA	20021216	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : DEVILBISS AIR POWER COMPANY, TENNESSEE OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:WOOD, MARK W.; DAVIS, MIKE L.; SMITH, DAVE C.; AND OTHERS; REEL/FRAME:013603/0802; SIGNING DATES FROM 20021018 TO 20021025
US6742995 BA	20040513	LSGT	PAT1	Patented Case	
US6742995 BA	20040513	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US6742995 BA	20050419	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : BLACK & DECKER INC., DELAWARE OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:DEVILBISS AIR POWER COMPANY; REEL/FRAME:016097/0826 EFFECTIVE DATE : 20050418
US6742995 BA	20070926	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US6742995 BA	20110923	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US6742995 BA	20151119	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 12
US6742995 BA	20221021	PEXP		Calculated Patent Term Expiry	
US6923627 BA	20050802	LSGT	+	granted / extensions (spc, cpc, pte)	
US6923627 BA	20030409	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : DEVILBISS AIR POWER COMPANY, TENNESSEE OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:WOOD, MARK W.; BURKHOLDER, ROBERT F.; BARBOUR, CRANDALL B.; AND OTHERS; REEL/FRAME:013959/0572; SIGNING DATES FROM 20030326 TO 20030402
US6923627 BA	20050419	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : BLACK & DECKER INC., DELAWARE OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:DEVILBISS AIR POWER COMPANY; REEL/FRAME:016097/0826 EFFECTIVE DATE : 20050418
US6923627 BA	20050713	LSGT	PAT1	Patented Case	
US6923627 BA	20050713	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US6923627 BA	20090202	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US6923627 BA	20130204	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US6923627 BA	20170119	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 12
US6923627 BA	20230819	PEXP		Calculated Patent Term Expiry (PTA 132 days)	
US7025573 BA	20060411	LSGT	+	granted / extensions (spc, cpc, pte)	
US7025573 BA	20050126	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : BLACK & DECKER INC., DELAWARE OLDPARTY : ASSIGNMENT OF

					ASSIGNORS INTEREST; ASSIGNORS:HARDIN, JOHN W.; KREUTZER, GARY; PATTERSON, TRAVIS; AND OTHERS; REEL/FRAME:015623/0421; SIGNING DATES FROM 20050111 TO 20050118
US7025573 BA	20060322	LSGT	PAT1	Patented Case	
US7025573 BA	20091013	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US7025573 BA	20131011	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US7025573 BA	20171120	LSFE	FEPP	FEE PAYMENT PROCEDURE	TEXT : MAINTENANCE FEE REMINDER MAILED (ORIGINAL EVENT CODE: REM.)
US7025573 BA	20180507	LSLE	-LAPS	LAPSE FOR FAILURE TO PAY MAINTENANCE FEES	TEXT : PATENT EXPIRED FOR FAILURE TO PAY MAINTENANCE FEES (ORIGINAL EVENT CODE: EXP.)
US7025573 BA	20180507	LSLE	-PEX1	Patent Expired Due to NonPayment of Maintenance Fees Under 37 CFR 1.362	
US7025573 BA	20180507	LSLE	-STCH	INFORMATION ON STATUS: PATENT DISCONTINUATION	TEXT : PATENT EXPIRED DUE TO NONPAYMENT OF MAINTENANCE FEES UNDER 37 CFR 1.362
US7025573 BA	20180529	LSLE	-FP	EXPIRED DUE TO FAILURE TO PAY MAINTENANCE FEE	EFFECTIVE DATE : 20180411
US7025573 BA	20241105	PEXP		Calculated Patent Term Expiry	
US7163382 BA	20070116	LSGT	+	granted / extensions (spc, cpc, pte)	
US7163382 BA	20030523	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : DEVILBISS AIR POWER COMPANY, TENNESSEE OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:STILWELL, J. CODY; VOX, STEPHEN J.; WHITE, GARY D.; REEL/FRAME:014116/0001 EFFECTIVE DATE : 20030522
US7163382 BA	20050419	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : BLACK & DECKER INC., DELAWARE OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:DEVILBISS AIR POWER COMPANY; REEL/FRAME:016097/0826 EFFECTIVE DATE : 20050418
US7163382 BA	20061227	LSGT	PAT1	Patented Case	
US7163382 BA	20100716	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US7163382 BA	20140716	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US7163382 BA	20180903	LSFE	FEPP	FEE PAYMENT PROCEDURE	TEXT : MAINTENANCE FEE REMINDER MAILED (ORIGINAL EVENT CODE: REM.); ENTITY STATUS OF PATENT OWNER: LARGE ENTITY
US7163382 BA	20190218	LSLE	-LAPS	LAPSE FOR FAILURE TO PAY MAINTENANCE FEES	TEXT : PATENT EXPIRED FOR FAILURE TO PAY MAINTENANCE FEES (ORIGINAL EVENT CODE: EXP.); ENTITY STATUS OF PATENT OWNER: LARGE ENTITY
US7163382 BA	20190218	LSLE	-PEX1	Patent Expired Due to NonPayment of Maintenance Fees Under 37 CFR 1.362	
US7163382 BA	20190218	LSLE	-STCH	INFORMATION ON STATUS: PATENT DISCONTINUATION	TEXT : PATENT EXPIRED DUE TO NONPAYMENT OF MAINTENANCE FEES UNDER 37 CFR 1.362
US7163382 BA	20190312	LSLE	-FP	EXPIRED DUE TO	EFFECTIVE DATE : 20190116

				FAILURE TO PAY MAINTENANCE FEE	
US7163382 BA	20240502	PEXP		Calculated Patent Term Expiry (PTA 345 days)	
US7413414 BB	20080819	LSGT	+	granted / extensions (spc, cpc, pte)	
US7413414 BB	20080730	LSGT	PAT1	Patented Case	
US7413414 BB	20120221	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US7413414 BB	20160217	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US7413414 BB	20250807	PEXP		Calculated Patent Term Expiry (PTA 468 days)	
US7458784 BB	20081202	LSGT	+	granted / extensions (spc, cpc, pte)	
US7458784 BB	20050616	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : BLACK & DECKER INC., DELAWARE OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:VOS, STEPHEN J.; HATHCOCK, LANCE; REEL/FRAME:016351/0471 EFFECTIVE DATE : 20050504
US7458784 BB	20081112	LSGT	PAT1	Patented Case	
US7458784 BB	20120604	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US7458784 BB	20160519	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US7458784 BB	20250506	PEXP		Calculated Patent Term Expiry (a terminal disclaimer has been filed)	
US7832991 BB	20101116	LSGT	+	granted / extensions (spc, cpc, pte)	
US7832991 BB	20070828	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : BLACK & DECKER INC., DELAWARE OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:WOOD, MARK; BURKHOLDER, ROBERT; CRANDALL, BARBOUR; AND OTHERS; REEL/FRAME:019761/0937; SIGNING DATES FROM 20070417 TO 20070824
US7832991 BB	20070828	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : BLACK & DECKER INC., DELAWARE OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:WOOD, MARK; BURKHOLDER, ROBERT; CRANDALL, BARBOUR; AND OTHERS; SIGNING DATES FROM 20070417 TO 20070824; REEL/FRAME:019761/0937
US7832991 BB	20101027	LSGT	PAT1	Patented Case	
US7832991 BB	20140516	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US7832991 BB	20180503	LSFE	+MAFP	MAINTENANCE FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US7832991 BB	20280427	PEXP		Calculated Patent Term Expiry (PTA 471 days and a terminal disclaimer has been filed)	
US7909584 BB	20110322	LSGT	+	granted / extensions (spc, cpc, pte)	
US7909584 BB	20070206	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : BLACK & DECKER INC., DELAWARE OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST;

					ASSIGNORS:ETTER, MARK A.; SMITH, TIMOTHY C.; WELSH, ROBERT P.; AND OTHERS; REEL/FRAME:018896/0953; SIGNING DATES FROM 20061220 TO 20070202
US7909584 BB	20070206	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : BLACK & DECKER INC., DELAWARE OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:ETTER, MARK A.; SMITH, TIMOTHY C.; WELSH, ROBERT P.; AND OTHERS; SIGNING DATES FROM 20061220 TO 20070202; REEL/FRAME:018896/0953
US7909584 BB	20110302	LSGT	PAT1	Patented Case	
US7909584 BB	20140922	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US7909584 BB	20180906	LSFE	+MAFP	MAINTENANCE FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US7909584 BB	20300109	PEXP		Calculated Patent Term Expiry (PTA 1195 days)	
US8814535 BB	20140826	LSGT	+	granted / extensions (spc, cpc, pte)	
US8814535 BB	20140806	LSGT	PAT1	Patented Case	
US8814535 BB	20180215	LSFE	+MAFP	MAINTENANCE FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US8814535 BB	20320328	PEXP		Calculated Patent Term Expiry (PTA 506 days)	
USD491197 S1	20040608	LSGT	+	granted / extensions (spc, cpc, pte)	
USD491197 S1	20040520	LSGT	PAT1	Patented Case	
USD491197 S1	20180608	PEXP		Calculated Patent Term Expiry	
WO05117567 A2	20051215	LSPB	+	published / reissued	
WO05117567 A2	20061129	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 2569149 COUNTRY OF REF DOCUMENT : CA
WO05117567 A2	20061202	LSNE	NENP	NON-ENTRY INTO THE NATIONAL PHASE IN:	REF COUNTRY CODE : DE
WO05117567 A2	20061202	LSWD	-WWW	WIPO INFORMATION: WITHDRAWN IN NATIONAL OFFICE	TEXT : DE
WO05117567 A3	20070131	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 200580026002.7 COUNTRY OF REF DOCUMENT : CN
WO05117567 A3	20071114	LSNE	-122	EP: PCT APPLICATION NON-ENTRY IN EUROPEAN PHASE	REF DOCUMENT NUMBER : 05762312 COUNTRY OF REF DOCUMENT : EP KIND CODE OF REF DOCUMENT : A2 DESIGNATED STATE(S) :

Title: Automotive hydrocarbon and water vapor injector system and universal hose connector means for same

Abstract: A simplified methanol or other hydrocarbon water-vapor injection system and kit for installing it with a minimum of part and effort are provided. A universal hose connector which precludes the necessity for cutting existing hoses on the automobile engine or any hose to which it is desired to connect another is also provided. This connector is constructed to pierce one or both walls of the hose into which connection is desired and place a metering orifice within that hose to thereby inject vapors or the like therein at predetermined rates and reduce vacuum pressure in side of the hose and reservoir of the injector system.

Classifications:

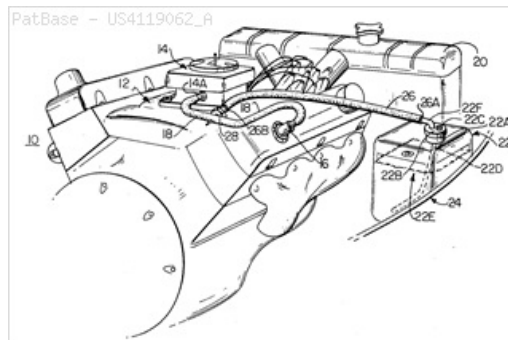
International (IPC 8-9): F02M25/00 F02M25/022 (Advanced/Invention);
F02M25/00 (Core/Invention)

International (IPC 1-7): F02D19/00

CPC: F02M25/00

European: F02M25/00

US: 123/25R 123/572 261/18.2



Family:

Publication number	Publication date	Application number	Application date
BE885074 A8	19801231	BE19800201976	19800904
BE885074 Q	19801231	BE19800201976	19800904
US4119062 A	19781010	US19760667503	19760317

Priority:

US19760667503 19760317 BE19800201976 19800904 BE19800885074 19800904

Probable Assignee: HELLEMANS ALEX

Assignee(s): (std): HELLEMANS ALEX ; OLSON WILLIAM J ; TREVASKIS WILLIAM T

Inventor(s): (std): OLSON WILLIAM J ; TREVASKIS W ; TREVASKIS WILLIAM T

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
BE885074 A8	19801231	LSPB	+	published / reissued	
BE885074 Q	19801231	LSPB	+	published / reissued	
US4119062 A	19781010	LSGT	+	granted / extensions (spc, cpc, pte)	
US4119062 A	19781010	LSGT	PAT1	Patented Case	

Title: SELF-CONTAINED BREATHING SYSTEM

Abstract: A breathing apparatus is operable in self-contained and filtered modes of operation. In the self-contained mode of operation, a breathable gas is delivered to a user from a self-contained source of breathing gas. In a second, filtered mode of operation, a suction source draws ambient air through a filter removing contaminants and delivers filtered ambient air to the user. A method of delivering air to a subject is also provided.

Classifications:

International (IPC 8-9): A61M15/00 A61M16/00 A61M16/10 A62B1/00 A62B18/00 A62B18/02 A62B18/10 A62B19/00 A62B23/02 A62B7/00 A62B7/02 A62B7/04 A62B7/10 A62B7/12 A62B9/00 A62B9/02 A62B9/04 B01D19/00 B01D46/00 B01D59/26 B01D59/50

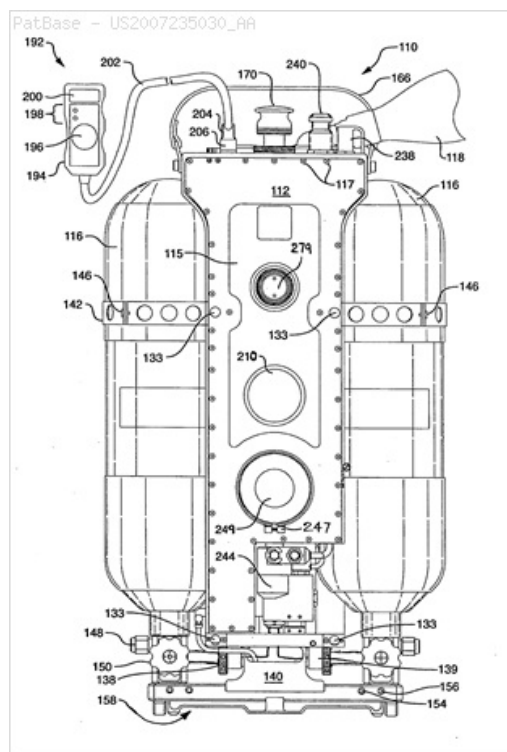
F16K31/02 (Advanced/Invention);

A62B19/00 A62B23/00 A62B7/10 (Core/Invention)

CPC: A62B9/04 A62B18/006 A62B18/10 A62B7/12 A62B7/02 A62B9/006 A62B18/02 A62B7/10 A61M16/105

European: A62B18/00D A62B18/10 A62B7/10 A62B9/04

US: 128/200.24 128/201.25 128/201.28 128/202.22 128/202.26 128/204.18 128/204.21 128/204.23 128/204.26 128/204.29 128/205.12 128/205.120P 128/205.13 128/205.130S 128/205.21 128/205.22 128/205.23 128/205.27 128/205.28 128/205.29 55/467 55/471 55/472 55/473 55/484 95/273 95/90 95/90.01 95/91 96/108 96/121 96/133 96/142



Family:

Publication number	Publication date	Application number	Application date
US2007235030 AA	20071011	US20040924281	20040823
US2010224193 AA	20100909	US20100688676	20100115
US2012138059 AA	20120607	US20120371744	20120213
US2015128937 AA	20150514	US20150600719	20150120
US7647927 BB	20100119	US20040924281	20040823
US8113198 BB	20120214	US20100688676	20100115
US8950401 BB	20150210	US20120371744	20120213
US10130831 BB	20181120	US20150600719	20150120

Priority:

US20030497206P 20030822 US20030497215P 20030823 US20040924281 20040823
US20100688676 20100115 US20120371744 20120213 US20150600719 20150120

Probable Assignee: PATRIOT LIFE SUPPORT INC

Assignee(s): (std): DESROSIERS DANIEL A ; HANSEN MARK A ; LEMIRE GARY M ; PATRIOT LIFE SUPPORT INC ; TEETZEL JAMES W ; WILCOX IND CORP

Assignee(s): WILCOX IND ; PEOPLE S UNITED BANK NATIONAL ASSOCIATION ; WILCOX INDUSTRIES CORP

Inventor(s): (std): LEMIRE GARY M ; TEETZEL JAMES W ; HANSEN MARK A ; DESROSIERS DANIEL A

Inventor(s): LEMIRE GARY ; TEETZEL JAMES ; HANSEN MARK ; DESROSIERS DANIEL

Agent(s): SCOTT C RAND ESQ MCLANE GRAF RAULERSON AND MIDDLETON PA; MCLANE GRAF RAULERSON AND MIDDLETON PA; SCOTT C; MCLANE GRAF RAULERSON AND MIDDLETON PROFESSIONAL ASSOCIATION; MCLANE MIDDLETON PROFESSIONAL ASSOCIATION

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
US10130831 BB	20181120	LSGT	+	granted / extensions (spc, cpc, pte)	
US10130831 BB	20150121	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : WILCOX INDUSTRIES CORP., NEW HAMPSHIRE OLDPARTY : ASSIGNMENT OF ASSIGNORS

					INTEREST; ASSIGNORS:TEETZEL, JAMES W.; LEMIRE, GARY M.; DESROSIERS, DANIEL A.; AND OTHERS; SIGNING DATES FROM 20041011 TO 20041012; REEL/FRAME:034776/0960	
US10130831 BB	20181031	LSGT	PAT1	Patented Case		
US10130831 BB	20370323	PEXP		Calculated Patent Term Expiry (PTA 793 days and a terminal disclaimer has been filed)		
US2007235030 AA	20071011	LSPB	+	published / reissued		
US2007235030 AA	20091230	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE	
US2010224193 AA	20100909	LSPB	+	published / reissued		
US2010224193 AA	20120125	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE	
US2012138059 AA	20120607	LSPB	+	published / reissued		
US2012138059 AA	20150121	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE	
US2015128937 AA	20150514	LSPB	+	published / reissued		
US2015128937 AA	20170920	LSES	NFA1	Non Final Action Mailed		
US2015128937 AA	20171023	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : PATRIOT LIFE SUPPORT, INC., NEW HAMPSHIRE OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:WILCOX INDUSTRIES CORP.; REEL/FRAME:043927/0466 EFFECTIVE DATE : 20171017	
US2015128937 AA	20171212	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : PEOPLE'S UNITED BANK, NATIONAL ASSOCIATION, NEW HA OLDPARTY : SECURITY INTEREST; ASSIGNOR:PATRIOT LIFE SUPPORT, INC.; REEL/FRAME:044368/0695 EFFECTIVE DATE : 20171212	
US2015128937 AA	20180330	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : PEOPLE'S UNITED BANK, NATIONAL ASSOCIATION, NEW HA OLDPARTY : SECURITY INTEREST; ASSIGNOR:PATRIOT LIFE SUPPORT INC.; REEL/FRAME:045395/0939 EFFECTIVE DATE : 20180116	
US2015128937 AA	20181031	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE	
US7647927 BB	20100119	LSGT	+	granted / extensions (spc, cpc, pte)		
US7647927 BB	20041208	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : WILCOX INDUSTRIES CORP., NEW HAMPSHIRE OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:TEETZEL, JAMES W.; LEMIRE, GARY M.; DESROSIERS, DANIEL A.; AND OTHERS; REEL/FRAME:015437/0483; SIGNING DATES FROM 20041011 TO 20041012	
US7647927 BB	20091230	LSGT	PAT1	Patented Case		
US7647927 BB	20130710	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4	
US7647927 BB	20170316	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8	
US7647927 BB	20171023	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER	

					OWNER : PATRIOT LIFE SUPPORT, INC., NEW HAMPSHIRE OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:WILCOX INDUSTRIES CORP.; REEL/FRAME:043927/0466 EFFECTIVE DATE : 20171017
US7647927 BB	20171212	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : PEOPLE'S UNITED BANK, NATIONAL ASSOCIATION, NEW HA OLDPARTY : SECURITY INTEREST; ASSIGNOR:PATRIOT LIFE SUPPORT, INC.; REEL/FRAME:044368/0695 EFFECTIVE DATE : 20171212
US7647927 BB	20180330	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : PEOPLE'S UNITED BANK, NATIONAL ASSOCIATION, NEW HA OLDPARTY : SECURITY INTEREST; ASSIGNOR:PATRIOT LIFE SUPPORT INC.; REEL/FRAME:045395/0939 EFFECTIVE DATE : 20180116
US7647927 BB	20261120	PEXP		Calculated Patent Term Expiry (PTA 819 days)	
US8113198 BB	20120214	LSGT	+	granted / extensions (spc, cpc, pte)	
US8113198 BB	20120125	LSGT	PAT1	Patented Case	
US8113198 BB	20150702	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US8113198 BB	20171023	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : PATRIOT LIFE SUPPORT, INC., NEW HAMPSHIRE OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:WILCOX INDUSTRIES CORP.; REEL/FRAME:043927/0466 EFFECTIVE DATE : 20171017
US8113198 BB	20171212	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : PEOPLE'S UNITED BANK, NATIONAL ASSOCIATION, NEW HA OLDPARTY : SECURITY INTEREST; ASSIGNOR:PATRIOT LIFE SUPPORT, INC.; REEL/FRAME:044368/0695 EFFECTIVE DATE : 20171212
US8113198 BB	20180330	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : PEOPLE'S UNITED BANK, NATIONAL ASSOCIATION, NEW HA OLDPARTY : SECURITY INTEREST; ASSIGNOR:PATRIOT LIFE SUPPORT INC.; REEL/FRAME:045395/0939 EFFECTIVE DATE : 20180116
US8113198 BB	20190515	LSFE	+MAFP	MAINTENANCE FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US8113198 BB	20300115	PEXP		Calculated Patent Term Expiry (a terminal disclaimer has been filed)	
US8950401 BB	20150210	LSGT	+	granted / extensions (spc, cpc, pte)	
US8950401 BB	20150121	LSGT	PAT1	Patented Case	
US8950401 BB	20171023	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : PATRIOT LIFE SUPPORT, INC., NEW HAMPSHIRE OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:WILCOX INDUSTRIES CORP.; REEL/FRAME:043927/0466 EFFECTIVE DATE : 20171017
US8950401 BB	20171212	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : PEOPLE'S UNITED BANK, NATIONAL ASSOCIATION, NEW HA OLDPARTY : SECURITY INTEREST;

					ASSIGNOR:PATRIOT LIFE SUPPORT, INC.; REEL/FRAME:044368/0695 EFFECTIVE DATE : 20171212
US8950401 BB	20180222	LSFE	+MAFP	MAINTENANCE FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US8950401 BB	20180330	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : PEOPLE'S UNITED BANK, NATIONAL ASSOCIATION, NEW HA OLDPARTY : SECURITY INTEREST; ASSIGNOR:PATRIOT LIFE SUPPORT INC.; REEL/FRAME:045395/0939 EFFECTIVE DATE : 20180116
US8950401 BB	20320501	PEXP		Calculated Patent Term Expiry (PTA 78 days)	

Title: AIR COMPRESSOR PARTICULARLY ACTUATED BY VEHICLE EXHAUST GAS

Abstract: 1. An **accessory** for use with internal combustion motor vehicles providing compressed air of vacuum by means of a pressure compressor actuated by the engine exhaust, gases, the compressor consisting of at least two low pressure and high pressure chambers, separated by a flexible sealing, said low pressure chamber having one inlet and one outlet for the exhaust gases, said **high pressure** chamber having at least one air outlet and air inlet, both being controlled by non return valves, and a plunger assembly situated between both chambers and provided with a valve arrangement to control an opening which serves for passing of the exhaust gases from the compressor, thereby said plunger assembly combined with said flexible sealing.

Classifications:

International (IPC 8-9): F04B45/04 (Advanced/Invention);

B60C23/10 F02B37/00 (Advanced/Non-invention);

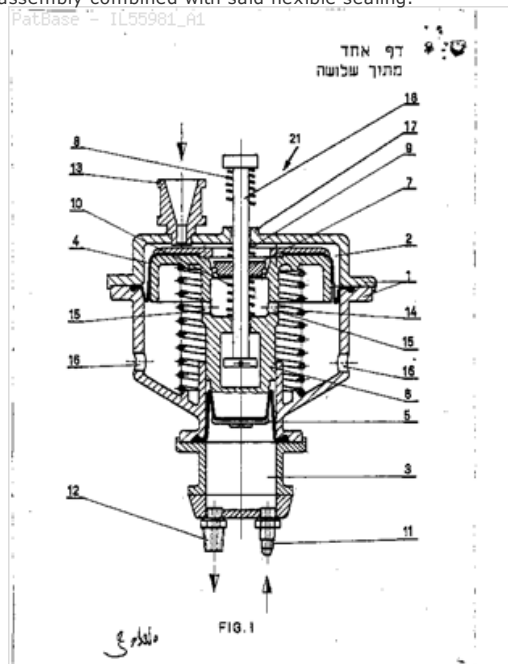
F04B45/00 (Core/Invention);

B60C23/00 F02B37/00 (Core/Non-invention);

F04B (Subclass/Invention)

International (IPC 1-7): B60C23/10 F02B37/00 F04B45/04

CPC: Y02T10/144



Family:

Publication number	Publication date	Application number	Application date
IL55981 A0	19790131	IL19780055981	19781117
IL55981 A1	19811231	IL19780055981	19781117

Priority:

IL19780055981 19781117

Probable Assignee: RES AND DEV AUTHORITY BEN GURION

Assignee(s): (std): RES AND DEV AUTHORITY BEN GURION ; SANDLER BEN ZION ; UNIV BEN GURION

Assignee(s): RESEARCH AND DEVELOPMENT AUTHORITY BEN GURION UNIV OF NEGEV ; RESEARCH AND DEVELOPMENT AUTHORITY BEN GURION UNIVERSITY

Legal status (INPADOC)

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Patent Date recorded Event group Code Event Details

IL55981 A1	19811231	LSPB	+	published / reissued
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Title: Portable firefighting apparatus with integral control valve-handle

Abstract: A combination carrying handle and control valve for firefighting apparatus suspends a portable reservoir. A handle is formed by a tubular wall having an inlet end and an outlet end and forming a flow passage between the ends; and a coupling is fastened to the inlet end and another coupling is fastened to the outlet end for connecting the handle to a source of liquid under pressure and to an accessory, respectively. A manually operated flow control valve is mounted in the handle for controlling the flow of liquid. The handle is part of a tank that may contain a liquid additive, and an eductor is connected between the flow passage and the tank interior for drawing the additive from the tank.

Classifications:

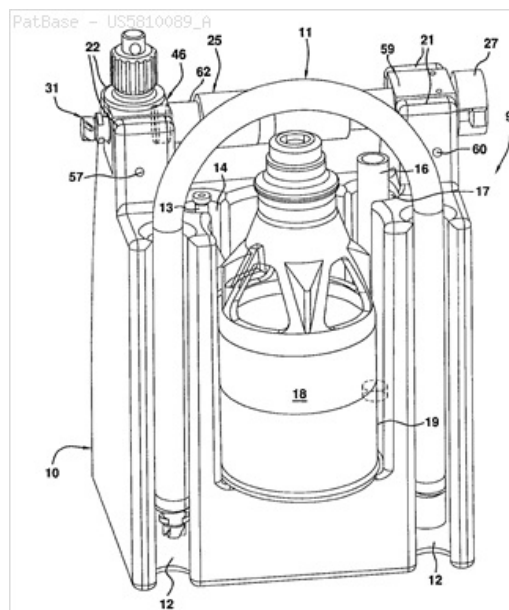
International (IPC 8-9): A62C5/02 A62C8/00 (Advanced/Invention);
A62C5/00 A62C8/00 (Core/Invention)

International (IPC 1-7): A62C5/02 A62C5/2 A62C8/0 A62C8/00

CPC: A62C5/02 A62C8/00

European: A62C5/02 A62C8/00

US: 169/15 251/344



Family:

Publication number	Publication date	Application number	Application date
AU199722152 A1	19971112	AU19970022152	19970320
AU720723 B2	20000608	AU19970022152	19970320
CA2253013 AA	19981019	CA19972253013	19970320
DE69717458 D1	20030109	DE19976017458	19970320
DE69717458 T2	20031002	DE19976017458T	19970320
EP0918558 A1	19990602	EP19970915135	19970320
EP0918558 B1	20021127	EP19970915135	19970320
ES2183156 T3	20030316	ES19970915135T	19970320
US5810089 A	19980922	US19960634809	19960419
WO9739802 A1	19971030	WO1997US04245	19970320

Priority:

US19960634809 19960419 WO1997US04245 19970320

Probable Assignee: TASK FORCE TIPS INC

Assignee(s): (std): TASK FORCE TIPS INC

Assignee(s): TASK FORCE TIPS INC AN INDIANA CORP ; HARRIS NA ; MACK ROSS J

Inventor(s): (std): MACK ROSS JULIAN ; MACK ROSS J

Inventor(s): ROSS JULIAN MACK

Agent(s): GRIFFITH HACK; RIDOUT AND MAYBEE LLP

Designated states: AL AM AT AU AZ BB BE BF BG BJ BR BY CA CF CG CH CI CM CN CZ DE DK EE ES FI FR GA GB GE GH GR HU IE IL IS IT JP KE KG KP KR KZ LK LR LS LT LU LV MC MD MG MK MN MW MX NL NO NZ PL PT RO RU SD SE SG SI SK SZ TJ TM TR TT UA UG UZ VN

Legal status (INPADOC)

[View legal status timeline](#)

Patent	Date recorded	Event group	Code	Event	Details
AU199722152 A1	19971112	LSPB	+	published / reissued	
AU720723 B2	20000608	LSGT	+	granted / extensions (spc, cpc, pte)	
AU720723 B2	20001005	LSGT	+FGA	LETTERS PATENT SEALED OR GRANTED (STANDARD PATENT)	
AU720723 B2	20021031	LSLE	-MK14	PATENT CEASED SECTION 143(A) (ANNUAL FEES NOT	

PAID) OR EXPIRED					
AU720723 B2	20170320	PEXP		Calculated Patent Term Expiry	
CA2253013 AA	19981019	LSPB	+	published / reissued	
CA2253013 AA	19990222	LSES	+EEER	EXAMINATION REQUEST	
CA2253013 AA	20030320	LSLE	-FZDE	DEAD	
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DE69717458 T2	20031002	LSGT	+	granted / extensions (spc, cpc, pte)	
DE69717458 T2	20170320	PEXP		Calculated Patent Term Expiry	
EP0918558 A1	19990602	LSPB	+	published / reissued	
EP0918558 A1	19990602	LSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 19990119
EP0918558 A1	20000906	LSES	+17Q	FIRST EXAMINATION REPORT DESPATCHED	EFFECTIVE DATE : 20000724
EP0918558 B1	20021127	LSGT	+	granted / extensions (spc, cpc, pte)	
EP0918558 B1	20021127	LSGT	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : GB REF LEGAL EVENT CODE : FG4D
EP0918558 B1	20030316	LSGT	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : ES REF LEGAL EVENT CODE : FG2A REF DOCUMENT NUMBER : 2183156 COUNTRY OF REF DOCUMENT : ES KIND CODE OF REF DOCUMENT : T3 DESIGNATED STATE(S) :
EP0918558 B1	20030319	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : GB PAYMENT DATE : 20030319 YEAR OF FEE PAYMENT : 7
EP0918558 B1	20030327	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DE PAYMENT DATE : 20030327 YEAR OF FEE PAYMENT : 7
EP0918558 B1	20030328	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : ES PAYMENT DATE : 20030328 YEAR OF FEE PAYMENT : 7
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EP0918558 B1	20040320	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : GB NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20040320
EP0918558 B1	20040322	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : ES NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20040322
EP0918558 B1	20041001	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DE NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20041001
EP0918558 B1	20041110	LSLE	-GBPC	GB: EUROPEAN PATENT CEASED THROUGH NON-PAYMENT OF RENEWAL FEE	REF COUNTRY CODE : EP EFFECTIVE DATE : 20040320
EP0918558 B1	20050616	LSLE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : ES REF LEGAL EVENT CODE : FD2A EFFECTIVE DATE : 20040322

EP0918558 B1	20100531	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : FR PAYMENT DATE : 20100324 YEAR OF FEE PAYMENT : 14
EP0918558 B1	20111223	LSLE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : FR REF LEGAL EVENT CODE : ST EFFECTIVE DATE : 20111130
EP0918558 B1	20120131	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : FR NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20110331
EP0918558 B1	20170320	PEXP		Calculated Patent Term Expiry	
ES2183156 T3	20030316	LSGT	+	granted / extensions (spc, cpc, pte)	
ES2183156 T3	20170320	PEXP		Calculated Patent Term Expiry	
US5810089 A	19980922	LSGT	+	granted / extensions (spc, cpc, pte)	
US5810089 A	19960826	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : TASK FORCE TIPS, INC., AN INDIANA CORPORATION, IND OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:MACK, ROSS JULIAN; REEL/FRAME:008103/0472 EFFECTIVE DATE : 19960606
US5810089 A	19980917	LSGT	PAT1	Patented Case	
US5810089 A	19980917	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US5810089 A	20020228	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US5810089 A	20060224	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US5810089 A	20080603	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : HARRIS N.A., ILLINOIS OLDPARTY : SECURITY AGREEMENT; ASSIGNOR:TASK FORCE TIPS, INC.; REEL/FRAME:021029/0486 EFFECTIVE DATE : 20080529
US5810089 A	20100303	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 12
US5810089 A	20131018	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : TASK FORCE TIPS, INC., INDIANA OLDPARTY : RELEASE BY SECURED PARTY; ASSIGNOR:BMO HARRIS BANK N.A. (AS SUCCESSOR TO HARRIS N.A.); REEL/FRAME:031433/0174 EFFECTIVE DATE : 20131017
US5810089 A	20160419	PEXP		Calculated Patent Term Expiry	
WO9739802 A1	19971030	LSPB	+	published / reissued	
WO9739802 A1	19981019	LSNP	ENP	ENTRY INTO THE NATIONAL PHASE IN:	REF DOCUMENT NUMBER : 2253013 COUNTRY OF REF DOCUMENT : CA
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WO9739802 A1	19981019	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL	REF DOCUMENT NUMBER : PA/A/1998/008680

WO9739802 A1	19981102	LSNP	+WWE	PHASE	COUNTRY OF REF DOCUMENT : MX
				WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 1997915135 COUNTRY OF REF DOCUMENT : EP
WO9739802 A1	19990225	LSWD	REG	REFERENCE TO NATIONAL CODE	REF COUNTRY CODE : DE REF LEGAL EVENT CODE : 8642
WO9739802 A1	19990305	LSNE	NENP	NON-ENTRY INTO THE NATIONAL PHASE IN:	REF DOCUMENT NUMBER : 97538052 COUNTRY OF REF DOCUMENT : JP
WO9739802 A1	19990602	LSPB	+WWP	WIPO INFORMATION: PUBLISHED IN NATIONAL OFFICE	REF DOCUMENT NUMBER : 1997915135 COUNTRY OF REF DOCUMENT : EP
WO9739802 A1	20021127	LSGT	+WWG	WIPO INFORMATION: GRANT IN NATIONAL OFFICE	REF DOCUMENT NUMBER : 1997915135 COUNTRY OF REF DOCUMENT : EP

Title: HOPPER TRAILER OPENER

Abstract: According to one or more embodiments, a hand-held, portable opener for a hopper trailer and method of opening is described. The hopper trailer opener comprises a base tool assembly coupled with an extension shaft assembly and can be adapted for use with a variety of different trailer opening mechanisms.

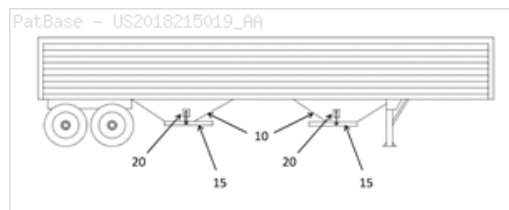
Classifications:

International (IPC 8-9): B25B21/00 B25B23/00

B60P1/56 (Advanced/Invention)

CPC: B25B21/002 B25B23/0078 B25B23/0021 B60P1/56

US: 1/1 81/54



Family:

Publication number	Publication date	Application number	Application date
US2018215019 AA	20180802	US20170646402	20170711

Priority:

US20170452019P 20170130 US20170646402 20170711

Probable Assignee: ARNCO SOLUTIONS

Assignee(s): (std): ARNCO SOLUTIONS

Inventor(s): (std): HOOKS JASON

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
US2018215019 AA	20180802	LSPB	+	published / reissued	
US2018215019 AA	20170711	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : ARNCO SOLUTIONS, ILLINOIS OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:HOOKS, JASON; REEL/FRAME:042973/0014 EFFECTIVE DATE : 20170622
US2018215019 AA	20190418	LSES	NFA1	Non Final Action Mailed	
US2018215019 AA	20190812	LSES	+NAM1	Notice of Allowance Mailed -- Application Received in Office of Publications	

Title: Portable bicycle tire air system

Abstract: A **high pressure** compressed air tank has an inlet and an inlet valve which is opened when a fitting of a service station air hose is pressed against the inlet. **High pressure** compressed air is then forced from the service station air hose into the tank. The inlet valve prevents compressed air from escaping from the tank. An outlet fitting connected to the tank has an outlet valve therein. The outlet fitting is pressed against the tire valve housing of a bicycle, causing the tire valve to open. **High pressure** compressed air from the tank is then forced into the bicycle tire, thereby inflating it. The tank is attached to a frame member of the bicycle by means of a quick-release bracket. An air horn operable by means of a button valve and a pressure gauge are attached to the **high pressure** air tank.

Classifications:

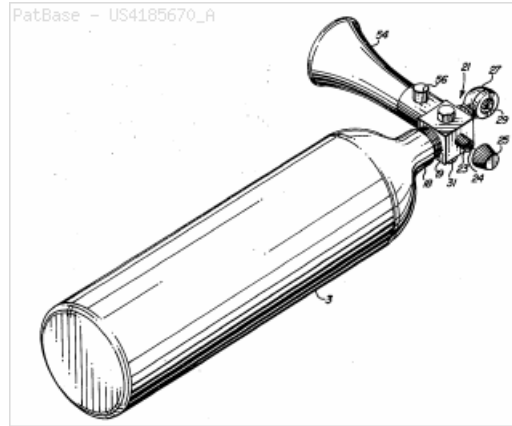
International (IPC 8-9): B60S5/04 B62J11/00 B62J3/00 B62J99/00 (Advanced/Invention)

International (IPC 1-7): B62J3/00 B65B3/04

CPC: B60S5/043 B62J3/00 B62J11/00 B62J99/00

European: B60S5/04B B62J11/00 B62J3/00 B62J99/00

US: 116/137R 141/231 141/388 141/94 152/415 280/288.4



Family:

Publication number	Publication date	Application number	Application date
US4185670 A	19800129	US19780959613	19781113

Priority:

US19780959613 19781113

Probable Assignee: SARTELL RIPLEY B JR

Assignee(s): (std): SARTELL RIPLEY B JR

Inventor(s): (std): SARTELL RIPLEY B JR

Legal status (INPADOC)

[View legal status timeline](#)

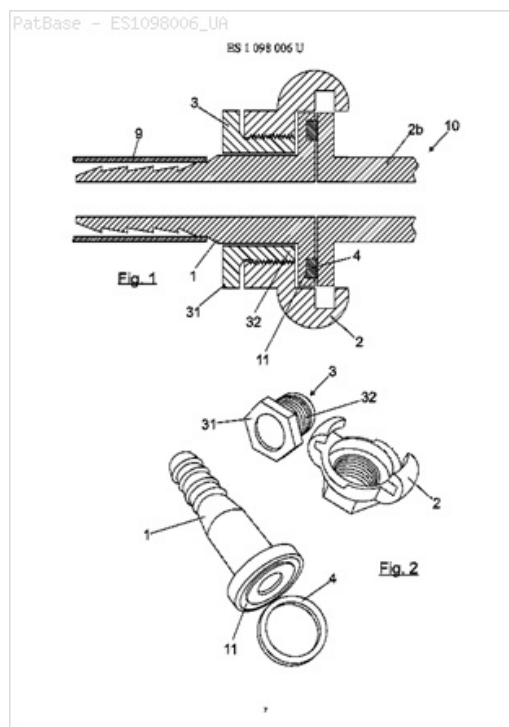
Patent	Date recorded	Event group	Code	Event	Details
US4185670 A	19800129	LSGT	+	granted / extensions (spc, cpc, pte)	

Title: UNIDAD DE ACOPLAMIENTO PARA MANGUERAS.

Abstract: Source: ES1098006U [ES] 1. Unidad de acoplamiento (10) para mangueras que comprende: - una boquilla (1) configurada para recibir un segmento de manguera (9), - una garra (2) enganchable a una garra accesoria (2b), teniendo la garra (2) un orificio interior para permitir el paso de la boquilla (1) por un solo extremo, caracterizada porque comprende además: - una tuerca (3) configurada para alojarse entre una porción de la boquilla (1) y una porción de la garra (2), siendo dicha tuerca (3) enroscable a la garra (2) de forma que cuando están enganchadas la garra (2) y la garra accesoria (2b), al aproximarse la tuerca (3) y la garra (2) se provoca la tracción de la garra accesoria (2b) hacia la garra (2). 2. Unidad de acoplamiento (10) según la reivindicación 1, caracterizada porque la boquilla (1) se ensancha exteriormente en uno de sus extremos para crear una superficie de contacto. 3. Unidad de acoplamiento (10) según la reivindicación 2, caracterizada porque la superficie de contacto de la boquilla (1) presenta un canal (11) configurado para albergar una junta (4). 4. Unidad de acoplamiento (10) según la reivindicación 3, caracterizada porque el canal (11) es coaxial al interior de la boquilla (1). 5. Unidad de acoplamiento (10) según la reivindicación 3 o 4, caracterizada porque comprende la junta (4), siendo dicha junta (4) elásticamente deformable. **Machine translation:** 1. Coupling unit (10) for hoses comprising: - a nozzle (1) configured to receive a hose segment (9), - a clamp (2) attachable to an accessory clamp (2b) having the claw (2) an inner hole to allow the passage of the nozzle (1) by one end, characterized by further comprising: - a nut (3) configured to be received between a portion of the nozzle (1) and a portion of the claw (2), being the nut (3) screw the clamp (2) so that when they are hooked claw (2) and the accessory claw (2b), approaching the nut (3) and claw (2) is caused by traction accessory claw (2b) to the clamp (2). Two. Coupling unit (10) according to claim 1, characterized in that the nozzle (1) widens outwardly at one end to create a contact surface. Three. Coupling unit (10) according to claim 2, characterized in that the contact surface of the nozzle (1) has a channel (11) configured to accommodate a gasket (4). April. Coupling unit (10) according to claim 3, wherein the channel (11) is coaxial to the interior of the nozzle (1). May. Coupling unit (10) according to claim 3 or 4, characterized in that it comprises the gasket (4), said gasket (4) elastically deformable.

Classifications:

International (IPC 8-9): F16L15/00 (Advanced/Invention)



Family:

Publication number	Publication date	Application number	Application date
ES1098006 UA	20140120	ES20130031459U	20131218
ES1098006 Y1	20140415	ES20130031459U	20131218

Priority:

ES20130031459U 20131218

Probable Assignee:

NATIVIDAD ARGIBAY JUAN MANUEL

Assignee(s): (std):

NATIVIDAD ARGIBAY JUAN MANUEL

Assignee(s):

JUAN MANUEL NATIVIDAD ARGIBAY

Inventor(s): (std):

NATIVIDAD ARGIBAY JUAN MANUEL

Inventor(s):

JUAN MANUEL NATIVIDAD ARGIBAY

Agent(s):

CARVAJAL Y ISABEL

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
ES1098006 UA	20140120	LSPB	+	published / reissued	

ES1098006 Y1	20140415	LSGT	+	granted / extensions (spc, cpc, pte)	
ES1098006 Y1	20140415	LSGT	+FG1K	UTILITY MODEL GRANTED	EFFECTIVE DATE : 20140409
ES1098006 Y1	20231218	PEXP		Calculated Patent Term Expiry	

Title: Lateral displacement assist collar for **hose coupler**

Abstract: The present invention discloses a knob-like collar device adapted to fit securely around the lateral displacement locking sleeve of a quick-release **hose coupler**. The device promotes one-hand operation of the coupler by providing purchase and grip for the thumb of the hand holding the coupler thereby facilitating the lateral displacement of the locking sleeve. The device is particularly useful when the coupler is very cold, a condition that commonly results from the high velocity passage of fluids or gasses through the coupler. The device also absorbs mechanical shock resulting from the accidental dropping of the coupler on a hard surface, thereby protecting the coupler from damage.

Classifications:

International (IPC 8-9): F16L35/00 (Advanced/Invention);

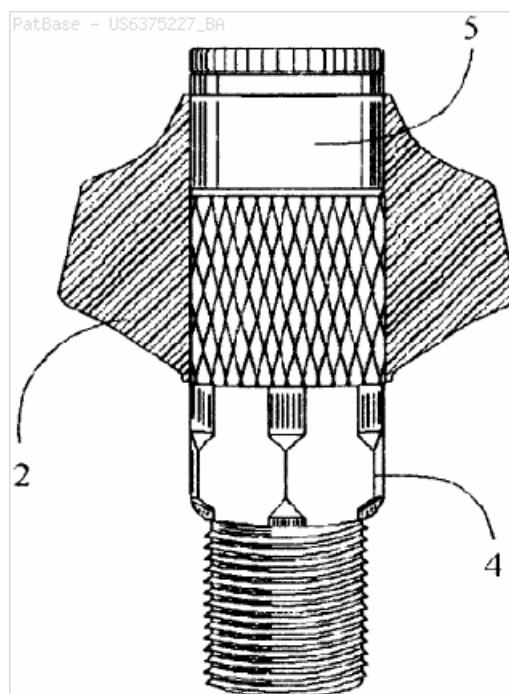
F16L35/00 (Core/Invention)

International (IPC 1-7): F16L35/00

CPC: F16L35/00

European: F16L35/00

US: 285/316 285/38



Family:

Publication number	Publication date	Application number	Application date
US6375227 BA	20020423	US19990431021	19991101

Priority:

US19990431021 19991101

Probable Assignee:

BRENNER PATRICK J

Assignee(s): (std):

BRENNER PATRICK J

Inventor(s): (std):

BRENNER PATRICK J

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
US6375227 BA	20020423	LSGT	+	granted / extensions (spc, cpc, pte)	
US6375227 BA	20050602	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US6375227 BA	20091121	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US6375227 BA	20140423	LSLE	-LAPS	LAPSE FOR FAILURE TO PAY MAINTENANCE FEES	
US6375227 BA	20140519	LSLE	-PEX1	Patent Expired Due to NonPayment of Maintenance Fees Under 37 CFR 1.362	
US6375227 BA	20140519	LSLE	-STCH	INFORMATION ON STATUS: PATENT DISCONTINUATION	TEXT : PATENT EXPIRED DUE TO NONPAYMENT OF MAINTENANCE FEES UNDER 37 CFR 1.362
US6375227 BA	20140610	LSLE	-FP	EXPIRED DUE TO FAILURE TO PAY MAINTENANCE FEE	EFFECTIVE DATE : 20140423
US6375227 BA	20191101	PEXP		Calculated Patent Term Expiry	

Title: VULCANIZATION PROCESS OF RUBBER TIRES WITH THE USE OF MICROWAVES

Abstract: Vulcanization process of rubber tires with application of premolded profile in autoclave with the use of microwaves, where rubber tires are vulcanized through microwaves heating, resulting in significant reduction of the vulcanization time when compared to the processes of conventional vulcanization, thus allowing a great productivity, due to the concentrated and homogeneous incidence of microwaves over the artifact, through its accommodation in rotating cradles inside an autoclave, also eliminating steps of chemical transformation of rubber, only needing the physical transformation to materialize the vulcanization process.

Classifications:

International (IPC 8-9): B29C35/08 B29D30/00 C08J3/24 C08J3/28

H05B6/64 (Advanced/Invention);

B29D30/54 (Advanced/Non-invention)

CPC: B29C35/0227 B29C2035/0855 B29K2021/00 B29D30/00

B29C35/0805 B29D30/56 B29D2030/546

European: B29C35/02C B29C35/08B L29C35/08B9 L29K21/00

US: 156/64 264/36.14 264/36.140S 264/490 264/490P

PatBase - US2013284340_AA

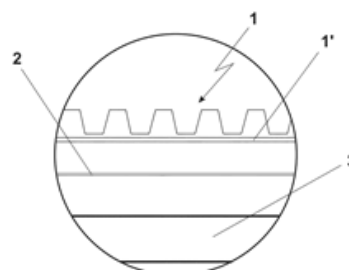


Fig. 1

Family:

Publication number	Publication date	Application number	Application date
BRPI0701702 A2	20081230	BR2007PI01702	20070514
US2010090373 AA	20100415	US20070513968	20070514
US2013284340 AA	20131031	US20130846976	20130319
WO08138081 A1	20081120	WO2007BR00267	20070804

Priority:

BR2007PI01702 20070514 US20070513968 20070514 WO2007BR00267 20070514
 WO2007BR00267 20070804 US20090513968 20091130 US20130846976 20130319

Probable Assignee: TAKAHASHI JULIA

Assignee(s): (std): TAKAHASHI JULIA

Assignee(s): JULIA TAKAHASHI

Inventor(s): (std): TAKAHASHI JULIA

Inventor(s): JULIA TAKAHASHI

Agent(s): SCULLY SCOTT MURPHY AND PRESSER PC; BEERE ASSESSORIA EMPRESARIAL LTDA

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 GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ 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

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
BRPI0701702 A2	20081230	LSPB	B03A	PUBLICATION OF AN APPLICATION: PUBLICATION OF A PATENT APPLICATION OR OF A CERTIFICATE OF ADDITION OF INVENTION	
BRPI0701702 A2	20160920	LSFE	-B08F	APPLICATION FEES: DISMISSAL - ARTICLE 86 OF INDUSTRIAL PROPERTY LAW	TEXT : REFERENTE A 9A ANUIDADE.
BRPI0701702 A2	20170110	LSLE	-B08K	LAPSE AS NO EVIDENCE OF PAYMENT OF THE ANNUAL FEE	TEXT : EM VIRTUDE DO ARQUIVAMENTO PUBLICADO NA RPI 2385 DE 20-09-2016 E CONSIDERANDO AUSENCIA DE MANIFESTACAO DENTRO DOS PRAZOS

				HAS BEEN FURNISHED TO INPI (ACC. ART. 87)	LEGAIS, INFORMO QUE CABE SER MANTIDO O ARQUIVAMENTO DO PEDIDO DE PATENTE, CONFORME O DISPOSTO NO ARTIGO 12, DA RESOLUCAO 113/2013.
US2010090373 AA	20100415	LSPB	+	published / reissued	
US2010090373 AA	20130326	LSWD	-ABD3	Abandoned -- Failure to Respond to an Office Action	
US2013284340 AA	20131031	LSPB	+	published / reissued	
US2013284340 AA	20140530	LSWD	-ABD3	Abandoned -- Failure to Respond to an Office Action	
WO08138081 A1	20081120	LSPB	+	published / reissued	
WO08138081 A1	20091117	LSNE	NENP	NON-ENTRY INTO THE NATIONAL PHASE IN:	REF COUNTRY CODE : DE
WO08138081 A1	20091130	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 12513968 COUNTRY OF REF DOCUMENT : US
WO08138081 A1	20100602	LSNE	-122	EP: PCT APPLICATION NON-ENTRY IN EUROPEAN PHASE	REF DOCUMENT NUMBER : 07815708 COUNTRY OF REF DOCUMENT : EP KIND CODE OF REF DOCUMENT : A1 DESIGNATED STATE(S) :

Title: PFLANZENIESSGERAET MIT WASSERZUFUHR UEBER EINEN GARTENSCHLAUCH Plants Casting DEVICE WITH WATER SUPPLY VIA A GARDEN HOSE (Machine translation)

Abstract: Source: DE29914954U1 [DE] (Claim 1) 1) mit einer wahlweise ansetzbaren Zusatzvorrichtung ausgeruestet wird die einen hohen Leitungswasserdruck in einen niedrigen Giesswasserdruck umformt. Die Zusatzvorrichtung besteht aus dem Wasserdruck-Entspannungsbehälter (31), aus dem ueberlaufrohr (32), aus den gesteckten Giessrohren (33/34), der Austrittsdüse (35), sowie der ueberwurfmutter (30). Die wechselweise Befestigung des Zusatzgerätes am Pistolenkopf des Brausewasser-Handgiessgerätes erfolgt bevorzugt mit einer ueberwurfmutter (30) die dem Entspannungsbehälter (31) uebergestreift und auf das groessere Gewinde des Pistolenkopfes eines erweiterten Brausewasser-Handgerätes aufgeschraubt wird. Ein mit der Zusatzvorrichtung verbundener Henkel (29) dient als Griff bei Langzeiteinsatz. Alle genannten Teile bestehen bevorzugt aus Kunststoff.

Machine translation: (Claim 1) 1) with an optional attachable auxiliary device equipped is a **high pressure** water flow in a low Giesswasserdruck umformt. Die additional device consists of a water pressure Entspannungsbehälter (31), from the overflow tube (32), inserted from the spout (33/34), the exit nozzle (35), and the cap nut (30). The alternating attachment of optional equipment to the gun head of the shower water Handgiessgerätes is preferred with a cap nut (30) to the Entspannungsbehälter (31) over grazed and the bigger thread the gun head an expanded water shower handsets screwed maintained. A associated with the **accessory** device handle (29) serves as a handle for Langzeiteinsatz. Alle mentioned parts are preferably made of plastic.

Classifications:

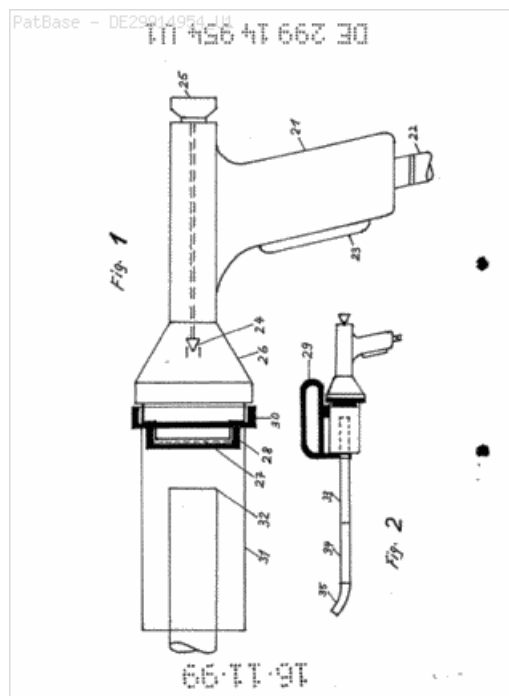
International (IPC 8-9): B05B1/12 B05C1/16 (Advanced/Invention);

B05B1/00 B05C1/04 (Core/Invention)

International (IPC 1-7): A01G25/14

CPC: B05B1/12 B05C1/16

European: B05B1/12 B05C1/16



Family:

Publication number	Publication date	Application number	Application date
DE29914954 U1	20000203	DE19992014954U	19990826

Priority:

DE19992014954U 19990826

Probable Assignee:

GLOWICKI GERHARD

Assignee(s): (std):

GLOWICKI GERHARD

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
DE29914954 U1	20000203	LSGT	+	granted / extensions (spc, cpc, pte)	
DE29914954 U1	19990826	LSLI	R086	NON-BINDING DECLARATION OF LICENSING INTEREST	
DE29914954 U1	20000203	LSGT	R207	UTILITY MODEL SPECIFICATION	EFFECTIVE DATE : 20000203
DE29914954 U1	20030612	LSLE	-R156	LAPSE OF IP RIGHT AFTER 3 YEARS	EFFECTIVE DATE : 20030301
DE29914954 U1	20090826	PEXP		Calculated Patent Term Expiry	

Title: INTEGRATED SYSTEM FOR THE BALLISTIC AND NONBALLISTIC INFIXION AND RETRIEVAL OF IMPLANTS

Abstract: Provided are methods and apparatus for the use of magnetic traction to maintain the patency of a tubular anatomical structure, whether a vessel, duct, the trachea, bronchus, bile duct, ureter, vas deferens, fallopian tube, or portions of the digestive tract, as to constitute means for extraluminal stenting. An extraluminal stent consists of a perimedial or medial intravascular and an extravascular component. The intravascular component consists of ferromagnetic spherules implanted aeroballistically or stays implanted by means of a special hand tool, while the extravascular component consists of a pliant jacket or mantle that has magnets mounted about its outer surface. A catheter adapted for use as the barrel of a gas-operated implant insertion gun is so devised that it can be used independently to perform an angioplasty and thereafter have its free or extracorporeal end inserted into the airgun to initiate implantation of the intravascular component without the need for withdrawal and reinsertion through the introducer sheath. When the implants must be spaced too closely together to be controlled by hand, a positional control system is used to effect discharge automatically. Spherules that consist entirely of medication or that have a radiation emitting seed as the core can be implanted with the same apparatus. A glossary of terms follows the specification.

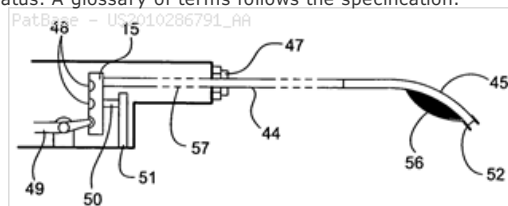
Classifications:

International (IPC 8-9): A61B17/28 A61B17/50 A61B18/04 A61F13/00 A61F2/04 A61F2/82 A61F2/95 A61M25/00 A61M31/00 A61M36/12 A61M37/00 (Advanced/Invention)

CPC: A61F2/95 A61M37/00 A61B17/12022 A61B17/00491 A61B17/0057 A61B17/12118 A61B17/12181 A61B17/3468 A61B18/04 A61B18/18 A61B2017/00411 A61B2017/00544 A61B2017/0065 A61B2017/00876 A61B2017/1205 A61B2017/22001 A61B2017/00809 A61F2210/009 A61F2/82 A61F2/013 A61F2002/9528 A61B18/02 A61B18/1492 A61B2018/00023 A61B2018/00345 A61B2018/00517 A61B2018/00541 A61B2018/00595 A61B2018/00982 A61B2218/002 A61N2005/1011 A61B18/245 A61B2018/00005 A61B2018/00577 A61B2018/1861 A61N7/00

European: A61B17/12P A61B17/12P5B1S A61B17/12P7Z K61B17/00N4 K61B17/00S14 K61B17/12P2 K61B17/22A K61B17/34J K61B18/04 K61B18/18

US: 600/8 600/8S 602/43 602/43S 604/500 604/523 604/523S 604/524 604/524S 604/93.01 604/93.010S 606/205 606/205S 606/211 606/211S 606/27 606/27S 623/1.11 623/23.7 623/23.700P



Family:

Publication number	Publication date	Application number	Application date
US2010286791 AA	20101111	US20070986021	20071119
US2014163664 AA	20140612	US20130694835	20130109

Priority:

US20060860392P 20061121 US20070986021 20071119 US20130694835 20130109

Probable Assignee:

GOLDSMITH DAVID S

Assignee(s): (std):

GOLDSMITH DAVID S

Inventor(s): (std):

GOLDSMITH DAVID S

Agent(s):

DAVID S GOLDSMITH

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
US2010286791 AA	20101111	LSPB	+	published / reissued	
US2010286791 AA	20130309	LSWD	-ABD3	Abandoned -- Failure to Respond to an Office Action	
US2014163664 AA	20140612	LSPB	+	published / reissued	
US2014163664 AA	20151201	LSES	NFA1	Non Final Action Mailed	
US2014163664 AA	20170221	LSES	NFA1	Non Final Action Mailed	
US2014163664 AA	20180430	LSWD	-ABD3	Abandoned -- Failure to Respond to an Office Action	

Title: METHODS FOR REINFORCING EXISTING LATTICE FRAME STRUCTURES HAVING HOLLOW STEEL PRIMARY ELEMENTS, PARTICULARLY STEEL TOWERS WITH TUBULAR LEGS

Abstract: A series of alternative related methods for reinforcing an existing lattice frame steel structure, having substantially vertical Hollow Primary Elements, offering the option to choose between improving only compressive load-bearing capacity of said hollow primary elements, or improving both their compressive and the tensile load-bearing capacities. The compressive load-bearing capacity of said primary elements is increased by filling their internal cavities with non-shrink cement-based grout, in a slow and low-pressure procedure, hence ensuring the applicability of the present invention to practically any existing steel structure with hollow primary elements, regardless of their capacity to withstand internal pressure. The tensile load-bearing capacity of all, or any part of said primary elements is increased by the insertion, prior to the grout-filling, of a longitudinal, continuous and substantially concentric tensile reinforcement member into each respective primary element, and anchoring it properly to its bottom. An axial pretension of predetermined magnitude is applied to the tensile reinforcement member prior to the grout-filling.

Classifications:

International (IPC 8-9): E04B1/66 E04G21/02 E04G23/02 E04H12/08

E04H12/14 E04H12/18 E04H12/22 (Advanced/Invention);

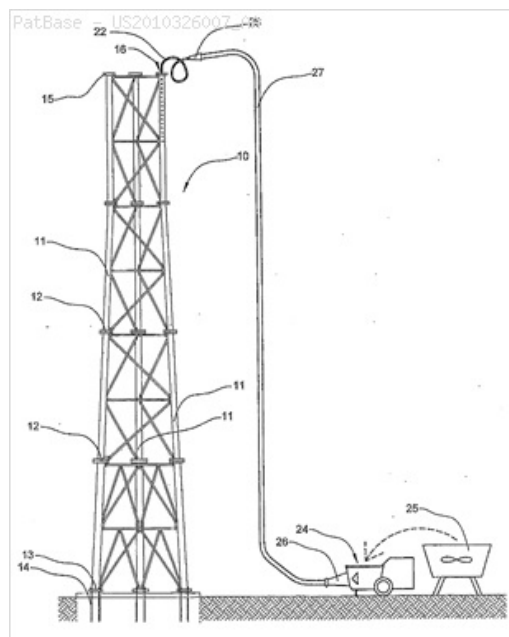
E04H12/00 E04H12/22 (Core/Invention);

E04H (Subclass/Invention)

CPC: E04H12/10 E04G21/12 E04G23/0218

European: E04G21/12 E04G23/02C E04H12/10

US: 52/741.4 52/741.400P 52/742.14 52/742.140S



Family:

Publication number	Publication date	Application number	Application date
EP2294270 A1	20110316	EP20090708210	20090204
HU0800070 A0	20080328	HU20080000070	20080204
HU0800070 AB	20090928	HU20080000070	20080204
IL207364 A0	20101230	IL20100207364	20100802
IL207364 A1	20140331	IL20090207364	20090204
US2010326007 AA	20101230	US20090865904	20090204
WO09098528 A1	20090813	WO2009HU00013	20090204

Priority:

HU20080000070 20080204 WO2009HU00013 20090204

Probable Assignee: MEIR SILBER

Assignee(s): (std): MEIR SILBER ; SILBER MEIR

Inventor(s): (std): SILBER MEIR

Agent(s): VARGA TAMAS PETER; ZOHAR ELIEZRI INTELLECTUAL PROPERTY; MILLEN WHITE ZELANO AND BRANIGAN PC; VTPATENT KFT

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 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 ST SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

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Patent	Date recorded	Event group	Code	Event	Details
EP2294270 A1	20110316	LSPB	+	published / reissued	
EP2294270 A1	20110316	LSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 20101220
EP2294270 A1	20140212	LSDW	-18D	APPLICATION DEEMED TO BE WITHDRAWN	EFFECTIVE DATE : 20130903

HU0800070 AB	20090928	LSPB	+	published / reissued	
HU0800070 AB	20100628	LSLE	-FD9A	LAPSE OF PROVISIONAL PROTECTION DUE TO NON-PAYMENT OF FEES	
IL207364 A1	20140331	LSPB	+	published / reissued	
IL207364 A1	20140731	LSGT	+FF	PATENT GRANTED	
IL207364 A1	20141030	LSFE	+KB	PATENT RENEWED	
IL207364 A1	20150226	LSFE	+KB	PATENT RENEWED	
IL207364 A1	20190131	LSFE	+KB	PATENT RENEWED	
US2010326007 AA	20101230	LSPB	+	published / reissued	
US2010326007 AA	20130520	LSWD	-ABD3	Abandoned -- Failure to Respond to an Office Action	
WO09098528 A1	20090813	LSPB	+	published / reissued	
WO09098528 A1	20100802	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 207364 COUNTRY OF REF DOCUMENT : IL
WO09098528 A1	20100803	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 12865904 COUNTRY OF REF DOCUMENT : US
WO09098528 A1	20100805	LSNE	NENP	NON-ENTRY INTO THE NATIONAL PHASE IN:	REF COUNTRY CODE : DE
WO09098528 A1	20100902	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 2009708210 COUNTRY OF REF DOCUMENT : EP

Title: MANGUERA PLASTICA CON ACOPLA MIXTO ROSCADO Plastic hose with mixed coupling (Machine translation)

Abstract: Source: CO16110179U [ES] [Source: Claim 1] 1. Una manguera para el suministro agua desde una llave registro universal a griferías, caracterizada porque comprende una manguera totalmente plástica (1) 5 que presenta en uno de sus extremos un acople mixto roscado (2), que se introduce a presión en la manguera (1) y se asegura mediante un elemento de sujeción o ferrul (3), grafado a dicha manguera. **Machine translation:** [Source: Claim 1] 1. A hose for supplying water from a universal registry key to taps, characterized by comprising a hose (1) having 5 plastic completely at one of its ends a coupling threaded joint (2), which is pressed into the hose (1) and secured by a fastening element (3), creasing ferrul or to said hose.

Classifications:

International (IPC 8-9): F16L11/00 F16L11/11 (Advanced/Invention)

Family:

Publication number	Publication date	Application number	Application date
CO16110179 U1	20160831	CO20160110179U	20160429

Priority:

CO20160110179U 20160429

Probable Assignee: COMPANIA COLOMBIANA DE CERAMICA SAS

Assignee(s): COMPANIA COLOMBIANA DE CERAMICA SAS

Inventor(s): CAMILO ANDRES SALAS BOTERO ; JUAN FERNANDO MEDINA RAMIREZ ; NATALIA PENA VARGAS

Agent(s): MAURICIO PATINO BONNET

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
CO16110179 U1	20160831	LSPB	+	published / reissued	

Title: PORTABLE WATER-PUMPING SYSTEM

Abstract: A portable water-pumping system comprises a water-tight case with a hinged lid. A deep recess in the lid allows a photovoltaic array to be nested inside in a protected position. A gel-cell battery operates a **high-pressure** water-pump and both are carried inside the case. A trigger-operated water nozzle and a pressure switch allow automatic functioning of the water pump. A non-collapsible water-suction hose includes a strainer to prevent clogging of the pump. A cigarette-lighter power cord allows near-continuous and heavy use when a source of 12VDC power is available from a car, boat, plane, or other vehicle.

Classifications:

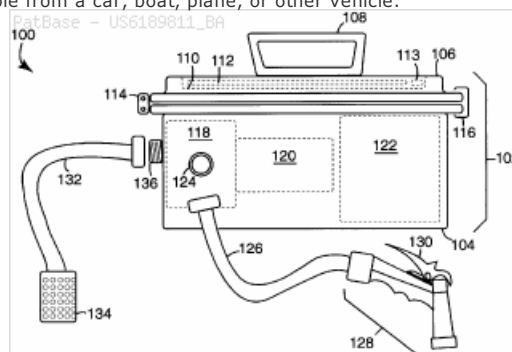
International (IPC 8-9): F04B17/00 F04D13/06 (Advanced/Invention);
F04B17/00 F04D13/06 (Core/Invention)

International (IPC 1-7): A01G25/14

CPC: Y10S239/03 F04B17/006 F04D13/068 Y02A20/18

European: F04B17/00S F04D13/06

US: 239/375 239/525 239/DIG.3



Family:

Publication number	Publication date	Application number	Application date
US6189811 BA	20010220	US19990440296	19991115

Priority:

US19990440296 19991115

Probable Assignee:

RUDY DAVID OWEN

Assignee(s): (std):

RUDY DAVID OWEN

Inventor(s): (std):

RUDY DAVID OWEN

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
US6189811 BA	20010220	LSGT	+	granted / extensions (spc, cpc, pte)	
US6189811 BA	20050222	LSLE	-LAPS	LAPSE FOR FAILURE TO PAY MAINTENANCE FEES	
US6189811 BA	20050323	LSLE	-PEX1	Patent Expired Due to NonPayment of Maintenance Fees Under 37 CFR 1.362	
US6189811 BA	20050323	LSLE	-STCH	INFORMATION ON STATUS: PATENT DISCONTINUATION	TEXT : PATENT EXPIRED DUE TO NONPAYMENT OF MAINTENANCE FEES UNDER 37 CFR 1.362
US6189811 BA	20050412	LSLE	-FP	EXPIRED DUE TO FAILURE TO PAY MAINTENANCE FEE	EFFECTIVE DATE : 20050220
US6189811 BA	20191115	PEXP		Calculated Patent Term Expiry	

Title: MOBILE FIELD ELECTRICAL SUPPLY, FRESHWATER AND SALTWATER PURIFICATION SYSTEM, POWDER WASH, WASH STATION, AND WATER COLLECTION AND RECLAMATION APPARATUS

Abstract: A mobile field electrical supply, freshwater and saltwater purification system, power wash, wash station, and water collection and reclamation apparatus provides water collection, handling, treatment, and storage capacity. The apparatus comprises a raw water filtration system, a sodium ion exchange system, a storage system with a plurality of tanks, a reverse osmosis system, and heating and distributions systems. The apparatus also comprises a mobile electrical power system. Optionally, the apparatus includes a desalination system, a disinfection system, a rainwater collection system, a fluid containment and recovery system, and an auxiliary fluid distribution system. The disinfection system may include a chlorination, ultraviolet light, or ozone disinfection system, and may further include a distillation system that may be conventionally powered or solar powered. Water may be distributed through a plurality of auxiliary devices, including pressure pumps, heaters, fluid lines, power wash equipment, shower heads, and associated air powered tools.

Classifications:

International (IPC 8-9): B01D17/02 B01D17/12 B01D61/04 B01D61/08 B01D61/10 C02F1/44 C02F9/00 (Advanced/Invention); C02F1/04 C02F1/14 C02F1/32 C02F1/40 C02F1/42 C02F1/44 C02F1/76 C02F1/78 (Advanced/Non-invention);

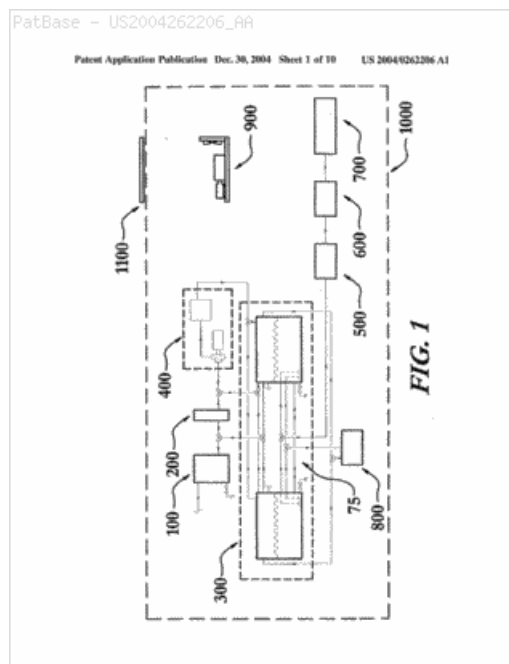
B01D17/00 B01D17/02 B01D61/02 C02F1/44 C02F9/00 (Core/Invention); C02F1/04 C02F1/14 C02F1/32 C02F1/40 C02F1/42 C02F1/44 C02F1/76 C02F1/78 (Core/Non-invention)

International (IPC 1-7): B01D17/12

CPC: B01D61/025 B01D17/0202 B01D61/04 B01D61/08 B01D61/10 B01D2311/04 C02F1/001 C02F1/048 C02F1/32 C02F1/40 C02F1/42 C02F1/441 C02F1/76 C02F1/78 C02F9/00 C02F2201/008 C02F2201/009 C02F2303/16 C02F2303/24 Y02W10/37 B01D5/006 B01D17/045 C02F1/14 Y02A20/128 Y02A20/129 Y02A20/131 Y02A20/142 Y02A20/212 C02F1/04 B01D17/0214 B01D17/0217 B01D17/10

European: B01D17/02B B01D61/04 B01D61/08 B01D61/10 C02F1/44B C02F9/00 L01D311/04 M02F1/00D M02F1/04Z M02F1/14 M02F1/32 M02F1/40 M02F1/42 M02F1/44B M02F1/76 M02F1/78 M02F201/001 M02F201/00M M02F201/00P M02F303/16 M02F303/24 M02F9/00

US: 210/143 210/17 210/170 210/170.09 210/170.090S 210/170.1 210/170.100S 210/182 210/182S 210/241 210/241S 210/259 210/259S



Family:

Publication number	Publication date	Application number	Application date
US2004262206 AA	20041230	US20030607775	20030627
US2005016906 AA	20050127	US20030713944	20031114

Priority:

US20030607775 20030627 US20030713944 20031114

Probable Assignee: NU ELEMENT INC

Assignee(s): GETTMAN DOUG ; NU ELEMENT INC

Inventor(s): (std): GETTMAN DOUG

Agent(s): GALLAGHER AND DAWSEY CO LPA

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
US2004262206 AA	20041230	LSPB	+	published / reissued	
US2004262206 AA	20051208	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : NU ELEMENT, INC., WASHINGTON OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:GETTMAN, DOUG; REEL/FRAME:017107/0733 EFFECTIVE DATE : 20051121
US2004262206 AA	20060622	LSWD	-ABD3	Abandoned -- Failure to Respond to an Office Action	
US2005016906 AA	20050127	LSPB	+	published / reissued	

US2005016906 AA	20051208	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : NU ELEMENT, INC., WASHINGTON OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:GETTMAN, DOUG; REEL/FRAME:017107/0733 EFFECTIVE DATE : 20051121
US2005016906 AA	20060814	LSWD	-ABD3	Abandoned -- Failure to Respond to an Office Action	

Title: Fluid exchange system

Abstract: Fluid changing in an automatic transmission by opening the cooler line and draining used fluid, at the flow of normal circulation, out of the cooler line from the transmission into a drain receptacle for receiving used fluid and simultaneously supplying fresh fluid, from a pressurized supply receptacle, into the cooler return line to the transmission at a similar controlled rate that is equal or great than the rate of flow of the used fluid into the drain receptacle.

Classifications:

International (IPC 8-9): B01D17/12 F01M11/04 F16H57/04 G01N33/543 G01N33/569 (Advanced/Invention);

F01M11/02 F01M11/04 F16H57/00 (Advanced/Non-invention);

B01D17/00 F01M11/04 F16H57/04 G01N33/543

G01N33/569 (Core/Invention);

F01M11/02 F16H57/00 (Core/Non-invention)

International (IPC 1-7): B01D17/12 B65B1/04 F01M11/04 F16C3/14 F16N33/00

CPC: F01M11/045 F15B21/005 F15B21/042 F01M11/0458 Y10T137/2605

F01M11/04 F16H57/0408 G01N33/5432 G01N33/56983

European: F01M11/04 F01M11/04D F15B21/00D F15B21/04C

F16H57/04F G01N33/543D2 G01N33/569K R01M11/02C R01M11/04C

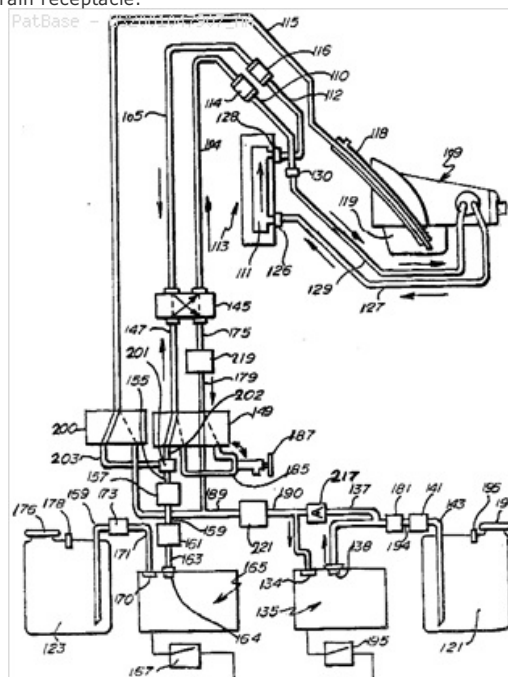
R16H57/04F

US: 137/115.13 141/114 141/59 141/59P 141/65 141/65S 141/67 141/94

141/95 141/98 141/98S 184/1.5 184/1.500P 184/1.500S 184/105.1

184/106 184/108 184/55.1 184/57 184/6.4 210/138 210/141 210/141S

210/167.08 210/167.080S 210/168 220/571 356/70 73/53.07



Family:

Publication number	Publication date	Application number	Application date
AU199923340 A1	19990809	AU19990023340	19990122
CA2319365 AA	20000724	CA19992319365	19990122
CA2319365 C	20080422	CA19992319365	19990122
EP1049858 A1	20001108	EP19990903280	19990122
US2001047907 AA	20011206	US20010757960	20010110
US2002020460 AA	20020221	US20010846982	20010501
US2002050423 AA	20020502	US20010026137	20011218
US2003015463 AA	20030123	US20020241734	20020910
US2005133304 AA	20050623	US20040925695	20040824
US5318080 A	19940607	US19910781322	19911023
US5472064 A	19951205	US19940209061	19940309
US6082416 A	20000704	US19990235560	19990122
US6105635 A	20000822	US19990235561	19990122
US6164346 A	20001226	US19990235562	19990122
US6223790 BA	20010501	US19990301851	19990429
US6267160 BA	20010731	US19990404485	19990923
US6330934 BA	20011218	US19960772836	19961224
US6378657 BB	20020430	US20010757960	20010110
US6446682 BA	20020910	US20010846982	20010501
US6779633 BB	20040824	US20010026137	20011218
US6962175 BB	20051108	US20020241734	20020910
USRE36650 E	20000411	US19970985605	19971205
WO9937895 A1	19990729	WO1999US01334	19990122

Priority:

US19910781322	19911023	US19940209061	19940309	US19950469673	19950606
US19960772836	19961224	US19970985605	19971205	US19980071884P	19980123
US19980072400P	19980123	US19980072403P	19980123	US19980072289P	19980123
US19980083557P	19980429	US19980098853P	19980902	US19980100895P	19980923
US19990235560	19990122	US19990235561	19990122	WO1999US01334	19990122
US19990235562	19990122	US19990301851	19990429	US19990404485	19990923
US20010757960	20010110	US20010846982	20010501	US20010026137	20011218
US20020241734	20020910	US20040925695	20040824		

Probable Assignee: JOHNSON DONALD EDWARD

Assignee(s): (std): JAMES P VIKEN ; VIKEN JAMES P

Assignee(s): JOHNSON DONALD EDWARD ; LANG JON A

Inventor(s): (std): VIKEN JAMES P

Inventor(s): JAMES P VIKEN ; VIKEN JAMES

Agent(s): SIM AND MCBURNEY; JOHN F KLOS ESQ FULBRIGHT AND JAWORSKI LLP; FULBRIGHT AND JAWORSKI

Designated states: AL AM AT AU AZ BA BB BE BF BG BJ BR BY CA CF CG CH CI CM CN CU CY CZ DE DK EE ES FI FR GA GB GE GH GM GN GR GW HR HU ID IE IL IS IT JP KE KG KP KR KZ LC LK LR LS LT LU LV MC MD MG MK ML MN MR MW MX NE NL NO NZ PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TR TT UA UG US UZ VN YU ZW

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
AU199923340 A1	19990809	LSPB	+	published / reissued	
AU199923340 A1	20001005	LSLE	-MK6	APPLICATION LAPSED SECTION 142(2)(F)/REG. 8.3(3) - PCT APPLIC. NOT ENTERING NATIONAL PHASE	
CA2319365 AA	20000724	LSPB	+	published / reissued	
CA2319365 AA	20040106	LSSES	+EEER	EXAMINATION REQUEST	
CA2319365 C	20080422	LSGT	+	granted / extensions (spc, cpc, pte)	
CA2319365 C	20100122	LSLE	-MKLA	LAPSED	
CA2319365 C	20190122	PEXP		Calculated Patent Term Expiry	
EP1049858 A1	20001108	LSPB	+	published / reissued	
EP1049858 A1	20001108	LSSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 20000822
EP1049858 A1	20031112	LSSES	+17Q	FIRST EXAMINATION REPORT DESPATCHED	EFFECTIVE DATE : 20030926
EP1049858 A1	20051109	LSDW	-18D	APPLICATION DEEMED TO BE WITHDRAWN	EFFECTIVE DATE : 20050510
US2001047907 AA	20011206	LSPB	+	published / reissued	
US2002020460 AA	20020221	LSPB	+	published / reissued	
US2002050423 AA	20020502	LSPB	+	published / reissued	
US2003015463 AA	20030123	LSPB	+	published / reissued	
US2005133304 AA	20050623	LSPB	+	published / reissued	
US2005133304 AA	20091107	LSWD	-ABD3	Abandoned -- Failure to Respond to an Office Action	
US5318080 A	19940607	LSGT	+	granted / extensions (spc, cpc, pte)	
US5318080 A	19940526	LSGT	PAT1	Patented Case	
US5318080 A	19940526	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US5318080 A	19970925	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US5318080 A	19971117	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : JOHNSON, DONALD EDWARD, MINNESOTA OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:VIKEN, JAMES P.; REEL/FRA:008792/0502 EFFECTIVE DATE : 19950407
US5318080 A	19971117	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : LANG, JON A., MINNESOTA OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:VIKEN, JAMES P.; REEL/FRA:008811/0021 EFFECTIVE DATE : 19941129
US5318080 A	19971118	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : JOHNSON, DONALD EDWARD, MINNESOTA OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:VIKEN, JAMES P.; REEL/FRA:008811/0525 EFFECTIVE DATE : 19950106

US5318080 A	20020122	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US5318080 A	20050629	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 12
US5318080 A	20111023	PEXP		Calculated Patent Term Expiry	
US5472064 A	19951205	LSGT	+	granted / extensions (spc, cpc, pte)	
US5472064 A	19951122	LSGT	PAT1	Patented Case	
US5472064 A	19951122	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
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US5472064 A	19971117	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : LANG, JON A., MINNESOTA OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:VIKEN, JAMES P.; REEL/FRAME:008811/0021 EFFECTIVE DATE : 19941129
US5472064 A	19971118	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : JOHNSON, DONALD EDWARD, MINNESOTA OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:VIKEN, JAMES P.; REEL/FRAME:008811/0525 EFFECTIVE DATE : 19950106
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US5472064 A	20140309	PEXP		Calculated Patent Term Expiry	
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US6082416 A	20000615	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
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US6082416 A	20071221	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
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US6105635 A	20031203	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US6105635 A	20080125	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US6105635 A	20120822	LSLE	-LAPS	LAPSE FOR FAILURE TO PAY MAINTENANCE FEES	
US6105635 A	20120917	LSLE	-PEX1	Patent Expired Due to NonPayment of Maintenance Fees Under 37 CFR 1.362	
US6105635 A	20120917	LSLE	-STCH	INFORMATION ON STATUS: PATENT DISCONTINUATION	TEXT : PATENT EXPIRED DUE TO NONPAYMENT OF MAINTENANCE FEES UNDER 37 CFR 1.362
US6105635 A	20121009	LSLE	-FP	EXPIRED DUE TO FAILURE TO PAY MAINTENANCE FEE	EFFECTIVE DATE : 20120822
US6105635 A	20190122	PEXP		Calculated Patent Term Expiry	

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US6164346 A	20040622	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US6164346 A	20080613	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US6164346 A	20121226	LSLE	-LAPS	LAPSE FOR FAILURE TO PAY MAINTENANCE FEES	
US6164346 A	20130121	LSLE	-PEX1	Patent Expired Due to NonPayment of Maintenance Fees Under 37 CFR 1.362	
US6164346 A	20130121	LSLE	-STCH	INFORMATION ON STATUS: PATENT DISCONTINUATION	TEXT : PATENT EXPIRED DUE TO NONPAYMENT OF MAINTENANCE FEES UNDER 37 CFR 1.362
US6164346 A	20130212	LSLE	-FP	EXPIRED DUE TO FAILURE TO PAY MAINTENANCE FEE	EFFECTIVE DATE : 20121226
US6164346 A	20190122	PEXP		Calculated Patent Term Expiry	
US6223790 BA	20010501	LSGT	+	granted / extensions (spc, cpc, pte)	
US6223790 BA	20010412	LSGT	PAT1	Patented Case	
US6223790 BA	20010412	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
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US6223790 BA	20081023	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US6223790 BA	20121025	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 12
US6223790 BA	20190429	PEXP		Calculated Patent Term Expiry	
US6267160 BA	20010731	LSGT	+	granted / extensions (spc, cpc, pte)	
US6267160 BA	20010716	LSGT	PAT1	Patented Case	
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US6267160 BA	20130103	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 12
US6267160 BA	20190923	PEXP		Calculated Patent Term Expiry	
US6330934 BA	20011218	LSGT	+	granted / extensions (spc, cpc, pte)	
US6330934 BA	20030204	LSRE	CC	CERTIFICATE OF CORRECTION	
US6330934 BA	20050428	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US6330934 BA	20090520	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US6330934 BA	20131218	LSLE	-LAPS	LAPSE FOR FAILURE TO PAY MAINTENANCE FEES	
US6330934 BA	20140113	LSLE	-PEX1	Patent Expired Due to NonPayment of Maintenance Fees Under 37 CFR 1.362	
US6330934 BA	20140113	LSLE	-STCH	INFORMATION ON STATUS: PATENT DISCONTINUATION	TEXT : PATENT EXPIRED DUE TO NONPAYMENT OF MAINTENANCE FEES UNDER 37 CFR 1.362
US6330934 BA	20140204	LSLE	-FP	EXPIRED DUE TO FAILURE TO PAY MAINTENANCE FEE	EFFECTIVE DATE : 20131218
US6330934 BA	20161224	PEXP		Calculated Patent Term Expiry (a terminal disclaimer has been filed)	

US6378657 BB	20020430	LSGT	+	granted / extensions (spc, cpc, pte)	
US6378657 BB	20051025	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US6378657 BB	20091021	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
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US6378657 BB	20140526	LSLE	-PEX1	Patent Expired Due to NonPayment of Maintenance Fees Under 37 CFR 1.362	
US6378657 BB	20140526	LSLE	-STCH	INFORMATION ON STATUS: PATENT DISCONTINUATION	TEXT : PATENT EXPIRED DUE TO NONPAYMENT OF MAINTENANCE FEES UNDER 37 CFR 1.362
US6378657 BB	20140617	LSLE	-FP	EXPIRED DUE TO FAILURE TO PAY MAINTENANCE FEE	EFFECTIVE DATE : 20140430
US6378657 BB	20210110	PEXP		Calculated Patent Term Expiry (a terminal disclaimer has been filed)	
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US6446682 BA	20100225	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US6446682 BA	20140910	LSLE	-LAPS	LAPSE FOR FAILURE TO PAY MAINTENANCE FEES	
US6446682 BA	20141006	LSLE	-PEX1	Patent Expired Due to NonPayment of Maintenance Fees Under 37 CFR 1.362	
US6446682 BA	20141006	LSLE	-STCH	INFORMATION ON STATUS: PATENT DISCONTINUATION	TEXT : PATENT EXPIRED DUE TO NONPAYMENT OF MAINTENANCE FEES UNDER 37 CFR 1.362
US6446682 BA	20141028	LSLE	-FP	EXPIRED DUE TO FAILURE TO PAY MAINTENANCE FEE	EFFECTIVE DATE : 20140910
US6446682 BA	20210501	PEXP		Calculated Patent Term Expiry	
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US6779633 BB	20041221	LSRE	CC	CERTIFICATE OF CORRECTION	
US6779633 BB	20080201	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
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US6779633 BB	20120924	LSLE	-PEX1	Patent Expired Due to NonPayment of Maintenance Fees Under 37 CFR 1.362	
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US6779633 BB	20211218	PEXP		Calculated Patent Term Expiry (a terminal disclaimer has been filed)	
US6962175 BB	20051108	LSGT	+	granted / extensions (spc, cpc, pte)	
US6962175 BB	20090501	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US6962175 BB	20131108	LSLE	-LAPS	LAPSE FOR FAILURE TO PAY MAINTENANCE FEES	
US6962175 BB	20131209	LSLE	-PEX1	Patent Expired Due to NonPayment of Maintenance Fees Under 37 CFR 1.362	

US6962175 BB	20131209	LSLE	-STCH	INFORMATION ON STATUS: PATENT DISCONTINUATION	TEXT : PATENT EXPIRED DUE TO NONPAYMENT OF MAINTENANCE FEES UNDER 37 CFR 1.362
US6962175 BB	20131231	LSLE	-FP	EXPIRED DUE TO FAILURE TO PAY MAINTENANCE FEE	EFFECTIVE DATE : 20131108
US6962175 BB	20230612	PEXP		Calculated Patent Term Expiry (PTA 275 days)	
USRE36650 E	20000331	LSGT	PAT1	Patented Case	
USRE36650 E	20030507	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
USRE36650 E	20070604	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 12
WO9937895 A1	19990729	LSPB	+	published / reissued	
WO9937895 A1	20000724	LSNP	ENP	ENTRY INTO THE NATIONAL PHASE IN:	REF DOCUMENT NUMBER : 2319365 COUNTRY OF REF DOCUMENT : CA
WO9937895 A1	20000724	LSNP	ENP	ENTRY INTO THE NATIONAL PHASE IN:	REF DOCUMENT NUMBER : 2319365 COUNTRY OF REF DOCUMENT : CA KIND CODE OF REF DOCUMENT : A DESIGNATED STATE(S) :
WO9937895 A1	20000822	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 1999903280 COUNTRY OF REF DOCUMENT : EP
WO9937895 A1	20001108	LSPB	+WWP	WIPO INFORMATION: PUBLISHED IN NATIONAL OFFICE	REF DOCUMENT NUMBER : 1999903280 COUNTRY OF REF DOCUMENT : EP
WO9937895 A1	20001123	LSWD	REG	REFERENCE TO NATIONAL CODE	REF COUNTRY CODE : DE REF LEGAL EVENT CODE : 8642
WO9937895 A1	20050510	LSWD	-WWW	WIPO INFORMATION: WITHDRAWN IN NATIONAL OFFICE	REF DOCUMENT NUMBER : 1999903280 COUNTRY OF REF DOCUMENT : EP

Title: Automotive air-conditioning servicing system and method

Abstract: Method and apparatus for servicing air-conditioning systems employing electronic processing means for initially diagnosing the air-conditioning system and, thereafter, if tests or repairs are needed, for guiding the mechanic to correction of its defective operation and for charging the system with refrigerant and oil. The apparatus, according to a preferred embodiment, includes a microprocessor operable in three modes: a "system selection" mode during which the type of system being serviced is identified; a "diagnose" mode during which the microprocessor receives signals indicative of the high and low side pressures of the air-conditioning system and develops a list of possible causes of system malfunction, and a "charging" mode during which the microprocessor automatically charges the system with the desired amount of refrigerant and oil. The apparatus further includes means controlled by the microprocessor for automatically compensating for changes in the viscosity and temperature and, hence, of the flow rate of the oil to ensure the air-conditioning system will always be correctly filled. The invention permits accurate diagnosis and repair to be carried out by relatively inexperienced personnel in a straightforward, efficient manner.

Classifications:

International (IPC 8-9): B60H1/00 G07F5/18

G07F9/02 (Advanced/Invention);

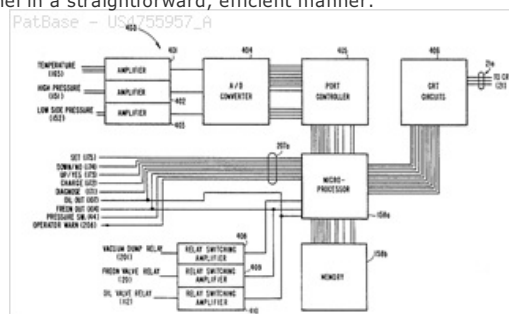
B60H1/00 G07F5/00 G07F9/02 (Core/Invention)

International (IPC 1-7): F25B45/00 G06F15/21 G07F7/02

CPC: G07F5/18 G07F9/02 G07F11/002 B60H1/00585 F25B2345/001 F25B2345/003 F25B2345/0052

European: B60H1/00S3 G07F11/00B G07F5/18 G07F9/02 R25B345/001 R25B345/003 R25B345/0052

US: 364/551 62/126 62/129 62/149 702/184 702/185



Family:

Publication number	Publication date	Application number	Application date
AU198777028 A1	19880210	AU19870077028	19870710
US4755957 A	19880705	US19860844541	19860327
WO8800741 A1	19880128	WO1987US01604	19870710

Priority:

US19860844541 19860327 US19860884541 19860711 WO1987US01604 19870710

Probable Assignee: WHITE TOOLS INC K

Assignee(s): (std): BAR VENDER INC ; WHITE TOOLS INC K

Assignee(s): WHITE IND LLC ; K WHIT TOOLS INC ; K WHIT TOOLS INC A CORP OF INDIANA ; K WHITE TOOLS INC ; WHITE IND

Inventor(s): (std): BAHR DENNIS E ; CLARK KENNETH R ; FOX MICHAEL V ; POST KENDALL E ; SHEVICK PHILIP ; HANCOCK JOHN ; WHITE DANIEL

Inventor(s): KENNETH R CLARK ; DENNIS E BAHR ; KENDALL E POST ; MICHAEL V FOX ; PHILIP SHEVICK

Designated states: AU GB

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
AU198777028 A1	19880210	LSPB	+	published / reissued	
US4755957 A	19880705	LSGT	+	granted / extensions (spc, cpc, pte)	
US4755957 A	19860327	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : K-WHIT TOOLS, INCORPORATED, 9210 CASTLEGATE DRIVE, OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST.; ASSIGNORS:WHITE, DANIEL; HANCOCK, JOHN; REEL/FRAME:004533/0645 EFFECTIVE DATE : 19860317
US4755957 A	19880505	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US4755957 A	19890103	LSRE	CC	CERTIFICATE OF CORRECTION	
US4755957 A	19911209	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US4755957 A	19950710	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US4755957 A	19960215	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER

OWNER : WHITE INDUSTRIES, LLC, INDIANA
OLDPARTY : RECORD TO CORRECT
ASSIGNOR'S NAME PREVIOUSLY RECORDED
ON REEL 7521, FRAME 963; ASSIGNOR:K-
WHIT TOOLS, INC., AN INDIANA
CORPORATION; REEL/FRAME:007795/0309
EFFECTIVE DATE : 19941129

US4755957 A	20000104	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 12
WO8800741 A1	19880128	LSPB	+	published / reissued	

Abstract: Disclosed herein is an apparatus preferably coupled to a boom on a truck, the apparatus capable of a plurality of configurations for a variety of uses. In one configuration, the apparatus can perform rapid semi-precise cutting of vegetation. In another configuration, the apparatus can perform more precise trimming of one or more areas (e.g., limbs) and optionally use a limb clamp to prevent cut limbs/vegetation from arbitrarily falling on objects below the cutting area. In yet another configuration, the apparatus can have a grapple or similar device attached to the end of the boom for use in relocating debris or for loading debris into a removal facility such as dump or garbage truck. In each configuration, the apparatus comprises one or more rotatable or pivoting couplings to allow for rotation about one or more axis and therefore allow precise manipulation from an operator in the vehicle or on the ground.

International (IPC 8-9): A01G23/081 A01G23/083 A01G23/085
A01G23/087 A01G23/091 A01G23/095 A01G3/08
B27M1/08 (Advanced/Invention)

US: 1/1 144/24.13 144/335 144/343 144/4.1



Publication number	Publication date	Application number	Application date
US2012279614 AA	20121108	US20120441377	20120406
US2012279615 AA	20121108	US20120441453	20120406
US2016192595 AA	20160707	US20160070293	20160315
US2019274258 AA	20190912	US20190422825	20190524
US9301458 BB	20160405	US20120441453	20120406
US9307704 BB	20160412	US20120441377	20120406
US10299440 BB	20190528	US20160070293	20160315
WO12151394 A2	20121108	WO2012US36309	20120503
WO12151394 A3	20130124	WO2012US36309	20120503
WO12151399 A2	20121108	WO2012US36318	20120503
WO12151399 A3	20130117	WO2012US36318	20120503

US20110482807P	20110505	US20120441377	20120406	US20120441453	20120406
US20160070293	20160315	US20190422825	20190524		

Assignee(s): (std): TERRA TECH MFG INC ; TERRELL STEVEN J ; TERRATECH MFG INC

Assignee(s): TERRELL STEVEN J MR ; TERRATECH MANUFACTURING INC ; STEVEN J TERRELL AND ASSOCIATES ;
STEVEN J TERRELL AND ASSOCIATES INC ; TERRA TECH MANUFACTURING INC

Inventor(s): (std): TERRELL STEVEN J

Agent(s): LIU LAW GROUP PLLC; NOLTE INTELLECTUAL PROPERTY LAW GROUP; LEWIS TERRIL G

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

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Patent	Date recorded	Event group	Code	Event	Details
US10299440 BB	20190528	LSGT	+	granted / extensions (spc, cpc, pte)	
US10299440 BB	20190508	LSGT	PAT1	Patented Case	
US10299440 BB	20360730	PEXP		Calculated Patent Term Expiry (PTA 137 days)	
US2012279614 AA	20121108	LSPB	+	published / reissued	
US2012279614 AA	20150319	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : TERRELL, STEVEN J., MR, TEXAS OLDPARTY : COURT ORDER; ASSIGNOR:TERRATECH MANUFACTURING, INC.; REEL/FRAME:035201/0048 EFFECTIVE DATE : 20141217

US2012279614 AA	20160323	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US2012279615 AA	20121108	LSPB	+	published / reissued	
US2012279615 AA	20150319	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : TERRELL, STEVEN J., MR, TEXAS OLDPARTY : COURT ORDER; ASSIGNOR:TERRATECH MANUFACTURING, INC.; REEL/FRAME:035201/0048 EFFECTIVE DATE : 20141217
US2012279615 AA	20160316	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US2016192595 AA	20160707	LSPB	+	published / reissued	
US2016192595 AA	20171214	LSES	NFA1	Non Final Action Mailed	
US2016192595 AA	20190107	LSES	+NAM1	Notice of Allowance Mailed -- Application Received in Office of Publications	
US2016192595 AA	20190409	LSFE	+PPV1	Publications -- Issue Fee Payment Verified	
US2016192595 AA	20190410	LSFE	+PPV1	Publications -- Issue Fee Payment Verified	
US2016192595 AA	20190508	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US2019274258 AA	20190912	LSPB	+	published / reissued	
US9301458 BB	20160405	LSGT	+	granted / extensions (spc, cpc, pte)	
US9301458 BB	20120406	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : TERRATECH MANUFACTURING, INC., TEXAS OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:TERRELL, STEVEN J.; REEL/FRAME:028006/0877 EFFECTIVE DATE : 20120404
US9301458 BB	20151201	LSES	+NAM1	Notice of Allowance Mailed -- Application Received in Office of Publications	
US9301458 BB	20160316	LSGT	PAT1	Patented Case	
US9301458 BB	20190412	LSFE	+MAFP	MAINTENANCE FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US9301458 BB	20190522	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : STEVEN J. TERRELL & ASSOCIATES, INC., TEXAS OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:TERRELL, STEVEN J., MR.; REEL/FRAME:049259/0190 EFFECTIVE DATE : 20190522
US9301458 BB	20350205	PEXP		Calculated Patent Term Expiry (PTA 1035 days)	
US9307704 BB	20160412	LSGT	+	granted / extensions (spc, cpc, pte)	
US9307704 BB	20120406	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : TERRATECH MANUFACTURING, INC., TEXAS OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:TERRELL, STEVEN J.; REEL/FRAME:028006/0602 EFFECTIVE DATE : 20120404
US9307704 BB	20151130	LSES	+NAM1	Notice of Allowance Mailed -- Application Received in Office of Publications	
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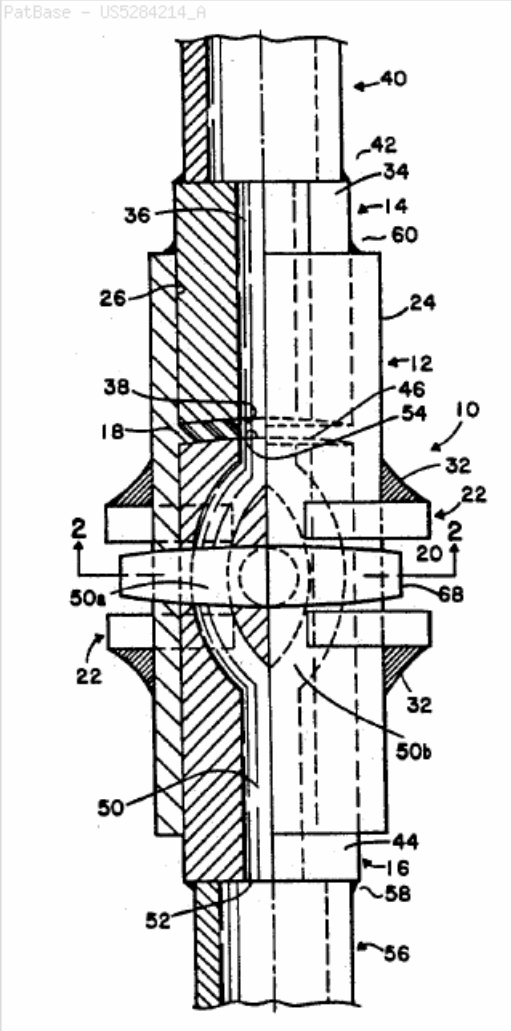
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US9307704 BB	20190412	LSFE	+MAFP	MAINTENANCE FEE PAYMENT	YEAR OF FEE PAYMENT : 4
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US9307704 BB	20350212	PEXP		Calculated Patent Term Expiry (PTA 1042 days)	
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WO12151394 A3	20131105	LSNE	NENP	NON-ENTRY INTO THE NATIONAL PHASE IN:	REF COUNTRY CODE : DE
WO12151394 A3	20140528	LSNE	-122	EP: PCT APPLICATION NON-ENTRY IN EUROPEAN PHASE	REF DOCUMENT NUMBER : 12779907 COUNTRY OF REF DOCUMENT : EP KIND CODE OF REF DOCUMENT : A2 DESIGNATED STATE(S) :
WO12151399 A2	20121108	LSPB	+	published / reissued	
WO12151399 A3	20131105	LSNE	NENP	NON-ENTRY INTO THE NATIONAL PHASE IN:	REF COUNTRY CODE : DE
WO12151399 A3	20140528	LSNE	-122	EP: PCT APPLICATION NON-ENTRY IN EUROPEAN PHASE	REF DOCUMENT NUMBER : 12780016 COUNTRY OF REF DOCUMENT : EP KIND CODE OF REF DOCUMENT : A2 DESIGNATED STATE(S) :

Title: Drill pipe coupling apparatus

Abstract: The pipe coupling in accordance with the present invention broadly includes an elongated female member having structure defining a bore spanning the length thereof, a first hollow elongated male member having an end portion non-rotatably affixed within a portion of the bore, a second elongated male member slidably engagable within the remaining portion of the bore, a lock pin slidably engagable through aligned apertures in the female and second male members, and a pliable gasket for placement between the first and second male members. The second male member also includes structure defining a passage spanning its length and presenting an inlet and an outlet wherein the passage diverges into two passages on the inlet side of the aperture and converges back into one passage on the outlet side of the aperture. Preferably, the matable ends of the first and second male members are concave and convex, respectively, which cooperate to compress the gasket to provide a fluid-tight seal between the male members when the second male member is locked into the female member.

Classifications:

International (IPC 8-9): E21B17/046 F16L25/00 (Advanced/Invention);
E21B17/02 F16L25/00 (Core/Invention)
International (IPC 1-7): E21B17/00
CPC: E21B17/046 F16L25/00
European: E21B17/046 F16L25/00
US: 175/320 285/140



Family:

Publication number	Publication date	Application number	Application date
US5284214 A	19940208	US19920950709	19920925

Priority:

US19920950709 19920925

Probable Assignee:

GUNDY SR JOSEPH F VAN

Assignee(s): (std):

GUNDY SR JOSEPH F VAN

Assignee(s):

VAN GUNDY SR JOSEPH F

Inventor(s): (std):

VAN GUNDY SR JOSEPH F

Legal status (INPADOC)

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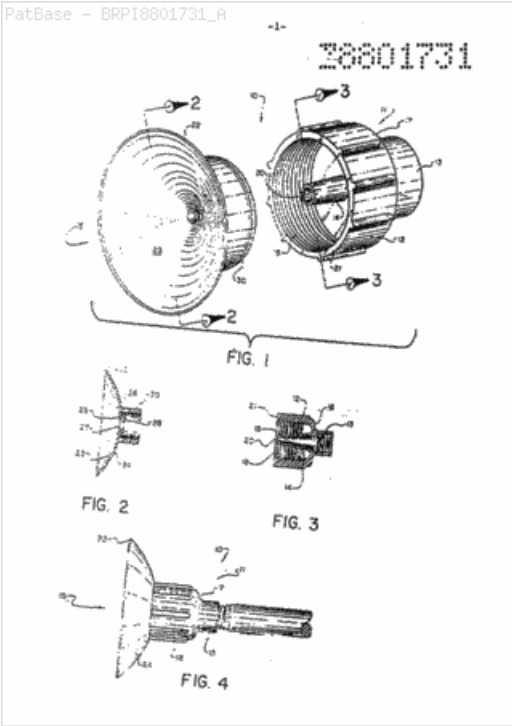
Patent	Date recorded	Event group	Code	Event	Details
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US5284214 A	19940712	LSRE	CC	CERTIFICATE OF	

CORRECTION					
US5284214 A	19970721	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US5284214 A	20020208	LSLE	-LAPS	LAPSE FOR FAILURE TO PAY MAINTENANCE FEES	
US5284214 A	20020312	LSLE	-PEX1	Patent Expired Due to NonPayment of Maintenance Fees Under 37 CFR 1.362	
US5284214 A	20020312	LSLE	-STCH	INFORMATION ON STATUS: PATENT DISCONTINUATION	TEXT : PATENT EXPIRED DUE TO NONPAYMENT OF MAINTENANCE FEES UNDER 37 CFR 1.362
US5284214 A	20020409	LSLE	-FP	EXPIRED DUE TO FAILURE TO PAY MAINTENANCE FEE	EFFECTIVE DATE : 20020208
US5284214 A	20120925	PEXP		Calculated Patent Term Expiry	

Title: LIMPADOR DE RALO POR PRESSAO DRAIN CLEANER FOR PRESSURE (Machine translation)

Abstract: Source: BRPI8801731A [PT] [Source: Claim 1] 1 - Limpador de ralo por pressao, caracterizado pelo fato de que compreende um corpo tendo um acoplamento com 5 uma salda de acoplamento internamento rosqueada numa extremidade e uma conexao de dispositivo de mangueira, internamente rosqueada, na outra extremidade; um bocal centralmente posicionado dentro do acoplamento e inteirico coa o acoplamento e 10 conexao do dispositivo de mangueira, o bocal tendo uma passagem atraves deste coa uma extremidade de entrada em comunicacao com o interior da conexao do dispositi- vo de mangueira e uma extremidade de descarga, pelo qual o fluxo proveniente de uma mangueira fixada a c and 15 nexao do dispositivo de mangueira fluira atraves ss do bocal e com a saida do acoplamento mais Isrga, do que a conexao do dispositivo de mangueira, pelo qual a sei da do acoplamento e suficientemente larga para ser rosqueada por sobre um ralo de encanamento; e 20 um acessorio de succao compreen- dendo um copo de succao tendo uma superficie traseira geralmente convexa e uma superficie dianteira concava, e # •1ss **## •••• uma luva estendendo-se a partir da superficie trasei- ra, um anel reeiliente estendendo-se em torno da luva, a luva sendo removivelmente Inserida no acoplamento e o anel sendo travado num filete de rosca interna do a- 5 coplamento, um furo atraves da luva a o copo de succao, e o bocal estendendo-se para dentro do furo. **Machine translation:** [Source: Claim 1] 1-drain cleaner for pressure, characterized by the fact that comprises a body having a coupling with 5 1 threaded outlet coupling relocation at one end and a device connection hose, internally threaded at the other end; a centrally positioned within the nozzle and coupling and coupling coa inteirico 10 radiator hose, nozzle device having a passage through this coa one end of entry into communication with the interior of the device connection-vo of hose and one end, through which the stream from a hose attached to c and an ADSL or cable connection of 15 fluira hose through the nozzle and ss the coupling more Isrga, than the device connection of hose, through which I know of coupling and wide enough to be threaded over a plumbing drain; and 20 1 auto sucking a l-g a glass of sucking having a rear surface convex and usually a front surface concave, and • 1 *** ## • • • • a glove extending from the surface four hooves-ra, reeiliente a ring extending around the glove, glove being removivelmente inserted into the coupling and the ring being caught a fillet of a-5 internal thread coplamento, a hole through the glove to the glass of sucking, and the nozzle extending inside the hole.

Classifications:
International (IPC 8-9): B08B9/02 (Advanced/Invention);
B08B9/02 (Core/Invention)
International (IPC 1-7): B08B9/02



Family:

Publication number	Publication date	Application number	Application date
BRPI8801731 A	19891107	BR1988PI01731	19880412

Priority:
BR1988PI01731 19880412

Probable Assignee: WALTER L GELLATLY
Assignee(s): (std): WALTER L GELLATLY
Inventor(s): (std): GELLATLY WALTER L
Inventor(s): WALTER L GELLATLY

Legal status (INPADOC)
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Patent	Date recorded	Event group	Code	Event	Details
BRPI8801731 A	19891107	LSPB	+	published / reissued	

Title: STEAM NOZZLE SYSTEM AND METHOD

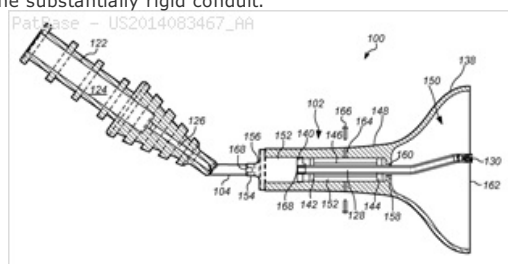
Abstract: Steam cleaning spray nozzle systems and methods of use are described herein. The spray nozzle includes a substantially rigid conduit a support member in fluid communication with a steam source. A portion of the conduit is angled. During use, sufficient eccentric force is produced by the steam to rotate the support member such that steam is ejected from the substantially rigid conduit at an oblique angle relative to the center to of the substantially rigid conduit.

Classifications:

International (IPC 8-9): A47L11/34 A47L11/40 (Advanced/Invention)

CPC: A47L11/4086 A47L11/34

US: 134/37 15/321 15/322



Family:

Publication number	Publication date	Application number	Application date
US2014083467 AA	20140327	US20130922463	20130620
US2019191953 AA	20190627	US20190251849	20190118
US10182696 BB	20190122	US20130922463	20130620

Priority:

US20120706456P 20120927 US20120731990P 20121130 US20130922463 20130620
US20190251849 20190118

Probable Assignee: ECP INC

Assignee(s): (std): DEHN DENNIS ; DEHN S INNOVATIONS LLC ; DEHNS INNOVATIONS LLC

Assignee(s): ECP INC

Inventor(s): (std): DEHN DENNIS

Agent(s): MEYERTONS HOOD KIVLIN KOWERT AND GOETZEL PC

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
US10182696 BB	20190122	LSGT	+	granted / extensions (spc, cpc, pte)	
US10182696 BB	20130917	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : DEHN'S INNOVATIONS, LLC, TEXAS OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:DEHN, DENNIS; REEL/FRAME:031222/0037 EFFECTIVE DATE : 20130809
US10182696 BB	20190101	LSGT	PAT1	Patented Case	
US10182696 BB	20360712	PEXP		Calculated Patent Term Expiry (PTA 1118 days)	
US2014083467 AA	20140327	LSPB	+	published / reissued	
US2014083467 AA	20170512	LSES	NFA1	Non Final Action Mailed	
US2014083467 AA	20180315	LSES	NFA1	Non Final Action Mailed	
US2014083467 AA	20181218	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : ECP INCORPORATED, ILLINOIS OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:DEHN'S INNOVATIONS, LLC; REEL/FRAME:047804/0279 EFFECTIVE DATE : 20181130
US2014083467 AA	20190101	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US2019191953 AA	20190627	LSPB	+	published /	

reissued					
US2019191953 AA	20190325	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : ECP INCORPORATED, ILLINOIS OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:DEHN'S INNOVATIONS, LLC; REEL/FRAME:048683/0345 EFFECTIVE DATE : 20181130

Title: SLEEP APNEA DEVICE

Abstract: A system for treating a patient suffering from obstructive sleep apnea may include a mask, a portable air flow generator configured to generate air flow at a relatively low flow rate, and a tube connecting the air flow generator and the mask such that air flow from the generator passes through an air flow generator valve on the mask. The mask may include a contact surface for forming a seal between the mask and the patient's face such that the mask surrounds the patient's nostrils, an expiration valve that opens during expiration, and an air flow generator valve that opens during inspiration. In some embodiments, the mask may further include an inspiration valve that opens during inspiration to allow air from outside the system to enter the mask.

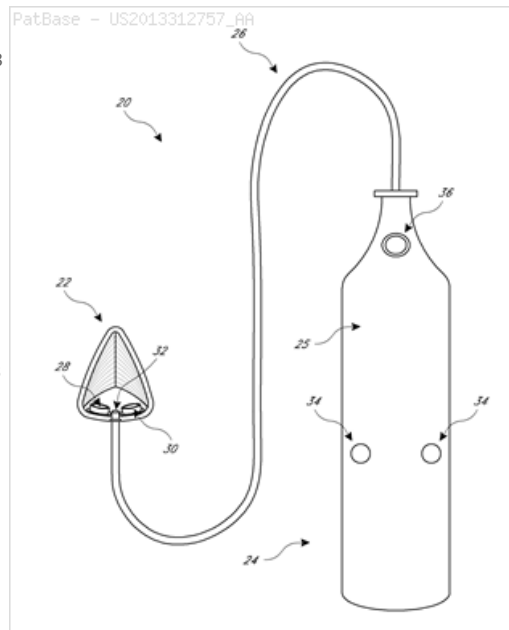
Classifications:

International (IPC 8-9): A61B5/00 A61B5/01 A61B5/024 A61B5/053 A61B5/08 A61B5/11 A61M A61M15/08 A61M16/00 A61M16/06 A61M16/08 A61M16/10 A61M16/20 A62B A62B18/00 A62B7/00 A62B9/02 F16L11/02 F16L11/04 F16L11/10 (Advanced/Invention);

A61B5/01 A61B5/024 A61B5/053 A61B5/08 A61B5/11 A61F5/56 A61M16/00 A61M16/08 A61M16/10 (Advanced/Non-invention)

CPC: A61B5/4809 A61B5/11 A61M15/002 A61M2016/0033 A61M2205/0216 A61M2205/0238 A61M2205/0266 A61M2209/086 A61M2205/128 A61M2205/50 A61M2205/3303 A61M2205/3331 A61M2230/10 A61M2230/30 A61M2230/42 A61M2230/50 A61M2230/65 A61B5/4815 A61M16/0063 A61M16/0605 A61M2230/005 A61B5/0002 A61M16/0816 A61M16/0051 A61M16/208 A61M2205/3569 A61M2210/0618 A61M16/0616 A61M16/0666 A61M16/0875 A61M16/0003 A61M16/0066 A61M2206/14 A61M2230/06 A61F5/566 A61B5/01 A61B5/02405 A61B5/02438 A61B5/0533 A61B5/1118 A61B5/4812 A61M16/024 A61B5/0205 A61B5/02055 A61B5/0402 A61B5/0531 A61B5/6803 F16L11/02 F16L11/04 F16L11/10 A61B5/0816 A61M2016/003 A61M2205/0272 A61B5/4836 A61M16/06 Y10T29/49826 A61M16/20 A61B5/4818 A61M16/0057 A61M16/0069 A61M16/0683 A61M16/0688 A61M16/0833 A61M16/0866 A61M16/107 A61M16/201 A61M16/202 A61M16/206 A61M16/209 A61M2016/0027 A61M2016/0039 A61M2016/0661 A61M2205/18 A61M2205/3375 A61M2205/3553 A61M2205/3561 A61M2205/3584 A61M2205/3592 A61M2205/42 A61M2205/505 A61M2205/52 A61M2205/8206 A61M2205/8237 A61M2205/8281 A61M2209/06 A61M2209/088 A61M2230/04 A61M2230/18 A61M2230/205 A61M2230/63 Y10T29/49412 A61M16/204 A61M16/205

US: 1/1 128/204.18 128/204.19 128/204.21 128/204.23 128/205.18 128/205.24 128/207.13 128/207.18 29/428 29/890.124



Family:

Publication number	Publication date	Application number	Application date
CN107635615 A	20180126	CN201680015623	20160323
CN109890443 A	20190614	CN201780063525	20170830
EP2996753 A2	20160323	EP20140730367	20140515
EP3270996 A1	20180124	EP20160765903	20160323
EP3270996 A4	20190102	EP20160765903	20160323
EP3506973 A1	20190710	EP20170847481	20170830
HK1243966 A1	20180727	HK20180103486	20180313
US2013312757 AA	20131128	US20130860926	20130411
US2014246024 AA	20140904	US20140278398	20140515
US2014246025 AA	20140904	US20140278587	20140515
US2016051791 AA	20160225	US20150930284	20151102
US2017157356 AA	20170608	US20160334243	20161025
US2018049638 AA	20180222	US20160557907	20160323
US2018064899 AA	20180308	US20170690195	20170829
US2018185597 AA	20180705	US20180910937	20180302
US2018326173 AA	20181115	US20180034967	20180713
US2019015620 AA	20190117	US20180133665	20180917
US2019015622 AA	20190117	US20180034980	20180713
US2019224440 AA	20190725	US20190354137	20190314
US2019232011 AA	20190801	US20190378780	20190409
US9333318 BB	20160510	US20130860926	20130411
US9492086 BB	20161115	US20150930284	20151102
US10206571 BB	20190219	US20160334243	20161025
US10272226 BB	20190430	US20140278398	20140515
US10307562 BB	20190604	US20140278587	20140515
US10315000 BB	20190611	US20180133665	20180917
WO13155349 A1	20131017	WO2013US36246	20130411
WO14186584 A2	20141120	WO2014US38215	20140515
WO14186584 A3	20150108	WO2014US38215	20140515
WO16149713 A1	20160922	WO2016US23798	20160323
WO16149713 A8	20170817	WO2016US23798	20160323
WO18045047 A1	20180308	WO2017US49404	20170830
WO18161041 A1	20180907	WO2018US20772	20180302
WO19014567 A1	20190117	WO2018US42044	20180713

Priority:

US20120613855P	20120321	US20120623855P	20120413	US20130775430P	20130308
US20130860926	20130411	US20130823553P	20130515	US20130838191P	20130621
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US20150134506P	20150317	US20150163601P	20150519	US20150184787P	20150625
US20150239146P	20151008	US20150246339P	20151026	US20150246489P	20151026
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WO2016US23798	20160323	US20160382980P	20160902	US20160382988P	20160902
US20160334243	20161025	US20170465905P	20170302	US20170532240P	20170713
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US20180910937	20180302	US20180686442P	20180618	US20180694126P	20180705
US20180034967	20180713	US20180034980	20180713	US20180722580P	20180824
US20180133665	20180917	US20190354137	20190314	US20190378780	20190409

Probable Assignee: FRESCA MEDICAL INC

Assignee(s): (std): CHEN KEVIN ; DOMINGUEZ ANDREW ; EWERS RICHARD ; FRESCA MEDICAL INC

Inventor(s): (std): CHEN EUGENE G ; GORDON ALAN ; NOLTING JOHN ; WU SAMUEL ; CRAGG ANDREW H ; TRUSHEIM JOHN EDWIN ; ADLER MARK ; LOGAN JOHN ; TRUSHEIM JOHN ; ANDERSON STEVE ; CHEN KEVIN ; EWERS RICHARD ; NISSIMOV HAIM ; DOMINGUEZ ANDREW ; CHEN EUGENE ; CHEN KEVIN NAI HONG ; ANDERSON STEPHEN WILLIAM ; NOLTING JOHN EUGENE ; ADLER MARK ALAN ; EWERS RICHARD CHRISTIAN ; TEDESCO CARL ; HARRINGTON STEVE ; GAYLORD DOUGLAS

Inventor(s): ANDREW DOMINGUEZ ; KEVIN CHEN ; RICHARD EWERS

Agent(s): VIERING JENTSCHURA AND PARTNER MBB PATENT U RECHTSANWAELTE; VIERING JENTSCHURA AND PARTNER MBB PATENT U RECHTSANWAELTE; SCHAUMBURG U PARTNER PATENTANWAELTE MBB; MARKS AND CLERK; MANUEL DE LA; MANUEL; DE LA CERRA MANUEL; ALTMAN DANIEL E; DELANEY KAROLINE A

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 DJ 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 IR IS IT JO JP KE KG KH KM KN KP KR KW KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA 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

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
CN107635615 A	20180126	LSPB	+	published / reissued	
CN107635615 A	20180126	LSPB	PB01	PUBLICATION	
CN109890443 A	20190614	LSPB	+	published / reissued	
CN109890443 A	20190614	LSPB	PB01	PUBLICATION	
EP2996753 A2	20160323	LSPB	+	published / reissued	
EP2996753 A2	20160323	LSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 20151215
EP2996753 A2	20190731	LSGT	+INTG	INTENTION TO GRANT ANNOUNCED	EFFECTIVE DATE : 20190702
EP3270996 A1	20180124	LSPB	+	published / reissued	
EP3270996 A1	20180124	LSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 20171017
EP3270996 A4	20190102	LSES	+A4	SUPPLEMENTARY SEARCH REPORT DRAWN UP AND DESPATCHED	EFFECTIVE DATE : 20181130
EP3506973 A1	20190710	LSPB	+	published / reissued	
EP3506973 A1	20190710	LSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 20190402
HK1243966 A1	20180727	LSPB	+	published / reissued	
US10206571 BB	20190219	LSGT	+	granted / extensions (spc, cpc, pte)	
US10206571 BB	20170221	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : FRESCA MEDICAL INC., CALIFORNIA OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:EWERS, RICHARD; CHEN, KEVIN; DOMINGUEZ, ANDREW; REEL/FRAME:041320/0511 EFFECTIVE DATE : 20170221

US10206571 BB	20190130	LSGT	PAT1	Patented Case	
US10206571 BB	20361025	PEXP		Calculated Patent Term Expiry	
US10272226 BB	20190430	LSGT	+	granted / extensions (spc, cpc, pte)	
US10272226 BB	20190410	LSGT	PAT1	Patented Case	
US10272226 BB	20350511	PEXP		Calculated Patent Term Expiry (PTA 361 days)	
US10307562 BB	20190604	LSGT	+	granted / extensions (spc, cpc, pte)	
US10307562 BB	20350505	PEXP		Calculated Patent Term Expiry (PTA 355 days)	
US10315000 BB	20190611	LSGT	+	granted / extensions (spc, cpc, pte)	
US10315000 BB	20180917	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : FRESCA MEDICAL, INC., CALIFORNIA OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:EWERS, RICHARD; DOMINGUEZ, ANDREW; REEL/FRAME:046893/0524 EFFECTIVE DATE : 20180917
US10315000 BB	20180917	LSFE	FEPP	FEE PAYMENT PROCEDURE	TEXT : ENTITY STATUS SET TO UNDISCOUNTED (ORIGINAL EVENT CODE: BIG.); ENTITY STATUS OF PATENT OWNER: SMALL ENTITY
US10315000 BB	20181009	LSFE	FEPP	FEE PAYMENT PROCEDURE	TEXT : ENTITY STATUS SET TO SMALL (ORIGINAL EVENT CODE: SMAL); ENTITY STATUS OF PATENT OWNER: SMALL ENTITY
US10315000 BB	20380917	PEXP		Calculated Patent Term Expiry	
US2013312757 AA	20131128	LSPB	+	published / reissued	
US2013312757 AA	20160420	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US2014246024 AA	20140904	LSPB	+	published / reissued	
US2014246024 AA	20150511	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : FRESCA MEDICAL, INC., CALIFORNIA OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:CRAGG, ANDREW H.; LOGAN, JOHN; NISSIMOV, HAIM; AND OTHERS; SIGNING DATES FROM 20140123 TO 20150507; REEL/FRAME:035610/0805
US2014246024 AA	20171006	LSES	ADV1	Advisory Action Mailed	
US2014246024 AA	20171113	LSWD	-ABD3	Abandoned -- Failure to Respond to an Office Action	
US2014246024 AA	20180416	LSES	WAE1	Withdrawn Abandonment, awaiting examiner action	
US2014246024 AA	20180423	LSES	ADV1	Advisory Action Mailed	
US2014246024 AA	20180720	LSES	-NFA2	Non Final Action Counted, Not Yet Mailed	
US2014246024 AA	20180725	LSES	NFA1	Non Final Action Mailed	

US2014246024 AA	20190306	LSSES	+NAM1	Notice of Allowance Mailed -- Application Received in Office of Publications	
US2014246024 AA	20190308	LSFE	+PPR1	Publications -- Issue Fee Payment Received	
US2014246024 AA	20190315	LSFE	+PPV1	Publications -- Issue Fee Payment Verified	
US2014246024 AA	20190410	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US2014246025 AA	20140904	LSPB	+	published / reissued	
US2014246025 AA	20150511	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : FRESCA MEDICAL, INC., CALIFORNIA OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:CRAGG, ANDREW H.; LOGAN, JOHN; NISSIMOV, HAIM; AND OTHERS; SIGNING DATES FROM 20140123 TO 20150507; REEL/FRAME:035610/0847
US2014246025 AA	20171006	LSSES	ADV1	Advisory Action Mailed	
US2014246025 AA	20180404	LSSES	NFA1	Non Final Action Mailed	
US2014246025 AA	20190328	LSFE	+PPV1	Publications -- Issue Fee Payment Verified	
US2014246025 AA	20190417	LSFE	+AWA3	Awaiting TC Resp, Issue Fee Payment Verified	
US2014246025 AA	20190515	LSGT	PAT1	Patented Case	
US2014246025 AA	20190515	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US2016051791 AA	20160225	LSPB	+	published / reissued	
US2016051791 AA	20161026	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US2017157356 AA	20170608	LSPB	+	published / reissued	
US2017157356 AA	20171107	LSSES	-NFA2	Non Final Action Counted, Not Yet Mailed	
US2017157356 AA	20171109	LSSES	NFA1	Non Final Action Mailed	
US2017157356 AA	20181215	LSFE	+PPV1	Publications -- Issue Fee Payment Verified	
US2017157356 AA	20190130	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US2018049638 AA	20180222	LSPB	+	published / reissued	
US2018064899 AA	20180308	LSPB	+	published / reissued	
US2018064899 AA	20170829	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : FRESCA MEDICAL, INC., CALIFORNIA OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:EWERS, RICHARD; CHEN, KEVIN; DOMINGUEZ, ANDREW; REEL/FRAME:043440/0915 EFFECTIVE DATE : 20170829
US2018185597 AA	20180705	LSPB	+	published /	

reissued					
US2018185597 AA	20180503	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : FRESCA MEDICAL INC., CALIFORNIA OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:EWERS, RICHARD; GAYLORD, DOUGLAS; TEDESCO, CARL; AND OTHERS; REEL/FRAME:045712/0179 EFFECTIVE DATE : 20180302
US2018326173 AA	20181115	LSPB	+	published / reissued	
US2018326173 AA	20180713	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : FRESCA MEDICAL, INC., CALIFORNIA OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:EWERS, RICHARD; DOMINGUEZ, ANDREW; REEL/FRAME:046347/0596 EFFECTIVE DATE : 20180713
US2019015620 AA	20190117	LSPB	+	published / reissued	
US2019015620 AA	20181220	LSES	NFA1	Non Final Action Mailed	
US2019015620 AA	20190405	LSES	+NAM1	Notice of Allowance Mailed -- Application Received in Office of Publications	
US2019015620 AA	20190409	LSFE	+PPR1	Publications -- Issue Fee Payment Received	
US2019015620 AA	20190411	LSFE	+PPV1	Publications -- Issue Fee Payment Verified	
US2019015620 AA	20190522	LSGT	PAT1	Patented Case	
US2019015620 AA	20190522	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US2019015622 AA	20190117	LSPB	+	published / reissued	
US2019015622 AA	20180713	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : FRESCA MEDICAL, INC., CALIFORNIA OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:EWERS, RICHARD; DOMINGUEZ, ANDREW; REEL/FRAME:046347/0596 EFFECTIVE DATE : 20180713
US2019224440 AA	20190725	LSPB	+	published / reissued	
US2019232011 AA	20190801	LSPB	+	published / reissued	
US9333318 BB	20160510	LSGT	+	granted / extensions (spc, cpc, pte)	
US9333318 BB	20131023	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : FRESCA MEDICAL, INC., CALIFORNIA OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:CRAGG, ANDREW H.; LOGAN, JOHN; TRUSHEIM, JOHN; AND OTHERS; SIGNING DATES FROM 20131007 TO 20131015; REEL/FRAME:031464/0857
US9333318 BB	20151129	LSFE	+PPR1	Publications -- Issue Fee Payment Received	
US9333318 BB	20160420	LSGT	PAT1	Patented Case	
US9333318 BB	20190510	LSFE	+MAFP	MAINTENANCE FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US9333318 BB	20340211	PEXP		Calculated Patent Term	

					Expiry (PTA 306 days)
US9492086 BB	20161115	LSGT	+	granted / extensions (spc, cpc, pte)	
US9492086 BB	20151102	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : FRESCA MEDICAL, INC., CALIFORNIA OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:EWERS, RICHARD; CHEN, KEVIN; DOMINGUEZ, ANDREW; REEL/FRA:036940/0823 EFFECTIVE DATE : 20151102
US9492086 BB	20161026	LSGT	PAT1	Patented Case	
US9492086 BB	20351102	PEXP		Calculated Patent Term Expiry	
WO13155349 A1	20131017	LSPB	+	published / reissued	
WO13155349 A1	20141013	LSNE	NENP	NON-ENTRY INTO THE NATIONAL PHASE IN:	REF COUNTRY CODE : DE
WO13155349 A1	20150506	LSNE	-122	EP: PCT APPLICATION NON-ENTRY IN EUROPEAN PHASE	REF DOCUMENT NUMBER : 13775746 COUNTRY OF REF DOCUMENT : EP KIND CODE OF REF DOCUMENT : A1 DESIGNATED STATE(S) :
WO14186584 A2	20141120	LSPB	+	published / reissued	
WO14186584 A3	20151215	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 2014730367 COUNTRY OF REF DOCUMENT : EP
WO16149713 A1	20160922	LSPB	+	published / reissued	
WO16149713 A1	20170919	LSNE	NENP	NON-ENTRY INTO THE NATIONAL PHASE IN:	REF COUNTRY CODE : DE
WO18045047 A1	20180308	LSPB	+	published / reissued	
WO18045047 A1	20190215	LSNP	ENP	ENTRY INTO THE NATIONAL PHASE IN:	REF DOCUMENT NUMBER : 2019510426 COUNTRY OF REF DOCUMENT : JP KIND CODE OF REF DOCUMENT : A DESIGNATED STATE(S) :
WO18045047 A1	20190305	LSNE	NENP	NON-ENTRY INTO THE NATIONAL PHASE IN:	REF COUNTRY CODE : DE
WO18045047 A1	20190426	LSNP	ENP	ENTRY INTO THE NATIONAL PHASE IN:	REF DOCUMENT NUMBER : 2017847481 COUNTRY OF REF DOCUMENT : EP EFFECTIVE DATE : 20190402
WO18161041 A1	20180907	LSPB	+	published / reissued	
WO19014567 A1	20190117	LSPB	+	published / reissued	

Title: FLARELESS TUBE FITTING FOR 37{20 {0 ADAPTER

Abstract: A fitting for connecting a metal conduit to a conventional 37 DEG flared adapter which does not require flaring of the conduit, and constitutes a compression type fitting utilizing a radially contractable ferrule and compression nut. Metal-to-metal sealing contact is achieved, and no modification of the conduit is required.

Classifications:

International (IPC 8-9): B64C29/00 B64C29/04 B64C39/00 F01D1/28 F01D5/04 F02C6/00 F02K1/00 F16L19/04 F16L19/08

F16L19/10 (Advanced/Invention);

B64C29/00 B64C39/00 F01D1/00 F01D5/02 F02K1/00

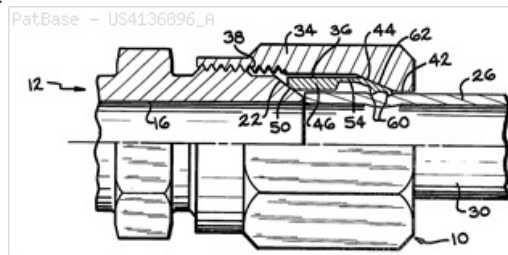
F16L19/00 (Core/Invention)

International (IPC 1-7): B64C29/00 B64C29/04 C08F8/40 F02C3/14 F02C7/02 F02K1/00 F16L15/04 F16L19/03 F16L19/04 F16L19/08

CPC: F01D1/28 B64C29/0066 B64C39/001 F01D5/041 F02C3/05 F16L19/10

European: B64C39/00B F01D1/28 F01D5/04B F16L19/10

US: 244/23.0C 244/23C 244/53R 285/341 285/382.7 60/39.183 60/39.35 60/804



Family:

Publication number	Publication date	Application number	Application date
AU197841648 A1	19790524	AU19780041648	19781116
AU519264 B2	19811119	AU19780041648	19781116
BE872073 A	19790316	BE19782057420	19781117
BR7807494 A	19790724	BR19780007494	19781114
CA1074134 A1	19800325	CA19770281748	19770630
CA1086513 A1	19800930	CA19790329287	19790608
CA1086513 A2	19800930	CA19790329287	19790608
CA1092371 A1	19801230	CA19800347892	19800318
CA1092371 A2	19801230	CA19800347892	19800318
CA1095552 A1	19810210	CA19780315417	19781031
DE2848189 A1	19790523	DE19782848189	19781107
DE2848189 C2	19830818	DE19782848189	19781107
ES475209 A1	19790416	ES19780475209	19781117
FR2409439 A1	19790615	FR19780032522	19781117
FR2409439 B1	19831021	FR19780032522	19781117
GB2008218 A1	19790531	GB19780043908	19781109
GB2008218 B2	19820512	GB19780043908	19781109
IT1106331 A	19851111	IT19780051926	19781116
IT7851926 A0	19781116	IT19780051926	19781116
JP1308011 C3	19860313	JP19780142767	19781118
JP54078518 A2	19790622	JP19780142767	19781118
JP60027874 B4	19850701	JP19780142767	19781118
MX146969 A	19820915	MX19780175648	19781116
SE441954 B	19851118	SE19780011876	19781117
SE441954 C	19860227	SE19780011876	19781117
SE7811876 A	19790519	SE19780011876D	19781117
US4136896 A	19790130	US19770852673	19771118
US4193568 A	19800318	US19770842673	19771017

Priority:

US19760702523 19760706 CA19770281748 19770630 US19770852673 19771118
CA19780315417 19781031 CA19790329287 19790608 CA19800347892 19800318

Probable Assignee: AEROQUIP CORP

Assignee(s): (std): AEROQUIP A G ; AEROQUIP AG ; AEROQUIP CORP ; HEUVEL NORMAN L

Assignee(s): RODMAN MICHAEL R ; HOLMES PAUL M ; HABIB JOSEPH ; AEROQUIP ZUG CH AG

Inventor(s): (std): M R RODMAN ; J HABIB ; JIYOSUFU HABIBU ; P M HOLMES ; JOSEPH HABIB ; MAIKERU AARU RODMAN ; JOSEFU HABIBU ; MR RODMAN ; HOORU EMU HORUMUSU ; MICHAEL R RODMAN ; RODMAN M R ; RODMAN MICHAEL R ; 1M R RODMAN ; 2P M HOLMES ; 3J HABIB ; HABIB J ; HEUVEL NORMAN L ; HOLMES PAUL M ; HABIB JOSEPH ; HOLMES P M ; HOLMES P ; HOMES P M ; POORU EMU HORUMUSU ; PAUL M HOLMES ; PM HOMES ; RODMAN M

Inventor(s): RODMAN MR HOMES P M AND HABIB J ; 1 M R RODMAN ; P M HOMES ; M HOLMES PAUL ; HABIB JOSEPH JACKSON MICH ; HABIB JOSEPH JACKSON MICH US ; 3 J HABIB ; 2 P M HOLMES ; R RODMAN MICHAEL ; RODMAN MICHAEL R HAVILAND OHIO US

Agent(s): WM; WATERMARK INTELLECTUAL PROPERTY PTY LTD; GOWLING LAFLEUR HENDERSON LLP; BORDEN LADNER GERVAIS LLP

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
AU197841648 A1	19790524	LSPB	+	published / reissued	
AU519264 B2	19811119	LSGT	+	granted / extensions (spc, cpc, pte)	

BE872073 A	19790316	LSPB	+	published / reissued	
BE872073 A	19940531	LSLE	-RE	PATENT LAPSED	PARTYTYPE : OWNER : AEROQUIP A.G. EFFECTIVE DATE : 19931130
BR7807494 A	19790724	LSPB	+	published / reissued	
CA1086513 A2	19800930	LSGT	+	granted / extensions (spc, cpc, pte)	
CA1092371 A2	19801230	LSGT	+	granted / extensions (spc, cpc, pte)	
DE2848189 A1	19790523	LSPB	+	published / reissued	
DE2848189 A1	19790523	LSES	+OAP	REQUEST FOR EXAMINATION FILED	
DE2848189 A1	19790628	LSES	+OD	REQUEST FOR EXAMINATION	
DE2848189 C2	19830818	LSGT	+	granted / extensions (spc, cpc, pte)	
DE2848189 C2	19830818	LSGT	+D2	GRANT AFTER EXAMINATION	
DE2848189 C2	19840216	LSGT	+8364	NO OPPOSITION DURING TERM OF OPPOSITION	
DE2848189 C2	19941110	LSLE	-8339	CEASED/NON-PAYMENT OF THE ANNUAL FEE	
ES475209 A1	19790416	LSGT	+	granted / extensions (spc, cpc, pte)	
ES475209 A1	19980116	LSLE	-FD1A	PATENT LAPSED	EFFECTIVE DATE : 19971201
FR2409439 A1	19790615	LSPB	+	published / reissued	
FR2409439 B1	19831021	LSGT	+	granted / extensions (spc, cpc, pte)	
FR2409439 B1	19940930	LSLE	-ST	NOTIFICATION OF LAPSE	
FR2409439 B1	19981117	PEXP		Calculated Patent Term Expiry	
GB2008218 A1	19790531	LSPB	+	published / reissued	
GB2008218 B2	19820512	LSGT	+	granted / extensions (spc, cpc, pte)	
GB2008218 B2	19940706	LSLE	-PCNP	PATENT CEASED THROUGH NON- PAYMENT OF RENEWAL FEE	EFFECTIVE DATE : 19931109
GB2008218 B2	19981109	PEXP		Calculated Patent Term Expiry	
IT1106331 A	19851111	LSGT	+	granted / extensions (spc, cpc, pte)	
IT1106331 A	19981116	PEXP		Calculated Patent Term Expiry	
JP1308011 C3	19860313	LSGT	+	granted / extensions (spc, cpc, pte)	
JP60027874 B4	19850701	LSPB	+	published / reissued	
MX146969 A	19820915	LSGT	+	granted / extensions (spc, cpc, pte)	
MX146969 A	19920915	PEXP		Calculated Patent Term Expiry	
SE441954 B	19851118	LSPB	+	published / reissued	
SE441954 B	19950131	LSLE	-NUG	PATENT HAS LAPSED	TEXT : 7811876-7 EFFECTIVE DATE : 19940610
SE441954 C	19860227	LSGT	+	granted / extensions (spc, cpc, pte)	
SE441954 C	19981117	PEXP		Calculated Patent Term Expiry	
SE7811876 A	19790519	LSPB	+	published / reissued	
US4136896 A	19790130	LSGT	+	granted / extensions (spc, cpc, pte)	
US4193568 A	19800318	LSGT	+	granted / extensions (spc, cpc, pte)	

Title: Fill valve for liquid containing device

Abstract: A device (1) for use in conjunction with an engine (25) is adapted to contain a predetermined level (A) of a liquid such as oil therein. A fill passage (4) is provided for adding liquid to the device and a drain passage (7) is provided for draining liquid from the device when the liquid is above the predetermined level. A movable valve (12) is provided for opening and closing the fill passage and the drain passage. The valve is automatically positioned so as to close both passages in response to start up of the engine whereby liquid will not be lost through the passage during operation of the engine. When the engine is not operating, the fill passage and drain passage are automatically opened in response to the application of pressure filling pressure to the fill passage as a result of an axial drive generator (31) which communicates the filling pressure to an end (32) the movable valve. The device may be an integrated drive generator in an aircraft which is designed to operate successfully in any aircraft attitude.

Classifications:

International (IPC 8-9): B64D33/00 F01M11/04

F01M11/06 (Advanced/Invention);

B64D33/00 F01M11/00 F01M11/04 (Core/Invention)

International (IPC 1-7): B64D33/00 B67D5/372 F01M1/18 F16K11/02 F16K11/04

CPC: F01M11/0408 F01M11/06

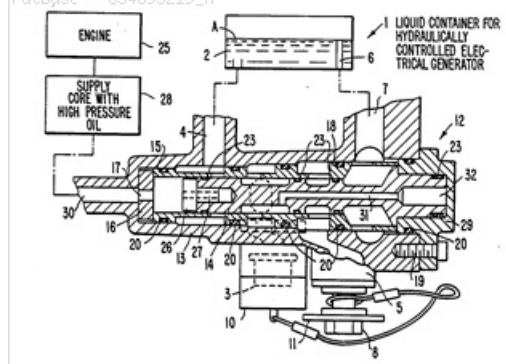
European: F01M11/04B F01M11/06

US: 123/196R 184/103.1 184/6.4 251/65

JP F-Term: 3D140 3D141

JP F-Index: B64D33/00/Z

PatBase - US4895219_A



Family:

Publication number	Publication date	Application number	Application date
FR2637669 A1	19900413	FR19890011183	19890823
GB2226107 A1	19900620	GB19890022832	19891010
GB8922832 A0	19891122	GB19890022832	19891010
IL91846 A0	19900610	IL19890091846	19890929
JP2109799 A2	19900423	JP19890215158	19890823
US4895219 A	19900123	US19880255789	19881011

Priority:

US19880255789 19881011

Probable Assignee: SUNDSTRAND A CORP OF DE CORP

Assignee(s): (std): SUNDSTRAND CORP

Assignee(s): SUNDSTRAND A CORP OF DE CORP

Inventor(s): (std): WELCH RICHARD C ; BOLGERT THOMAS A ; RICHIIYAADO SHII UERUCHI ; TOOMASU EI BORUGAATO ; BOLGERT THOMAS ARTHUR ; WELCH RICHARD CHARLES

Inventor(s): THOMAS ARTHUR BOLGERT ; RICHARD CHARLES WELCH ; THOMAS A BOLGERT ; RICHARD C WELCH

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
FR2637669 A1	19900413	LSPB	+	published / reissued	
GB2226107 A1	19900620	LSPB	+	published / reissued	
GB2226107 A1	19910731	LSWD	-WAP	APPLICATION WITHDRAWN, TAKEN TO BE WITHDRAWN OR REFUSED ** AFTER PUBLICATION UNDER SECTION 16(1)	
US4895219 A	19900123	LSGT	+	granted / extensions (spc, cpc, pte)	
US4895219 A	19881011	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : SUNDSTRAND CORPORATION, 4751 HARRISON AVE., P.O. B OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST.; ASSIGNOR:BOLGERT, THOMAS A.; REEL/FRAME:004961/0175 EFFECTIVE DATE : 19880927
US4895219 A	19881011	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : SUNDSTRAND CORPORATION, A CORP. OF DE, ILLINOIS OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST;

					ASSIGNOR:BOLGERT, THOMAS A.; REEL/FRAME:004961/0175 EFFECTIVE DATE : 19880927
US4895219 A	19881011	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : SUNDSTRAND CORPORATION, 4751 HARRISON AVE., P.O. B OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST.; ASSIGNORS:WELCH, RICHARD C.; BOLGERT, THOMAS A.; REEL/FRAME:004961/0165 EFFECTIVE DATE : 19880927
US4895219 A	19881011	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : SUNDSTRAND CORPORATION, A CORP. OF DE, ILLINOIS OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:WELCH, RICHARD C.; BOLGERT, THOMAS A.; REEL/FRAME:004961/0165 EFFECTIVE DATE : 19880927
US4895219 A	19891117	LSGT	PAT1	Patented Case	
US4895219 A	19940123	LSLE	-LAPS	LAPSE FOR FAILURE TO PAY MAINTENANCE FEES	
US4895219 A	19940405	LSLE	-FP	EXPIRED DUE TO FAILURE TO PAY MAINTENANCE FEE	EFFECTIVE DATE : 19940123
US4895219 A	20180129	LSLE	-PEX1	Patent Expired Due to NonPayment of Maintenance Fees Under 37 CFR 1.362	
US4895219 A	20180129	LSLE	-STCH	INFORMATION ON STATUS: PATENT DISCONTINUATION	TEXT : PATENT EXPIRED DUE TO NONPAYMENT OF MAINTENANCE FEES UNDER 37 CFR 1.362
US4895219 A	20081011	PEXP		Calculated Patent Term Expiry	

Title: Fill valve for liquid containing device

Abstract: A device (1) for use in conjunction with an engine (25) is adapted to contain a predetermined level (A) of a liquid such as oil therein. A fill passage (4) is provided for adding liquid to the device and a drain passage (7) is provided for draining liquid from the device when the liquid is above the predetermined level. A movable valve (12) is provided for opening and closing the fill passage and the drain passage. The valve is automatically positioned so as to close both passages in response to start up of the engine whereby liquid will not be lost through the passage during operation of the engine. The device may be an integrated drive generator in an aircraft which is designed to operate successfully in any aircraft attitude.

Classifications:

International (IPC 8-9): B64D33/00 F01M11/04

F16N29/00 (Advanced/Invention);

B64D33/00 F01M11/04 F16N29/00 (Core/Invention)

International (IPC 1-7): B64D33/00 F01M1/18 F02B65/00 F16K11/02

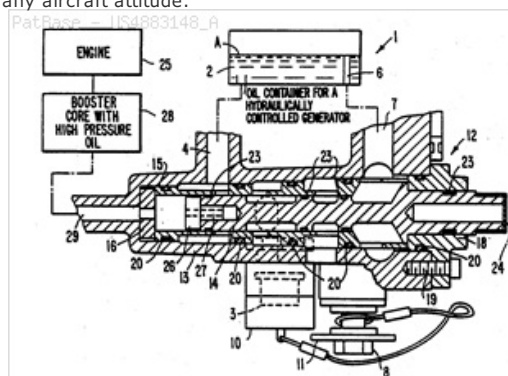
CPC: F01M11/04 F16N29/00

European: F01M11/04 F16N29/00

US: 123/196S 184/103.1 184/6.4 251/65

JP F-Term: 3D140 3D141

JP F-Index: B64D33/00/Z



Family:

Publication number	Publication date	Application number	Application date
FR2637651 A1	19900413	FR19890011064	19890821
GB2226108 A1	19900620	GB19890022834	19891010
GB8922834 A0	19891122	GB19890022834	19891010
IL91845 A0	19900610	IL19890091845	19890929
JP2127195 A2	19900515	JP19890215157	19890823
US4883148 A	19891128	US19880255834	19881011

Priority:

US19880255834 19881011

Probable Assignee: SUNDSTRAND A CORP OF DE CORP

Assignee(s): (std): SUNDSTRAND CORP

Assignee(s): SUNDSTRAND A CORP OF DE CORP

Inventor(s): (std): RICHIIYAADO SHII UERUCHI ; WELCH RICHARD C

Inventor(s): RICHARD C WELCH

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
FR2637651 A1	19900413	LSPB	+	published / reissued	
GB2226108 A1	19900620	LSPB	+	published / reissued	
GB2226108 A1	19910731	LSWD	-WAP	APPLICATION WITHDRAWN, TAKEN TO BE WITHDRAWN OR REFUSED ** AFTER PUBLICATION UNDER SECTION 16(1)	
US4883148 A	19891128	LSGT	+	granted / extensions (spc, cpc, pte)	
US4883148 A	19881011	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : SUNDSTRAND CORPORATION, 4751 HARRISON AVENUE, P.O. OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST.; ASSIGNOR:WELCH, RICHARD C.; REEL/FRAME:004959/0463 EFFECTIVE DATE : 19880927
US4883148 A	19881011	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : SUNDSTRAND CORPORATION, A CORP. OF DE, ILLINOIS OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:WELCH, RICHARD C.; REEL/FRAME:004959/0463 EFFECTIVE DATE : 19880927

US4883148 A	19890928	LSGT	PAT1	Patented Case	
US4883148 A	19931128	LSLE	-LAPS	LAPSE FOR FAILURE TO PAY MAINTENANCE FEES	
US4883148 A	19940208	LSLE	-FP	EXPIRED DUE TO FAILURE TO PAY MAINTENANCE FEE	EFFECTIVE DATE : 19891128
US4883148 A	20180129	LSLE	-PEX1	Patent Expired Due to NonPayment of Maintenance Fees Under 37 CFR 1.362	
US4883148 A	20180129	LSLE	-STCH	INFORMATION ON STATUS: PATENT DISCONTINUATION	TEXT : PATENT EXPIRED DUE TO NONPAYMENT OF MAINTENANCE FEES UNDER 37 CFR 1.362

Title: QUICK CONNECT COUPLING WITH DISCONNECT LOCK

Abstract: A coupling assembly is provided that generally includes a female coupling selectively interconnected to a male coupling to provide sealing engagement. In one embodiment, the female coupling and the male coupling are secured together by a mechanical locking mechanism that is disengaged with a release mechanism. To prevent inadvertent disengagement, a secondary locking device or spacer is provided which substantially prevents the release mechanism from disengaging the locking mechanism.

Classifications:

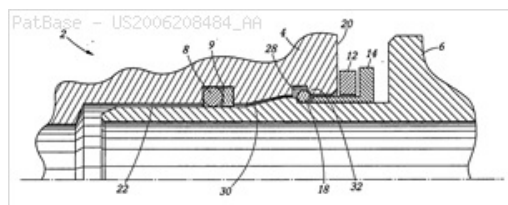
International (IPC 8-9): F16J15/00 F16J15/06 F16L19/065 F16L37/00 F16L37/06 F16L37/084 F16L37/088 F16L37/098 F16L37/62 F16L39/00 F16L55/00 (Advanced/Invention);

F16J15/00 F16L37/00 F16L39/00 F16L55/00 (Core/Invention)

CPC: F16L37/0847 F16L37/088 F16L37/0982 F16J15/064 F16L37/62 F16L2201/20 F16L37/002 F16L37/06

European: F16J15/06D F16L37/00B F16L37/06 F16L37/084M F16L37/088 F16L37/098B F16L37/62 R16L201/20

US: 285/306 285/308 285/313 285/314 285/321 285/339 285/341 285/347 285/39 285/82 285/86



Family:

Publication number	Publication date	Application number	Application date
AT529668 E	20111115	AT20060738663T	20060313
DE602006025213 D1	20111222	DE200660025213T	20060313
EP1859190 A2	20071128	EP20060737766	20060310
EP1859190 A4	20100526	EP20060737766	20060310
EP1859190 B1	20171213	EP20060737766	20060310
EP1859191 A2	20071128	EP20060738663	20060313
EP1859191 A4	20100929	EP20060738663	20060313
EP1859191 B1	20111019	EP20060738663	20060313
EP2626599 A1	20130814	EP20130165444	20060310
US2006208484 AA	20060921	US20060372733	20060309
US2007001450 AA	20070104	US20060373849	20060310
US7469933 BB	20081230	US20060372733	20060309
US7533907 BB	20090519	US20060373849	20060310
WO06099155 A2	20060921	WO2006US08621	20060310
WO06099155 A3	20071206	WO2006US08621	20060310
WO06099568 A2	20060921	WO2006US09629	20060313
WO06099568 A3	20090409	WO2006US09629	20060313

Priority:

US20050660894P	20050311	US20050660971P	20050311	US20060372733	20060309
EP20060737766	20060310	WO2006US08621	20060310	US20060373849	20060310
EP20060738663	20060313	WO2006US09629	20060313		

Probable Assignee: GATES CORP

Assignee(s): (std): GATES CORP ; SWIFT JONATHAN C ; KEAST GEOFFREY ; ROBINSON TIMOTHY ; MCGEE STEPHEN ; KEAST GEOFFREY R ; ROBINSON TIMOTHY G ; GATES CORP IP LAW DEPT

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

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
AT529668 E	20111115	LSGT	+	granted / extensions (spc, cpc, pte)	
AT529668 E	20120415	LSLE	-RER	CEASED AS TO PARAGRAPH 5 LIT. 3 LAW INTRODUCING PATENT TREATIES	

AT529668 E	20260313	PEXP		Calculated Patent Term Expiry	
EP1859190 A2	20071128	LSPB	+	published / reissued	
EP1859190 A2	20071128	LSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 20070924
EP1859190 A2	20080116	LSES	R17D	DEFERRED SEARCH REPORT PUBLISHED (CORRECTED)	EFFECTIVE DATE : 20071206
EP1859190 A4	20100526	LSES	+A4	SUPPLEMENTARY SEARCH REPORT DRAWN UP AND DESPATCHED	EFFECTIVE DATE : 20100426
EP1859190 A4	20110518	LSES	+17Q	FIRST EXAMINATION REPORT DESPATCHED	EFFECTIVE DATE : 20110415
EP1859190 A4	20170719	LSGT	+INTG	INTENTION TO GRANT ANNOUNCED	EFFECTIVE DATE : 20170623
EP1859190 A4	20171122	LSAS	RAP1	RIGHTS OF AN APPLICATION TRANSFERRED	PARTYTYPE : OWNER OWNER : GATES CORPORATION
EP1859190 B1	20171213	LSGT	+	granted / extensions (spc, cpc, pte)	
EP1859190 B1	20171213	LSGT	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : GB REF LEGAL EVENT CODE : FG4D
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EP1859190 B1	20180110	LSGT	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : IE REF LEGAL EVENT CODE : FG4D
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EP1859190 B1	20180425	LSRV	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : LT REF LEGAL EVENT CODE : MG4D
EP1859190 B1	20180430	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : SE NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20171213
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OFFICE TO EPO]					
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EP1859190 B1	20180531	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : IT PAYMENT DATE : 20180322 YEAR OF FEE PAYMENT : 13
EP1859190 B1	20180629	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : NL NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20171213
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EP1859190 B1	20180731	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE	COUNTRY OF REF DOCUMENT : DE PAYMENT DATE : 20180328 YEAR OF FEE PAYMENT : 13

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EP1859190 B1	20180831	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : PL NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20171213
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EP1859190 B1	20181226	LSLE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : IE REF LEGAL EVENT CODE : MM4A
EP1859190 B1	20181231	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : LU NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20180310
EP1859190 B1	20190131	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : IE NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20180310
EP1859190 B1	20190228	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : LI NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20180331
EP1859190 B1	20190228	LSLE	-PG25	LAPSED IN A CONTRACTING	COUNTRY OF REF DOCUMENT : BE NOTIFICATIONOFLAPSE : LAPSE

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EP1859190 B1	20260310	PEXP		Calculated Patent Term Expiry	
EP1859191 A2	20071128	LSPB	+	published / reissued	
EP1859191 A2	20071128	LSSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 20070924
EP1859191 A2	20090513	LSSES	R17D	DEFERRED SEARCH REPORT PUBLISHED (CORRECTED)	EFFECTIVE DATE : 20090409
EP1859191 A4	20100929	LSSES	+A4	SUPPLEMENTARY SEARCH REPORT DRAWN UP AND DESPATCHED	EFFECTIVE DATE : 20100831
EP1859191 B1	20111019	LSGT	+	granted / extensions (spc, cpc, pte)	
EP1859191 B1	20111019	LSGT	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : GB REF LEGAL EVENT CODE : FG4D
EP1859191 B1	20111031	LSNP	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : CH REF LEGAL EVENT CODE : EP
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EP1859191 B1	20111222	LSPB	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : DE REF LEGAL EVENT CODE : R096 REF DOCUMENT NUMBER : 602006025213 COUNTRY OF REF DOCUMENT : DE EFFECTIVE DATE : 20111222
EP1859191 B1	20120208	LSRV	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : NL REF LEGAL EVENT CODE : VDEP EFFECTIVE DATE : 20111019
EP1859191 B1	20120326	LSRV	-LTIE	LT: INVALIDATION OF EUROPEAN PATENT OR PATENT	REF COUNTRY CODE : EP EFFECTIVE DATE : 20111019

EXTENSION					
EP1859191 B1	20120415	LSRV	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : AT REF LEGAL EVENT CODE : MK05 REF DOCUMENT NUMBER : 529668 COUNTRY OF REF DOCUMENT : AT KIND CODE OF REF DOCUMENT : T DESIGNATED STATE(S) : EFFECTIVE DATE : 20111019
EP1859191 B1	20120430	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : IS NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20120219
EP1859191 B1	20120430	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : LT NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20111019
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EP1859191 B1	20120731	LSLE	-PG25	LAPSED IN A	COUNTRY OF REF DOCUMENT : CZ

				CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20111019
EP1859191 B1	20120731	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : SK NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20111019
EP1859191 B1	20120731	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : BG NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20120119
EP1859191 B1	20120731	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DK NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20111019
EP1859191 B1	20120731	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : EE NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20111019
EP1859191 B1	20120831	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : IT NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20111019
EP1859191 B1	20120831	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : RO NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20111019
EP1859191 B1	20120831	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : PL NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20111019
EP1859191 B1	20120926	LSGT	+26N	NO OPPOSITION FILED	EFFECTIVE DATE : 20120720
EP1859191 B1	20121031	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : MC NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20120331
EP1859191 B1	20121031	LSLE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : CH REF LEGAL EVENT CODE : PL
EP1859191 B1	20121115	LSRE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : DE REF LEGAL EVENT CODE : R097 REF DOCUMENT NUMBER : 602006025213 COUNTRY OF REF DOCUMENT : DE EFFECTIVE DATE : 20120720
EP1859191 B1	20121221	LSLE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : FR REF LEGAL EVENT CODE : ST EFFECTIVE DATE : 20121130
EP1859191 B1	20130102	LSLE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : IE REF LEGAL EVENT CODE : MM4A

EP1859191 B1	20130131	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : CH NOTIFICATION OF LAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20120331
EP1859191 B1	20130131	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : FR NOTIFICATION OF LAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20120402
EP1859191 B1	20130131	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : IE NOTIFICATION OF LAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20120313
EP1859191 B1	20130131	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : AT NOTIFICATION OF LAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20111019
EP1859191 B1	20130131	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : LI NOTIFICATION OF LAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20120331
EP1859191 B1	20130430	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : ES NOTIFICATION OF LAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20120130
EP1859191 B1	20130628	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : FI NOTIFICATION OF LAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20111019
EP1859191 B1	20140430	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : TR NOTIFICATION OF LAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20111019
EP1859191 B1	20140530	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : LU NOTIFICATION OF LAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20120313
EP1859191 B1	20140731	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : HU NOTIFICATION OF LAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20060313
EP1859191 B1	20160531	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : GB PAYMENT DATE : 20160329 YEAR OF FEE PAYMENT : 11
EP1859191 B1	20160729	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE	COUNTRY OF REF DOCUMENT : DE PAYMENT DATE : 20160331 YEAR OF FEE PAYMENT : 11

					[ANNOUNCED FROM NATIONAL OFFICE TO EPO]	
EP1859191 B1	20171003	LSDW	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : DE REF LEGAL EVENT CODE : R119 REF DOCUMENT NUMBER : 602006025213 COUNTRY OF REF DOCUMENT : DE	
EP1859191 B1	20171129	LSLE	-GBPC	GB: EUROPEAN PATENT CEASED THROUGH NON- PAYMENT OF RENEWAL FEE	REF COUNTRY CODE : EP EFFECTIVE DATE : 20170313	
EP1859191 B1	20180131	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DE NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20171003	
EP1859191 B1	20180228	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : GB NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20170313	
EP1859191 B1	20260313	PEXP		Calculated Patent Term Expiry		
EP2626599 A1	20130814	LSPB	+	published / reissued		
EP2626599 A1	20140507	LSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 20140211	
EP2626599 A1	20180620	LSES	+17Q	FIRST EXAMINATION REPORT DESPATCHED	EFFECTIVE DATE : 20180517	
US2006208484 AA	20060921	LSPB	+	published / reissued		
US2006208484 AA	20081210	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE	
US2007001450 AA	20070104	LSPB	+	published / reissued		
US2007001450 AA	20090429	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE	
US7469933 BB	20081230	LSGT	+	granted / extensions (spc, cpc, pte)		
US7469933 BB	20060613	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : THE GATES CORPORATION, COLORADO OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:SWIFT, JONATHAN C.; KEAST, GEOFFREY R.; ROBINSON, TIMOTHY G.; AND OTHERS; REEL/FRAME:017774/0612; SIGNING DATES FROM 20060518 TO 20060522	
US7469933 BB	20081210	LSGT	PAT1	Patented Case		
US7469933 BB	20101229	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : CITICORP USA, INC., AS COLLATERAL AGENT, NEW YORK OLDPARTY : SECURITY AGREEMENT; ASSIGNORS:AIR SYSTEM COMPONENTS, INC.; AQUATIC CO.; DEXTER AXLE COMPANY; AND OTHERS; REEL/FRAME:025549/0407 EFFECTIVE DATE : 20100929	
US7469933 BB	20101230	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : WILMINGTON TRUST FSB, AS COLLATERAL AGENT, CONNECT OLDPARTY : SECOND LIEN NOTES PATENT SECURITY AGREEMENT; ASSIGNORS:AIR SYSTEM COMPONENTS, INC.; AQUATIC CO.; DEXTER AXLE COMPANY; AND OTHERS; REEL/FRAME:025560/0057	

EFFECTIVE DATE : 20100929

US7469933 BB	20120702	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US7469933 BB	20140710	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : THE GATES CORPORATION, A DELAWARE CORPORATION, COL OLDPARTY : RELEASE OF SECURITY AGREEMENT; ASSIGNOR:CITICORP USA, INC.; REEL/FRAME:033289/0254 EFFECTIVE DATE : 20140703
US7469933 BB	20140710	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : GATES MECTROL, INC., A DELAWARE CORPORATION, NEW H OLDPARTY : RELEASE OF SECURITY AGREEMENT; ASSIGNOR:CITICORP USA, INC.; REEL/FRAME:033289/0254 EFFECTIVE DATE : 20140703
US7469933 BB	20140710	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : AQUATIC CO., CALIFORNIA OLDPARTY : RELEASE OF SECURITY AGREEMENT; ASSIGNOR:CITICORP USA, INC.; REEL/FRAME:033289/0254 EFFECTIVE DATE : 20140703
US7469933 BB	20140710	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : EIFELER MASCHINENBAU GMBH, GERMANY OLDPARTY : RELEASE OF SECURITY AGREEMENT; ASSIGNOR:CITICORP USA, INC.; REEL/FRAME:033289/0254 EFFECTIVE DATE : 20140703
US7469933 BB	20140710	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : GATES MECTROL, INC., A DELAWARE CORPORATION, NEW H OLDPARTY : RELEASE OF SECURITY AGREEMENT; ASSIGNOR:WILMINGTON TRUST, NATIONAL ASSOCIATION; REEL/FRAME:033290/0631 EFFECTIVE DATE : 20140703
US7469933 BB	20140710	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : AQUATIC CO., CALIFORNIA OLDPARTY : RELEASE OF SECURITY AGREEMENT; ASSIGNOR:WILMINGTON TRUST, NATIONAL ASSOCIATION; REEL/FRAME:033290/0631 EFFECTIVE DATE : 20140703
US7469933 BB	20140710	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : THE GATES CORPORATION, A DELAWARE CORPORATION, COL OLDPARTY : RELEASE OF SECURITY AGREEMENT; ASSIGNOR:WILMINGTON TRUST, NATIONAL ASSOCIATION; REEL/FRAME:033290/0631 EFFECTIVE DATE : 20140703
US7469933 BB	20140710	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : EIFELER MASCHINENBAU GMBH, GERMANY OLDPARTY : RELEASE OF SECURITY AGREEMENT; ASSIGNOR:WILMINGTON TRUST, NATIONAL ASSOCIATION; REEL/FRAME:033290/0631 EFFECTIVE DATE : 20140703
US7469933 BB	20140804	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : CREDIT SUISSE AG, CAYMAN ISLANDS BRANCH, AS COLLAT OLDPARTY : SECURITY INTEREST; ASSIGNOR:THE GATES CORPORATION; REEL/FRAME:033465/0252 EFFECTIVE DATE : 20140801
US7469933 BB	20140805	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : CITIBANK, N.A., AS COLLATERAL AGENT, NEW YORK OLDPARTY : SECURITY INTEREST; ASSIGNOR:THE GATES CORPORATION; REEL/FRAME:033472/0333 EFFECTIVE DATE : 20140804
US7469933 BB	20150204	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : GATES CORPORATION, COLORADO OLDPARTY : CHANGE OF NAME;

ASSIGNOR:THE GATES CORPORATION;
REEL/FRAME:034893/0006
EFFECTIVE DATE : 20150108

US7469933 BB	20160630	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US7469933 BB	20270412	PEXP		Calculated Patent Term Expiry (PTA 399 days)	
US7533907 BB	20090519	LSGT	+	granted / extensions (spc, cpc, pte)	
US7533907 BB	20060608	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : THE GATES CORPORATION, COLORADO OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:SWIFT, JONATHAN C.; KEAST, GEOFFREY R.; ROBINSON, TIMOTHY G.; AND OTHERS; REEL/FRAME:017749/0405; SIGNING DATES FROM 20060518 TO 20060522
US7533907 BB	20090429	LSGT	PAT1	Patented Case	
US7533907 BB	20101229	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : CITICORP USA, INC., AS COLLATERAL AGENT, NEW YORK OLDPARTY : SECURITY AGREEMENT; ASSIGNORS:AIR SYSTEM COMPONENTS, INC.; AQUATIC CO.; DEXTER AXLE COMPANY; AND OTHERS; REEL/FRAME:025549/0407 EFFECTIVE DATE : 20100929
US7533907 BB	20101230	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : WILMINGTON TRUST FSB, AS COLLATERAL AGENT, CONNECT OLDPARTY : SECOND LIEN NOTES PATENT SECURITY AGREEMENT; ASSIGNORS:AIR SYSTEM COMPONENTS, INC.; AQUATIC CO.; DEXTER AXLE COMPANY; AND OTHERS; REEL/FRAME:025560/0057 EFFECTIVE DATE : 20100929
US7533907 BB	20121119	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US7533907 BB	20140710	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : EIFELER MASCHINENBAU GMBH, GERMANY OLDPARTY : RELEASE OF SECURITY AGREEMENT; ASSIGNOR:CITICORP USA, INC.; REEL/FRAME:033289/0254 EFFECTIVE DATE : 20140703
US7533907 BB	20140710	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : GATES MECTROL, INC., A DELAWARE CORPORATION, NEW H OLDPARTY : RELEASE OF SECURITY AGREEMENT; ASSIGNOR:CITICORP USA, INC.; REEL/FRAME:033289/0254 EFFECTIVE DATE : 20140703
US7533907 BB	20140710	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : AQUATIC CO., CALIFORNIA OLDPARTY : RELEASE OF SECURITY AGREEMENT; ASSIGNOR:CITICORP USA, INC.; REEL/FRAME:033289/0254 EFFECTIVE DATE : 20140703
US7533907 BB	20140710	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : THE GATES CORPORATION, A DELAWARE CORPORATION, COL OLDPARTY : RELEASE OF SECURITY AGREEMENT; ASSIGNOR:CITICORP USA, INC.; REEL/FRAME:033289/0254 EFFECTIVE DATE : 20140703
US7533907 BB	20140710	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : EIFELER MASCHINENBAU GMBH, GERMANY OLDPARTY : RELEASE OF SECURITY AGREEMENT; ASSIGNOR:WILMINGTON TRUST, NATIONAL ASSOCIATION; REEL/FRAME:033290/0631 EFFECTIVE DATE : 20140703
US7533907 BB	20140710	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER

					OWNER : THE GATES CORPORATION, A DELAWARE CORPORATION, COL OLDPARTY : RELEASE OF SECURITY AGREEMENT; ASSIGNOR:WILMINGTON TRUST, NATIONAL ASSOCIATION; REEL/FRAME:033290/0631 EFFECTIVE DATE : 20140703
US7533907 BB	20140710	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : GATES MECTROL, INC., A DELAWARE CORPORATION, NEW H OLDPARTY : RELEASE OF SECURITY AGREEMENT; ASSIGNOR:WILMINGTON TRUST, NATIONAL ASSOCIATION; REEL/FRAME:033290/0631 EFFECTIVE DATE : 20140703
US7533907 BB	20140710	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : AQUATIC CO., CALIFORNIA OLDPARTY : RELEASE OF SECURITY AGREEMENT; ASSIGNOR:WILMINGTON TRUST, NATIONAL ASSOCIATION; REEL/FRAME:033290/0631 EFFECTIVE DATE : 20140703
US7533907 BB	20140804	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : CREDIT SUISSE AG, CAYMAN ISLANDS BRANCH, AS COLLAT OLDPARTY : SECURITY INTEREST; ASSIGNOR:THE GATES CORPORATION; REEL/FRAME:033465/0252 EFFECTIVE DATE : 20140801
US7533907 BB	20140805	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : CITIBANK, N.A., AS COLLATERAL AGENT, NEW YORK OLDPARTY : SECURITY INTEREST; ASSIGNOR:THE GATES CORPORATION; REEL/FRAME:033472/0333 EFFECTIVE DATE : 20140804
US7533907 BB	20150204	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : GATES CORPORATION, COLORADO OLDPARTY : CHANGE OF NAME; ASSIGNOR:THE GATES CORPORATION; REEL/FRAME:034893/0006 EFFECTIVE DATE : 20150108
US7533907 BB	20161121	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US7533907 BB	20260802	PEXP		Calculated Patent Term Expiry (PTA 145 days)	
WO06099155 A2	20060921	LSPB	+	published / reissued	
WO06099155 A2	20070912	LSNE	NENP	NON-ENTRY INTO THE NATIONAL PHASE IN:	REF COUNTRY CODE : DE
WO06099155 A2	20070924	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 2006737766 COUNTRY OF REF DOCUMENT : EP
WO06099155 A2	20071011	LSNE	NENP	NON-ENTRY INTO THE NATIONAL PHASE IN:	REF COUNTRY CODE : RU
WO06099568 A2	20060921	LSPB	+	published / reissued	
WO06099568 A2	20070912	LSNE	NENP	NON-ENTRY INTO THE NATIONAL PHASE IN:	REF COUNTRY CODE : DE
WO06099568 A2	20070924	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 2006738663 COUNTRY OF REF DOCUMENT : EP
WO06099568 A2	20071011	LSNE	NENP	NON-ENTRY INTO THE NATIONAL PHASE IN:	REF COUNTRY CODE : RU

Title: VACUUM CLEANER WITH **ACCESSORY** SUPPORT

Abstract: I claim: A vacuum cleaner of the canister type comprising a lower generally cylindrical shell and an upper shell, the latter shell also being generally cylindrical and being tapered inwardly from bottom to top with its bottom diameter smaller than the upper diameter of the lower shell, an annular ledge at the juncture of the two shells, and an **accessory** ring having 'an insidediameter slightly greater than the bottom diameter of the upper shell, but less than the upper diameter of the lower shell, removably supported -on said annular ledge and masking said juncture, said ring comprising 'an inwardly extending flange portion adapted to rest upon said annular ledge and an outer downwardly extending rim portion of substantially uniform depth, and a plurality of **accessory** receiving hooks mounted on said rim portion, said ring being capable of supporting **accessories** while the cleaner is in use and also being removable from the cleaner for hanging in vertical position on a wall.

Classifications:

International (IPC 8-9): A47L5/36 (Advanced/Invention);
A47L5/22 (Core/Invention)

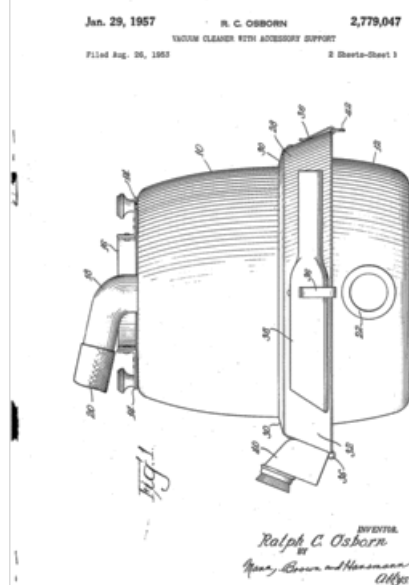
International (IPC 1-7): A47L9/00

CPC: A47L5/365

European: A47L5/36B

US: 15/246.2 15/323 248/304 248/315 D32/23

PatBase - US2779047_A



Family:

Publication number	Publication date	Application number	Application date
US2779047 A	19570129	US19530376561	19530826

Priority:

US19530376561 19530826

Probable Assignee: OSBORN RALPH C

Assignee(s): (std): OSBORN RALPH C

Inventor(s): (std): OSBORN RALPH C

Legal status (INPADOC)

[View legal status timeline](#)

Patent	Date recorded	Event group	Code	Event	Details
US2779047 A	19570129	LSGT	+	granted / extensions (spc, cpc, pte)	

Title: SELECTOR VALVE FOR CONVERTING HYDRAULIC SYSTEM FROM SINGLE-ACTING TO DOUBLE-ACTING

Abstract: (Claim 1) 1. In a tractor hydraulic power lift system of the type including a single-acting motor and a double-acting motor: means for selectively operating the motors, comprising a control valve housing having a top and bottom and front and rear and opposite sides, a fluid-pressure inlet, upper front and rear chambers intersected by an upper fore-and-aft bore opening at the rear of the housing, lower front and rear chambers intersected by a lower fore-and-aft bore opening at the rear of the housing, first and second motor outlets opening at one side of the housing for connection to the double-acting motor and connected respectively to the upper rear and lower front chambers, a third motor outlet opening at another side of the housing for connection to the single-acting motor and connected to the lower front chamber, a reservoir outlet connected to the upper front chamber, and control valve means and passages for selectively connecting the rear chambers alternately to the inlet and to a reservoir; first removable means received in and closing the rear end of the lower bore and leaving the lower chambers in communication via said lower bore; and second removable means carried by the housing in the upper bore and including relatively adjustable elements for selectively establishing and disconnecting communication between the upper chambers via said upper bore.

Classifications:

International (IPC 8-9): F15B13/06 (Advanced/Invention);
F15B13/00 (Core/Invention)

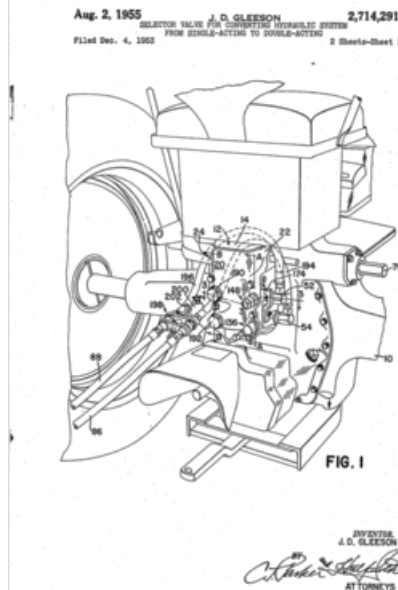
International (IPC 1-7): A01B63/10

CPC: F15B13/06 Y10T137/7062

European: F15B13/06

US: 137/382 251/274 60/458 91/531

PatBase - US2714291_A

**Family:**

Publication number	Publication date	Application number	Application date
US2714291 A	19550802	US19530396240	19531204

Priority:

US19530396240 19531204

Probable Assignee:

DEERE AND CO

Assignee(s): (std):

DEERE AND CO ; DEERE MFG CO

Assignee(s):

DEERE MANUFACTURING CO

Inventor(s): (std):

GLEESON JOHN D

Legal status (INPADOC)

[View legal status timeline](#)

Patent	Date recorded	Event group	Code	Event	Details
US2714291 A	19550802	LSGT	+	granted / extensions (spc, cpc, pte)	

Title: SPRAY CADDY AND METHOD OF DISPENSING CHEMICALS

Abstract: A spray caddy (10) for storing and transporting chemicals and cleaning accessories and method of dispensing diluted liquid chemicals with improved efficiency. The spray caddy (10) comprises a container (11) and an elongate rigid tubular handle assembly (12) that extends through a first hole (32) and a second hole (34) in container (11). Hot (>180. degree. F.), pressurized water is received from a van or trailer mounted professional cleaning machine and enters the spray caddy (10) at a first end (38) of the tubular handle assembly (12) then proceeds through an integral venturi injector (58) which siphons a precisely predetermined amount of liquid concentrate from one of a plurality of predetermined liquid concentrate supply jars (76) housed safely within the interior (28) of container (11) and mixes the concentrate with the water passing through the handle assembly (12) forming a solution of precise dilution that exits a second end (70) of handle assembly (12) and is dispensed through a delivery hose (16) to a target surface (116) of the cleaning site (14). A spray caddy (10) containing sufficient variety and capacity of chemicals to complete an entire days' worth of cleaning is transported in one trip from the work vehicle to the cleaning site (14). Chemicals are applied in efficient alternating sequence in accordance with proper cleaning procedures as set forth by carpet mills and acknowledged experts in the field of carpet and upholstery cleaning. A spray caddy (10) is provided in a completely assembled form or in a kit form comprising an assemblage of any or all of its component parts.

Classifications:

International (IPC 8-9): B08B3/02 C11D3/00 (Advanced/Invention);

B01F13/00 B01F5/04 (Advanced/Non-invention);

B08B3/02 C11D3/00 (Core/Invention);

B01F13/00 B01F5/04 (Core/Non-invention)

International (IPC 1-7): A62C13/62 D06B1/02

CPC: B01F5/0413 B01F13/002 B01F13/0033 B08B3/026 C11D3/0031

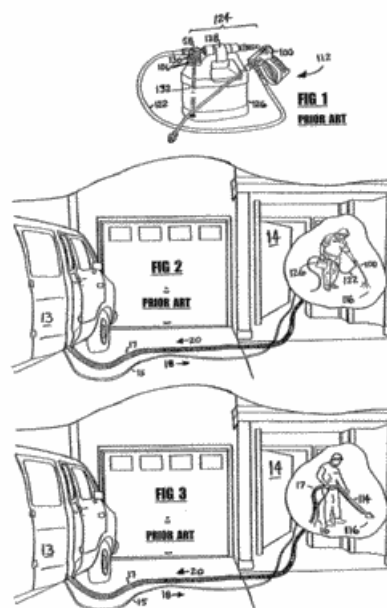
European: B01F13/00K2H B08B3/02H C11D3/00B6 L01F13/00K2B

L01F5/04C12

US: 134/100.1 134/103.1 134/95.3 15/321 239/307 239/307P 68/205R 68/5A 8/148 8/158

PatBase - US2003150936_AA

Patent Application Publication Aug. 14, 2003 Sheet 1 of 3 US 2003/0150936 A1

**Family:**

Publication number	Publication date	Application number	Application date
US2003150936 AA	20030814	US20010032437	20011231
US6880191 BB	20050419	US20010032437	20011231

Priority:

US20010032437 20011231

Probable Assignee: WANDER S INC

Assignee(s): BRISTOR JOE G ; WANDER S INC ; WANDER'S INC ; WANDER'S INC

Inventor(s): (std): BRISTOR JOE G

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
US2003150936 AA	20030814	LSPB	+	published / reissued	
US2003150936 AA	20090518	LSLE	-PEX1	Patent Expired Due to NonPayment of Maintenance Fees Under 37 CFR 1.362	
US6880191 BB	20050419	LSGT	+	granted / extensions (spc, cpc, pte)	
US6880191 BB	20011231	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : WANDER'S INCORPORATED, WASHINGTON OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST;

ASSIGNOR:BRISTOR, JOE G.;
REEL/FRAME:012427/0001
EFFECTIVE DATE : 20011129

US6880191 BB	20090419	LSLE	-LAPS	LAPSE FOR FAILURE TO PAY MAINTENANCE FEES	
US6880191 BB	20090518	LSLE	-STCH	INFORMATION ON STATUS: PATENT DISCONTINUATION	TEXT : PATENT EXPIRED DUE TO NONPAYMENT OF MAINTENANCE FEES UNDER 37 CFR 1.362
US6880191 BB	20090609	LSLE	-FP	EXPIRED DUE TO FAILURE TO PAY MAINTENANCE FEE	EFFECTIVE DATE : 20090419
US6880191 BB	20230406	PEXP		Calculated Patent Term Expiry (PTA 461 days)	

Title: CLEANING AND LUBRICATING DEVICE FOR THREADS, ESPECIALLY FOR DRILL PIPES

Abstract: An account has been made for a thread cleaning and lubricating device in the form of a **high pressure** washing device (16, 18, 20, 22, 24, 12) for cleaning external/internal threads of pipe end couplings, and equipped with a mechanism (16', 18', 20, 22', 24, 12) for applying fat under pressure on said threads. A nozzle head's main body (10) is formed with two separate annuli (14, 14') for the supply of cleaning liquid under **high pressure** or thread-fat under pressure, respectively. In order to arrange the conditions for a uniform cleaning process across the entire thread portion and an even application of thread-fat, and for simplifying and facilitating the centring of respective pipe end's socket/tap end in relation to the axis (50) of the nozzle head/body (10), each annulus (14, 14') has a 360 DEG encircling discharge slot opening (26, 26').

Classifications:

International (IPC 8-9): B08B9/02 E21B12/06

E21B17/00 (Advanced/Invention);

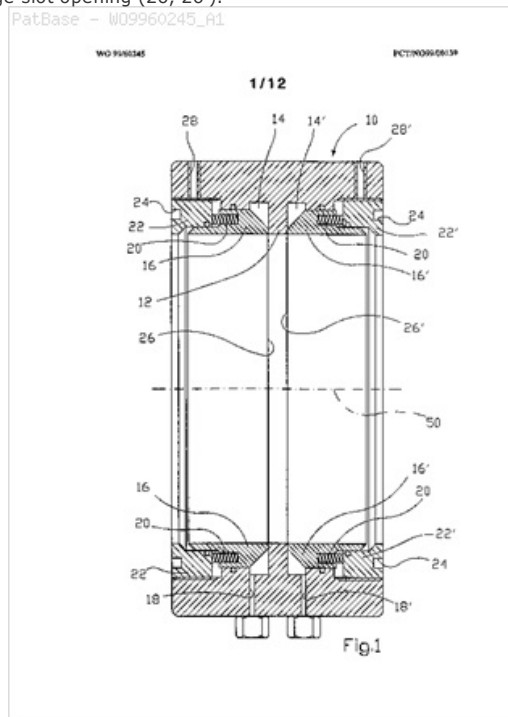
B08B9/02 E21B17/00 (Core/Invention)

International (IPC 1-7): B08B B08B9/02 E21B E21B12/00 E21B12/06

E21B17/00 F16N25/00

CPC: B08B9/021 E21B17/006

European: B08B9/02F E21B17/00M



Family:

Publication number	Publication date	Application number	Application date
AU199937372 A1	19991206	AU19990037372	19990427
CA2334717 AA	20001211	CA19992334717	19990427
EA002429 B1	20020425	EA20000001147	19990427
EA200001147 A1	20010625	EA20000001147	19990427
EP1076755 A1	20010221	EP19990919716	19990427
NO306791 B1	19991220	NO19980001992	19980504
NO981992 A	19991105	NO19980001992	19980504
NO981992 A0	19980504	NO19980001992	19980504
NO981992 L	19991105	NO19980001992	19980504
WO9960245 A1	19991125	WO1999NO00139	19990427

Priority:

NO19980001992 19980504 WO1999NO00139 19990427

Probable Assignee: GJSETH JON A

Assignee(s): (std): GJSETH JON A ; GJSETH JON ARNE

Assignee(s): JON ARNE GJSETH

Inventor(s): (std): GJSETH JON ARNE

Inventor(s): JON ARNE GJSETH

Agent(s): SIM AND MCBURNEY

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

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
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EP1076755 A1	20010221	LSPB	+	published / reissued	
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EP1076755 A1	20040512	LSDW	-18D	APPLICATION DEEMED TO BE WITHDRAWN	EFFECTIVE DATE : 20031101
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NO306791 B1	20180102	LSAS	CHAD	CHANGE OF THE OWNER'S NAME OR ADDRESS (PAR. 44 PATENT LAW, PAR. PATENTFORSKRIFTEN)	PARTYTYPE : OWNER OWNER : RANA QUALITY GROUP AS, NO
NO306791 B1	20180611	LSLE	-MK1K	PATENT EXPIRED	
NO306791 B1	20180504	PEXP		Calculated Patent Term Expiry	
NO981992 A	19991105	LSPB	+	published / reissued	
WO9960245 A1	19991125	LSPB	+	published / reissued	
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WO9960245 A1	20001204	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 200001147 COUNTRY

					OF REF DOCUMENT : EA
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WO9960245 A1	20010221	LSPB	+WWP	WIPO INFORMATION: PUBLISHED IN NATIONAL OFFICE	REF DOCUMENT NUMBER : 1999919716 COUNTRY OF REF DOCUMENT : EP
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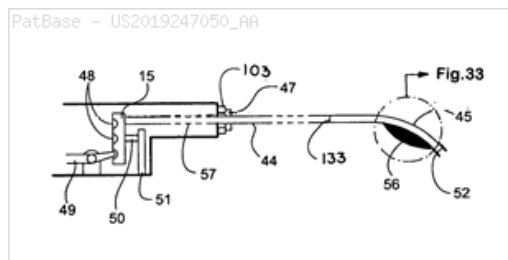
Title: INTEGRATED SYSTEM FOR THE INFIXION AND RETRIEVAL OF IMPLANTS

Abstract: Described are coordinated apparatus and methods for drug targeting, clearing the lumen, placing implants within the wall of, and stenting, as necessary, any tubular anatomical structure with single luminal entry. Miniature balls, or miniballs, are introduced into the wall aeroballistically from within the lumen, or small arcuate bands called stays inserted through the outer tunic by means of a hand tool. When miniballs must be placed too closely together to be controlled by hand, a positional control system assists in discharge. Implantation within or proximal to diseased tissue targeting, and thus concentrating the medication in that tissue, miniballs and stays can be used to deliver and controllably release multiple drugs, a radionuclide, or an open or closed loop smart-pill, for example. A glossary of terms follows the specification. Balance of abstract appended to the section entitled Summary of the Invention.

Classifications:

International (IPC 8-9): A61B17/00 A61B17/12 A61B17/34 A61B18/18 A61F2/82 (Advanced/Invention)

CPC: A61B17/12118 A61B17/12181 A61F2/82 A61B17/3468 A61B17/00491 A61B2017/00876 A61B18/18 A61B2017/00411 A61B2017/0065 A61B2017/1205 A61B17/0057



Family:

Publication number	Publication date	Application number	Application date
US2019247050 AA	20190815	US20180932172	20180214

Priority:

US20180932172 20180214

Probable Assignee:

GOLDSMITH DAVID S

Assignee(s): (std):

GOLDSMITH DAVID S

Inventor(s): (std):

GOLDSMITH DAVID S

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
US2019247050 AA	20190815	LSPB	+	published / reissued	

Title: AUTOMATIC HOSE WASHER

Abstract: A high water pressure, fire hose washing apparatus generally having a back plate, cleaning heads with spray nozzles mounted to the back plate, and optionally, guide rollers rotatably mounted to the back plate and oriented to direct hose in a generally serpentine pattern, a drive roller and a pressure roller rotatably mounted to the back plate. Optionally, the washing apparatus may also comprise means for taking up washed hose, and means for loading hose into the hose washing apparatus. Also disclosed is a method of using the high water pressure hose washing apparatus and a high water pressure cleaning system.

Classifications:

International (IPC 8-9): A62C33/02 B08B3/02 (Advanced/Invention);
A62C33/00 (Core/Invention)

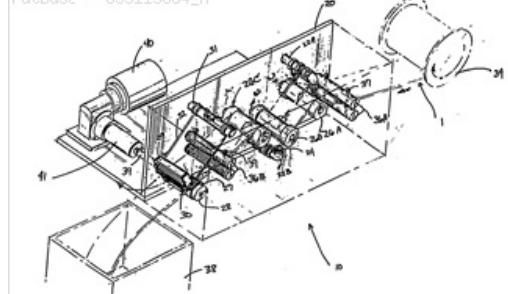
International (IPC 1-7): B08B3/02

CPC: A62C33/02

European: A62C33/02

US: 100/176 134/122P 134/122R 134/15 134/166C 134/199 134/64P
134/64R

PatBase - US5113884_A



Family:

Publication number	Publication date	Application number	Application date
AU199188596 A1	19920415	AU19910088596	19910912
US5113884 A	19920519	US19900581741	19900913
US5356480 A	19941018	US19930144899	19931029
WO9204992 A1	19920402	WO1991US06607	19910912

Priority:

US19900581741 19900913 WO1991US06607 19910912 US19920840753 19920224
US19930144899 19931029

Probable Assignee: MELGEORGE EDWARD L

Assignee(s): (std): EDWARD L MELGEORGE ; MELGEORGE EDWARD L

Inventor(s): (std): MELGEORGE EDWARD L

Inventor(s): EDWARD L MELGEORGE

Designated states: AT AU BB BE BF BG BJ BR CA CF CG CH CI CM DE DK ES FI FR GA GB GN GR HU IT JP KP KR LK LU MC MG
ML MN MR MW NL NO PL RO SD SE SN SU TD TG

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
AU199188596 A1	19920415	LSPB	+	published / reissued	
US5113884 A	19920519	LSGT	+	granted / extensions (spc, cpc, pte)	
US5113884 A	19920506	LSGT	PAT1	Patented Case	
US5113884 A	19960515	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US5113884 A	20000521	LSLE	-LAPS	LAPSE FOR FAILURE TO PAY MAINTENANCE FEES	
US5113884 A	20000801	LSLE	-FP	EXPIRED DUE TO FAILURE TO PAY MAINTENANCE FEE	EFFECTIVE DATE : 20000519
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US5113884 A	20100913	PEXP		Calculated Patent Term Expiry	
US5356480 A	19941018	LSGT	+	granted / extensions (spc, cpc, pte)	
US5356480 A	19941007	LSGT	PAT1	Patented Case	
US5356480 A	19941007	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE

US5356480 A	19981013	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US5356480 A	20020412	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US5356480 A	20061012	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 12
US5356480 A	20131029	PEXP		Calculated Patent Term Expiry	
WO9204992 A1	19920402	LSPB	+	published / reissued	
WO9204992 A1	19930708	LSWD	REG	REFERENCE TO NATIONAL CODE	REF COUNTRY CODE : DE REF LEGAL EVENT CODE : 8642
WO9204992 A1	19940513	LSNE	NENP	NON-ENTRY INTO THE NATIONAL PHASE IN:	REF COUNTRY CODE : CA

Title: MOBILE SURFACE CLEANER HAVING A SPARGING DEVICE

Abstract: A mobile surface cleaner is provided, which includes a mobile body configured to travel over a surface, a source of a liquid, a liquid dispenser, a flow path from the liquid source to the liquid dispenser, and an electrolyzing sparging device in fluid communication with the flow path.

Classifications:

International (IPC 8-9): A47L11/03 A47L11/14 A47L11/282 A47L11/29 A47L11/292 A47L11/30 A47L11/34 A47L11/40 A47L15/00 A47L5/38 A47L7/00 B08B3/00 B08B3/02 B08B3/08 B08B3/12 B08B5/04 B08B6/00 B08B7/00 B08B7/04 C02F1/46 C02F1/461 C02F1/467 C11D17/08 C11D7/02 C11D7/04 C25B1/04 C25B1/24 C25B1/26 C25B15/00 C25B9/00 C25D17/00 (Advanced/Invention); A47L11/00 A47L11/29 B08B3/00 B08B3/02 B08B3/08 B08B3/12 B08B5/00 B08B7/00 B08B7/04 C02F1/46 C02F1/461 C11D17/08 C11D7/02 C25B1/00 C25B15/00 C25B9/00 (Core/Invention)

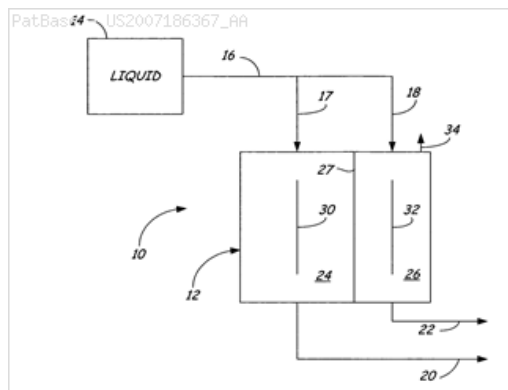
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European: A47L11/03 A47L11/292 A47L11/293 A47L11/30B A47L11/30B2 A47L11/40 A47L11/40C A47L11/40D2 A47L11/40F2 A47L11/40F6 A47L11/40N2 A47L11/40N6 A61L2/03E A61L2/18P A61L2/22 B08B3/02 B08B3/02C B08B3/02H C02F1/461B6 C11D11/00B10 C25B9/20 C25B9/20B2 K61L202/110 K61L202/160 K61L202/170 K61L202/250 K61L209/213 L08B203/02D M02F1/32 M02F1/461B2L M02F1/461B6 M02F1/461B6B M02F1/461B6D M02F1/461B6F M02F1/467B M02F1/467B2 M02F1/46H M02F201/00D2 M02F201/00M M02F201/461B10F M02F201/461B12 M02F201/461B14 M02F201/461B4 M02F201/461B6B2 M02F209/00T4 M02F209/04 M02F209/44 M02F305/02B Y02E60/36F

US: 134/1 134/10 134/10S 134/172 134/172S 134/18 134/18P 134/198 134/1S 134/21 134/21P 134/21S 134/26 134/26S 134/3 134/33 134/33S 134/34 134/34S 134/36 134/58.00RP 134/58.00RS 134/58R 134/6 134/6P 134/6S 15/300.1 15/302 15/319 15/320 15/320P 15/401 204/205 204/232 204/253 204/263 204/267 204/271 204/275.1 204/554 205/473 205/498 205/500 205/556 205/701 205/742 205/746 205/755 205/756 205/757 205/770 210/748.1 210/748.17 210/758 210/764 422/224 422/28 422/30 422/305 422/31

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**Family:**

Publication number	Publication date	Application number	Application date
AU2007212248 AA	20070816	AU20070212248	20070208
AU2007212248 BB	20120315	AU20070212248	20070208
AU2007215284 AA	20070823	AU20070215284	20070208
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Priority:

US20060772104P	20060210	US20060815804P	20060622	US20060815721P	20060622
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US20110235061	20110916	US20110275028	20111017		

Probable Assignee: TENNANT CO

Assignee(s): (std): FIELD BRUCE F ; GRONLUND PATRICK J ; TENNANT CO ; TENNANT CO US

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

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
AU2007212248 AA	20070816	LSPB	+	published / reissued	
AU2007212248 BB	20120315	LSGT	+	granted / extensions (spc, cpc, pte)	
AU2007212248 BB	20120712	LSGT	+FGA	LETTERS PATENT SEALED OR GRANTED (STANDARD PATENT)	
AU2007212248 BB	20270208	PEXP		Calculated Patent Term Expiry	
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AU2007215285 BB	20120621	LSGT	+FGA	LETTERS PATENT SEALED OR GRANTED (STANDARD PATENT)	
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BRPI0707575 A2	20140826	LSLE	-B08K	LAPSE AS NO EVIDENCE OF PAYMENT OF THE ANNUAL FEE HAS BEEN FURNISHED TO INPI (ACC. ART. 87)	TEXT : REFERENTE AO DESPACHO 8.6 PUBLICADO NA RPI 2260 DE 29/04/2014.
BRPI0707587 A2	20171205	LSFE	-B08F	APPLICATION FEES: DISMISSAL - ARTICLE 86 OF INDUSTRIAL PROPERTY LAW	
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BRPI0707717 A2	20181106	LSRV	B11E	DISMISSAL ACC. ART. 34 OF IPL - REQUIREMENTS FOR EXAMINATION INCOMPLETE	
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CN101384380 A	20090311	LSPB	+	published / reissued	
CN101384380 A	20090311	LSPB	+C06	PUBLICATION	
CN101384380 B	20111228	LSGT	+	granted / extensions (spc, cpc, pte)	

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CN101384380 B	20270208	PEXP		Calculated Patent Term Expiry	
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CN101394941 A	20090325	LSPB	+C06	PUBLICATION	
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CN101394941 A	20130710	LSDW	-C02	DEEMED WITHDRAWAL OF PATENT APPLICATION AFTER PUBLICATION (PATENT LAW 2001)	
CN101410192 A	20090415	LSPB	+	published / reissued	
CN101410192 A	20090415	LSPB	+C06	PUBLICATION	
CN101410192 B	20101208	LSGT	+	granted / extensions (spc, cpc, pte)	
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CN101421053 A	20090429	LSPB	+	published / reissued	
CN101421053 A	20090429	LSPB	+C06	PUBLICATION	
CN101421053 B	20101013	LSGT	+	granted / extensions (spc, cpc, pte)	
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CN101600516 B	20120808	LSGT	+	granted / extensions (spc, cpc, pte)	
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CN102357480 B	20270208	PEXP		Calculated Patent Term Expiry	
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EP1984124 A1	20081029	LSPB	+	published / reissued	
EP1984124 A1	20081029	LSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 20080819
EP1984124 A1	20100804	LSES	+17Q	FIRST EXAMINATION REPORT DESPATCHED	EFFECTIVE DATE : 20100706
EP1984124 A1	20120307	LSRE	RTI1	TITLE (CORRECTION)	TEXT : METHOD AND APPARATUS FOR PRODUCING HUMANLY-PERCEPTABLE INDICATOR OF ELECTROCHEMICAL PROPERTIES OF AN OUTPUT CLEANING LIQUID
EP1984124 B1	20120808	LSGT	+	granted / extensions (spc, cpc, pte)	
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EP1984124 B1	20121004	LSPB	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : DE REF LEGAL EVENT CODE : R096 REF DOCUMENT NUMBER : 602007024587 COUNTRY OF REF DOCUMENT : DE EFFECTIVE DATE : 20121004
EP1984124 B1	20130717	LSGT	+26N	NO OPPOSITION FILED	EFFECTIVE DATE : 20130510
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EP1984124 B1	20131122	LSLE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : FR REF LEGAL EVENT CODE : ST EFFECTIVE DATE : 20131031
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EP1991370 A1	20081119	LSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 20080910
EP1991370 A1	20101110	LSES	+17Q	FIRST EXAMINATION REPORT DESPATCHED	EFFECTIVE DATE : 20101006
EP1991370 A1	20120523	LSRE	RTI1	TITLE (CORRECTION)	TEXT : METHOD AND APPARATUS FOR GENERATING SPARGED, ELECTROCHEMICALLY ACTIVATED LIQUID
EP1991370 A1	20121017	LSAS	RAP1	RIGHTS OF AN APPLICATION TRANSFERRED	PARTYTYPE : OWNER OWNER : TENNANT COMPANY
EP1991370 A1	20160429	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : IT PAYMENT DATE : 20160223 YEAR OF FEE PAYMENT : 10
EP1991370 A1	20160429	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DE PAYMENT DATE : 20160226 YEAR OF FEE PAYMENT : 10
EP1991370 A1	20160531	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : FR PAYMENT DATE : 20160217 YEAR OF FEE PAYMENT : 10
EP1991370 A1	20160531	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : GB PAYMENT DATE : 20160226 YEAR OF FEE PAYMENT : 10
EP1991370 B1	20121024	LSGT	+	granted / extensions (spc, cpc, pte)	
EP1991370 B1	20121024	LSGT	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : GB REF LEGAL EVENT CODE : FG4D
EP1991370 B1	20121213	LSPB	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : DE REF LEGAL EVENT CODE : R096 REF DOCUMENT NUMBER : 602007026257 COUNTRY OF REF DOCUMENT : DE EFFECTIVE DATE : 20121213
EP1991370 B1	20131002	LSGT	+26N	NO OPPOSITION FILED	EFFECTIVE DATE : 20130725
EP1991370 B1	20131128	LSRE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : DE REF LEGAL EVENT CODE : R097 REF DOCUMENT NUMBER : 602007026257 COUNTRY OF REF DOCUMENT : DE EFFECTIVE DATE : 20130725
EP1991370 B1	20160217	LSFE	REG	REFERENCE TO A NATIONAL CODE	COUNTRY OF REF DOCUMENT : FR REF COUNTRY CODE : FR REF LEGAL EVENT CODE : PLFP YEAR OF FEE PAYMENT : 10

EP1991370 B1	20170223	LSFE	REG	REFERENCE TO A NATIONAL CODE	COUNTRY OF REF DOCUMENT : FR REF COUNTRY CODE : FR REF LEGAL EVENT CODE : PLFP YEAR OF FEE PAYMENT : 11
EP1991370 B1	20170428	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : FR PAYMENT DATE : 20170223 YEAR OF FEE PAYMENT : 11
EP1991370 B1	20170428	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DE PAYMENT DATE : 20170227 YEAR OF FEE PAYMENT : 11
EP1991370 B1	20170531	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : GB PAYMENT DATE : 20170227 YEAR OF FEE PAYMENT : 11
EP1991370 B1	20170630	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : IT PAYMENT DATE : 20170223 YEAR OF FEE PAYMENT : 11
EP1991370 B1	20180227	LSFE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : FR REF LEGAL EVENT CODE : PLFP YEAR OF FEE PAYMENT : 12
EP1991370 B1	20180430	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DE PAYMENT DATE : 20180227 YEAR OF FEE PAYMENT : 12
EP1991370 B1	20180430	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : GB PAYMENT DATE : 20180227 YEAR OF FEE PAYMENT : 12
EP1991370 B1	20180531	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : IT PAYMENT DATE : 20180222 YEAR OF FEE PAYMENT : 12
EP1991370 B1	20180531	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : FR PAYMENT DATE : 20180227 YEAR OF FEE PAYMENT : 12
EP1991370 B1	20190430	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : GB PAYMENT DATE : 20190227 YEAR OF FEE PAYMENT : 13
EP1991370 B1	20190430	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : IT PAYMENT DATE : 20190222 YEAR OF FEE PAYMENT : 13
EP1991370 B1	20190430	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DE PAYMENT DATE : 20190227 YEAR OF FEE PAYMENT : 13
EP1991370 B1	20190531	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : FR PAYMENT DATE : 20190225 YEAR OF FEE PAYMENT : 13
EP1991370 B1	20190531	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DE PAYMENT DATE : 20190227 YEAR OF FEE PAYMENT : 13
EP1991370 B1	20270208	PEXP		Calculated Patent Term Expiry	
EP1991371 A2	20081119	LSPB	+	published / reissued	
EP1991371 A2	20081119	LSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 20080910
EP1991371 A2	20160429	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM	COUNTRY OF REF DOCUMENT : IT PAYMENT DATE : 20160223

EP1991371 A2	20160429	LSFE	+PGFP	NATIONAL OFFICE TO EPO] ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	YEAR OF FEE PAYMENT : 10 COUNTRY OF REF DOCUMENT : DE PAYMENT DATE : 20160226 YEAR OF FEE PAYMENT : 10
EP1991371 A2	20160531	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : FR PAYMENT DATE : 20160217 YEAR OF FEE PAYMENT : 10
EP1991371 A2	20160531	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : GB PAYMENT DATE : 20160226 YEAR OF FEE PAYMENT : 10
EP1991371 B1	20110601	LSGT	+	granted / extensions (spc, cpc, pte)	
EP1991371 B1	20110601	LSGT	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : GB REF LEGAL EVENT CODE : FG4D
EP1991371 B1	20110714	LSPB	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : DE REF LEGAL EVENT CODE : R096 REF DOCUMENT NUMBER : 602007014957 COUNTRY OF REF DOCUMENT : DE EFFECTIVE DATE : 20110714
EP1991371 B1	20120509	LSGT	+26N	NO OPPOSITION FILED	EFFECTIVE DATE : 20120302
EP1991371 B1	20120628	LSRE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : DE REF LEGAL EVENT CODE : R097 REF DOCUMENT NUMBER : 602007014957 COUNTRY OF REF DOCUMENT : DE EFFECTIVE DATE : 20120302
EP1991371 B1	20160217	LSFE	REG	REFERENCE TO A NATIONAL CODE	COUNTRY OF REF DOCUMENT : FR REF COUNTRY CODE : FR REF LEGAL EVENT CODE : PLFP YEAR OF FEE PAYMENT : 10
EP1991371 B1	20170223	LSFE	REG	REFERENCE TO A NATIONAL CODE	COUNTRY OF REF DOCUMENT : FR REF COUNTRY CODE : FR REF LEGAL EVENT CODE : PLFP YEAR OF FEE PAYMENT : 11
EP1991371 B1	20170428	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DE PAYMENT DATE : 20170227 YEAR OF FEE PAYMENT : 11
EP1991371 B1	20170428	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : FR PAYMENT DATE : 20170223 YEAR OF FEE PAYMENT : 11
EP1991371 B1	20170531	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : GB PAYMENT DATE : 20170227 YEAR OF FEE PAYMENT : 11
EP1991371 B1	20170630	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : IT PAYMENT DATE : 20170223 YEAR OF FEE PAYMENT : 11
EP1991371 B1	20180227	LSFE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : FR REF LEGAL EVENT CODE : PLFP YEAR OF FEE PAYMENT : 12
EP1991371 B1	20180430	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : GB PAYMENT DATE : 20180227 YEAR OF FEE PAYMENT : 12
EP1991371 B1	20180430	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DE PAYMENT DATE : 20180227 YEAR OF FEE PAYMENT : 12

EP1991371 B1	20180531	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : IT PAYMENT DATE : 20180222 YEAR OF FEE PAYMENT : 12
EP1991371 B1	20180531	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : FR PAYMENT DATE : 20180227 YEAR OF FEE PAYMENT : 12
EP1991371 B1	20190430	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : GB PAYMENT DATE : 20190227 YEAR OF FEE PAYMENT : 13
EP1991371 B1	20190430	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : IT PAYMENT DATE : 20190222 YEAR OF FEE PAYMENT : 13
EP1991371 B1	20190430	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DE PAYMENT DATE : 20190227 YEAR OF FEE PAYMENT : 13
EP1991371 B1	20190531	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : FR PAYMENT DATE : 20190225 YEAR OF FEE PAYMENT : 13
EP1991371 B1	20190531	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DE PAYMENT DATE : 20190227 YEAR OF FEE PAYMENT : 13
EP1991371 B1	20270208	PEXP		Calculated Patent Term Expiry	
EP1991372 A2	20081119	LSPB	+	published / reissued	
EP1991372 A2	20081119	LSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 20080910
EP1991372 A2	20100922	LSES	+17Q	FIRST EXAMINATION REPORT DESPATCHED	EFFECTIVE DATE : 20100819
EP1991372 A2	20160429	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : IT PAYMENT DATE : 20160223 YEAR OF FEE PAYMENT : 10
EP1991372 A2	20160429	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DE PAYMENT DATE : 20160226 YEAR OF FEE PAYMENT : 10
EP1991372 A2	20160531	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : GB PAYMENT DATE : 20160226 YEAR OF FEE PAYMENT : 10
EP1991372 A2	20160531	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : FR PAYMENT DATE : 20160217 YEAR OF FEE PAYMENT : 10
EP1991372 B1	20111123	LSGT	+	granted / extensions (spc, cpc, pte)	
EP1991372 B1	20111123	LSGT	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : GB REF LEGAL EVENT CODE : FG4D
EP1991372 B1	20120119	LSPB	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : DE REF LEGAL EVENT CODE : R096 REF DOCUMENT NUMBER : 602007018933 COUNTRY OF REF DOCUMENT : DE EFFECTIVE DATE : 20120119
EP1991372 B1	20121031	LSGT	+26N	NO OPPOSITION FILED	EFFECTIVE DATE : 20120824
EP1991372 B1	20121227	LSRE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : DE REF LEGAL EVENT CODE : R097 REF DOCUMENT NUMBER : 602007018933

					COUNTRY OF REF DOCUMENT : DE EFFECTIVE DATE : 20120824
EP1991372 B1	20160217	LSFE	REG	REFERENCE TO A NATIONAL CODE	COUNTRY OF REF DOCUMENT : FR REF COUNTRY CODE : FR REF LEGAL EVENT CODE : PLFP YEAR OF FEE PAYMENT : 10
EP1991372 B1	20170223	LSFE	REG	REFERENCE TO A NATIONAL CODE	COUNTRY OF REF DOCUMENT : FR REF COUNTRY CODE : FR REF LEGAL EVENT CODE : PLFP YEAR OF FEE PAYMENT : 11
EP1991372 B1	20170428	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : FR PAYMENT DATE : 20170223 YEAR OF FEE PAYMENT : 11
EP1991372 B1	20170428	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DE PAYMENT DATE : 20170227 YEAR OF FEE PAYMENT : 11
EP1991372 B1	20170531	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : GB PAYMENT DATE : 20170227 YEAR OF FEE PAYMENT : 11
EP1991372 B1	20170630	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : IT PAYMENT DATE : 20170223 YEAR OF FEE PAYMENT : 11
EP1991372 B1	20180227	LSFE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : FR REF LEGAL EVENT CODE : PLFP YEAR OF FEE PAYMENT : 12
EP1991372 B1	20180430	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DE PAYMENT DATE : 20180227 YEAR OF FEE PAYMENT : 12
EP1991372 B1	20180430	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : GB PAYMENT DATE : 20180227 YEAR OF FEE PAYMENT : 12
EP1991372 B1	20180531	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : IT PAYMENT DATE : 20180222 YEAR OF FEE PAYMENT : 12
EP1991372 B1	20180531	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : FR PAYMENT DATE : 20180227 YEAR OF FEE PAYMENT : 12
EP1991372 B1	20190430	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DE PAYMENT DATE : 20190227 YEAR OF FEE PAYMENT : 13
EP1991372 B1	20190430	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : IT PAYMENT DATE : 20190222 YEAR OF FEE PAYMENT : 13
EP1991372 B1	20190430	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : GB PAYMENT DATE : 20190227 YEAR OF FEE PAYMENT : 13
EP1991372 B1	20190531	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DE PAYMENT DATE : 20190227 YEAR OF FEE PAYMENT : 13
EP1991372 B1	20190531	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : FR PAYMENT DATE : 20190225 YEAR OF FEE PAYMENT : 13

EP1991372 B1	20270208	PEXP		Calculated Patent Term Expiry	
EP1993743 A1	20081126	LSPB	+	published / reissued	
EP1993743 A1	20081126	LSSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 20080910
EP1993743 A1	20110420	LSSES	+17Q	FIRST EXAMINATION REPORT DESPATCHED	EFFECTIVE DATE : 20110321
EP1993743 A1	20150812	LSAS	RAP1	RIGHTS OF AN APPLICATION TRANSFERRED	PARTYTYPE : OWNER OWNER : TENNANT COMPANY
EP1993743 A1	20150902	LSGT	+INTG	INTENTION TO GRANT ANNOUNCED	EFFECTIVE DATE : 20150807
EP1993743 B1	20160413	LSGT	+	granted / extensions (spc, cpc, pte)	
EP1993743 B1	20160413	LSGT	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : GB REF LEGAL EVENT CODE : FG4D
EP1993743 B1	20160602	LSPB	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : DE REF LEGAL EVENT CODE : R096 REF DOCUMENT NUMBER : 602007045804 COUNTRY OF REF DOCUMENT : DE
EP1993743 B1	20170116	LSRE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : DE REF LEGAL EVENT CODE : R097 REF DOCUMENT NUMBER : 602007045804 COUNTRY OF REF DOCUMENT : DE
EP1993743 B1	20170223	LSFE	REG	REFERENCE TO A NATIONAL CODE	COUNTRY OF REF DOCUMENT : FR REF COUNTRY CODE : FR REF LEGAL EVENT CODE : PLFP YEAR OF FEE PAYMENT : 11
EP1993743 B1	20170322	LSGT	+26N	NO OPPOSITION FILED	EFFECTIVE DATE : 20170116
EP1993743 B1	20170428	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : FR PAYMENT DATE : 20170223 YEAR OF FEE PAYMENT : 11
EP1993743 B1	20170428	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DE PAYMENT DATE : 20170227 YEAR OF FEE PAYMENT : 11
EP1993743 B1	20170531	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : GB PAYMENT DATE : 20170227 YEAR OF FEE PAYMENT : 11
EP1993743 B1	20170630	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : IT PAYMENT DATE : 20170223 YEAR OF FEE PAYMENT : 11
EP1993743 B1	20180227	LSFE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : FR REF LEGAL EVENT CODE : PLFP YEAR OF FEE PAYMENT : 12
EP1993743 B1	20180430	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DE PAYMENT DATE : 20180227 YEAR OF FEE PAYMENT : 12
EP1993743 B1	20180430	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : GB PAYMENT DATE : 20180227 YEAR OF FEE PAYMENT : 12
EP1993743 B1	20180531	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : IT PAYMENT DATE : 20180222 YEAR OF FEE PAYMENT : 12
EP1993743 B1	20180531	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM	COUNTRY OF REF DOCUMENT : FR PAYMENT DATE : 20180227

EP1993743 B1	20190430	LSFE	+PGFP	NATIONAL OFFICE TO EPO] ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	YEAR OF FEE PAYMENT : 12 COUNTRY OF REF DOCUMENT : DE PAYMENT DATE : 20190227 YEAR OF FEE PAYMENT : 13
EP1993743 B1	20190430	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : IT PAYMENT DATE : 20190222 YEAR OF FEE PAYMENT : 13
EP1993743 B1	20190430	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : GB PAYMENT DATE : 20190227 YEAR OF FEE PAYMENT : 13
EP1993743 B1	20190531	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DE PAYMENT DATE : 20190227 YEAR OF FEE PAYMENT : 13
EP1993743 B1	20190531	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : FR PAYMENT DATE : 20190225 YEAR OF FEE PAYMENT : 13
EP1993743 B1	20270208	PEXP		Calculated Patent Term Expiry	
JP2009525818 T2	20100116	LSES	+A621	WRITTEN REQUEST FOR APPLICATION EXAMINATION	TEXT : JAPANESE INTERMEDIATE CODE: A621 EFFECTIVE DATE : 20100115
JP2009525818 T2	20110108	LSRE	A521	WRITTEN AMENDMENT	TEXT : JAPANESE INTERMEDIATE CODE: A523 EFFECTIVE DATE : 20110107
JP2009525818 T2	20110526	LSES	-A131	NOTIFICATION OF REASONS FOR REFUSAL	TEXT : JAPANESE INTERMEDIATE CODE: A131 EFFECTIVE DATE : 20110525
JP2009525818 T2	20110715	LSRE	A521	WRITTEN AMENDMENT	TEXT : JAPANESE INTERMEDIATE CODE: A523 EFFECTIVE DATE : 20110714
JP2009525818 T2	20120105	LSES	-A131	NOTIFICATION OF REASONS FOR REFUSAL	TEXT : JAPANESE INTERMEDIATE CODE: A131 EFFECTIVE DATE : 20120104
JP2009525818 T2	20120711	LSGT	+TRDD	DECISION OF GRANT OR REJECTION WRITTEN	
JP2009525818 T2	20120718	LSGT	+A01	WRITTEN DECISION TO GRANT A PATENT OR TO GRANT A REGISTRATION (UTILITY MODEL)	TEXT : JAPANESE INTERMEDIATE CODE: A01 EFFECTIVE DATE : 20120717
JP2009525818 T2	20120719	LSGT	+A01	WRITTEN DECISION TO GRANT A PATENT OR TO GRANT A REGISTRATION (UTILITY MODEL)	TEXT : JAPANESE INTERMEDIATE CODE: A01
JP2009525818 T2	20120816	LSFE	+A61	FIRST PAYMENT OF ANNUAL FEES (DURING GRANT PROCEDURE)	TEXT : JAPANESE INTERMEDIATE CODE: A61 EFFECTIVE DATE : 20120813
JP2009525818 T2	20120817	LSGT	+R150	CERTIFICATE OF PATENT OR REGISTRATION OF UTILITY MODEL	TEXT : JAPANESE INTERMEDIATE CODE: R150
JP2009525818 T2	20120820	LSFE	+FPAY	RENEWAL FEE PAYMENT (EVENT DATE IS RENEWAL DATE OF DATABASE)	YEAR OF FEE PAYMENT : 3
JP2009525820 T2	20100116	LSES	+A621	WRITTEN REQUEST FOR APPLICATION EXAMINATION	TEXT : JAPANESE INTERMEDIATE CODE: A621 EFFECTIVE DATE : 20100115
JP2009525820 T2	20110108	LSRE	A521	WRITTEN AMENDMENT	TEXT : JAPANESE INTERMEDIATE CODE: A523 EFFECTIVE DATE : 20110107

JP2009525820 T2	20110622	LSSES	-A131	NOTIFICATION OF REASONS FOR REFUSAL	TEXT : JAPANESE INTERMEDIATE CODE: A131 EFFECTIVE DATE : 20110621
JP2009525820 T2	20110922	LSRE	A521	WRITTEN AMENDMENT	TEXT : JAPANESE INTERMEDIATE CODE: A523 EFFECTIVE DATE : 20110921
JP2009525820 T2	20120319	LSGT	+TRDD	DECISION OF GRANT OR REJECTION WRITTEN	
JP2009525820 T2	20120323	LSGT	+A01	WRITTEN DECISION TO GRANT A PATENT OR TO GRANT A REGISTRATION (UTILITY MODEL)	TEXT : JAPANESE INTERMEDIATE CODE: A01 EFFECTIVE DATE : 20120322
JP2009525820 T2	20120329	LSGT	+A01	WRITTEN DECISION TO GRANT A PATENT OR TO GRANT A REGISTRATION (UTILITY MODEL)	TEXT : JAPANESE INTERMEDIATE CODE: A01
JP2009525820 T2	20120405	LSFE	+A61	FIRST PAYMENT OF ANNUAL FEES (DURING GRANT PROCEDURE)	TEXT : JAPANESE INTERMEDIATE CODE: A61 EFFECTIVE DATE : 20120323
JP2009525820 T2	20120406	LSGT	+R150	CERTIFICATE OF PATENT OR REGISTRATION OF UTILITY MODEL	TEXT : JAPANESE INTERMEDIATE CODE: R150
JP2009525820 T2	20120409	LSFE	+FPAY	RENEWAL FEE PAYMENT (EVENT DATE IS RENEWAL DATE OF DATABASE)	YEAR OF FEE PAYMENT : 3
JP2009525821 T2	20100116	LSSES	+A621	WRITTEN REQUEST FOR APPLICATION EXAMINATION	TEXT : JAPANESE INTERMEDIATE CODE: A621 EFFECTIVE DATE : 20100115
JP2009525821 T2	20110108	LSRE	A521	WRITTEN AMENDMENT	TEXT : JAPANESE INTERMEDIATE CODE: A523 EFFECTIVE DATE : 20110107
JP2009525821 T2	20110614	LSSES	-A131	NOTIFICATION OF REASONS FOR REFUSAL	TEXT : JAPANESE INTERMEDIATE CODE: A131 EFFECTIVE DATE : 20110613
JP2009525821 T2	20110830	LSRE	A521	WRITTEN AMENDMENT	TEXT : JAPANESE INTERMEDIATE CODE: A523 EFFECTIVE DATE : 20110829
JP2009525821 T2	20120208	LSSES	-A131	NOTIFICATION OF REASONS FOR REFUSAL	TEXT : JAPANESE INTERMEDIATE CODE: A131 EFFECTIVE DATE : 20120207
JP2009525821 T2	20120627	LSRV	-A02	DECISION OF REFUSAL	TEXT : JAPANESE INTERMEDIATE CODE: A02 EFFECTIVE DATE : 20120626
JP2009525869 T2	20100116	LSSES	+A621	WRITTEN REQUEST FOR APPLICATION EXAMINATION	TEXT : JAPANESE INTERMEDIATE CODE: A621 EFFECTIVE DATE : 20100115
JP2009525869 T2	20110108	LSRE	A521	WRITTEN AMENDMENT	TEXT : JAPANESE INTERMEDIATE CODE: A523 EFFECTIVE DATE : 20110107
JP2009525869 T2	20111214	LSSES	-A131	NOTIFICATION OF REASONS FOR REFUSAL	TEXT : JAPANESE INTERMEDIATE CODE: A131 EFFECTIVE DATE : 20111213
JP2009525869 T2	20120211	LSRE	A521	WRITTEN AMENDMENT	TEXT : JAPANESE INTERMEDIATE CODE: A523 EFFECTIVE DATE : 20120210
JP2009525869 T2	20120612	LSGT	+TRDD	DECISION OF GRANT OR REJECTION WRITTEN	
JP2009525869 T2	20120615	LSGT	+A01	WRITTEN DECISION TO GRANT A PATENT OR TO GRANT A REGISTRATION (UTILITY MODEL)	TEXT : JAPANESE INTERMEDIATE CODE: A01 EFFECTIVE DATE : 20120614
JP2009525869 T2	20120621	LSGT	+A01	WRITTEN DECISION	TEXT : JAPANESE INTERMEDIATE

				TO GRANT A PATENT OR TO GRANT A REGISTRATION (UTILITY MODEL)	CODE: A01
JP2009525869 T2	20120719	LSFE	+A61	FIRST PAYMENT OF ANNUAL FEES (DURING GRANT PROCEDURE)	TEXT : JAPANESE INTERMEDIATE CODE: A61 EFFECTIVE DATE : 20120711
JP2009525869 T2	20120720	LSGT	+R150	CERTIFICATE OF PATENT OR REGISTRATION OF UTILITY MODEL	TEXT : JAPANESE INTERMEDIATE CODE: R150
JP2009525869 T2	20120723	LSFE	+FPAY	RENEWAL FEE PAYMENT (EVENT DATE IS RENEWAL DATE OF DATABASE)	YEAR OF FEE PAYMENT : 3
JP2009526133 T2	20100116	LSES	+A621	WRITTEN REQUEST FOR APPLICATION EXAMINATION	TEXT : JAPANESE INTERMEDIATE CODE: A621 EFFECTIVE DATE : 20100115
JP2009526133 T2	20110108	LSRE	A521	WRITTEN AMENDMENT	TEXT : JAPANESE INTERMEDIATE CODE: A523 EFFECTIVE DATE : 20110107
JP2009526133 T2	20120419	LSES	-A131	NOTIFICATION OF REASONS FOR REFUSAL	TEXT : JAPANESE INTERMEDIATE CODE: A131 EFFECTIVE DATE : 20120418
JP2009526133 T2	20120728	LSRE	A521	WRITTEN AMENDMENT	TEXT : JAPANESE INTERMEDIATE CODE: A523 EFFECTIVE DATE : 20120727
JP2009526133 T2	20120820	LSES	-A131	NOTIFICATION OF REASONS FOR REFUSAL	TEXT : JAPANESE INTERMEDIATE CODE: A131 EFFECTIVE DATE : 20120817
JP2009526133 T2	20121117	LSRE	A521	WRITTEN AMENDMENT	TEXT : JAPANESE INTERMEDIATE CODE: A523 EFFECTIVE DATE : 20121116
JP2009526133 T2	20121212	LSES	-A131	NOTIFICATION OF REASONS FOR REFUSAL	TEXT : JAPANESE INTERMEDIATE CODE: A131 EFFECTIVE DATE : 20121211
JP2009526133 T2	20130514	LSRE	A521	WRITTEN AMENDMENT	TEXT : JAPANESE INTERMEDIATE CODE: A523 EFFECTIVE DATE : 20130513
JP2009526133 T2	20130531	LSGT	+TRDD	DECISION OF GRANT OR REJECTION WRITTEN	
JP2009526133 T2	20130605	LSGT	+A01	WRITTEN DECISION TO GRANT A PATENT OR TO GRANT A REGISTRATION (UTILITY MODEL)	TEXT : JAPANESE INTERMEDIATE CODE: A01 EFFECTIVE DATE : 20130604
JP2009526133 T2	20130711	LSFE	+A61	FIRST PAYMENT OF ANNUAL FEES (DURING GRANT PROCEDURE)	TEXT : JAPANESE INTERMEDIATE CODE: A61 EFFECTIVE DATE : 20130704
JP2009526133 T2	20130712	LSGT	+R150	CERTIFICATE OF PATENT OR REGISTRATION OF UTILITY MODEL	TEXT : JAPANESE INTERMEDIATE CODE: R150
JP2009528852 T2	20100116	LSES	+A621	WRITTEN REQUEST FOR APPLICATION EXAMINATION	TEXT : JAPANESE INTERMEDIATE CODE: A621 EFFECTIVE DATE : 20100115
JP2009528852 T2	20110108	LSRE	A521	WRITTEN AMENDMENT	TEXT : JAPANESE INTERMEDIATE CODE: A523 EFFECTIVE DATE : 20110107
JP2009528852 T2	20110603	LSES	-A131	NOTIFICATION OF REASONS FOR REFUSAL	TEXT : JAPANESE INTERMEDIATE CODE: A131 EFFECTIVE DATE : 20110602
JP2009528852 T2	20110903	LSRE	A521	WRITTEN AMENDMENT	TEXT : JAPANESE INTERMEDIATE CODE: A523 EFFECTIVE DATE : 20110902
JP2009528852 T2	20120125	LSGT	+TRDD	DECISION OF GRANT OR REJECTION	

WRITTEN					
JP2009528852 T2	20120131	LSGT	+A01	WRITTEN DECISION TO GRANT A PATENT OR TO GRANT A REGISTRATION (UTILITY MODEL)	TEXT : JAPANESE INTERMEDIATE CODE: A01 EFFECTIVE DATE : 20120130
JP2009528852 T2	20120202	LSGT	+A01	WRITTEN DECISION TO GRANT A PATENT OR TO GRANT A REGISTRATION (UTILITY MODEL)	TEXT : JAPANESE INTERMEDIATE CODE: A01
JP2009528852 T2	20120223	LSFE	+A61	FIRST PAYMENT OF ANNUAL FEES (DURING GRANT PROCEDURE)	TEXT : JAPANESE INTERMEDIATE CODE: A61 EFFECTIVE DATE : 20120220
JP2009528852 T2	20120224	LSGT	+R150	CERTIFICATE OF PATENT OR REGISTRATION OF UTILITY MODEL	TEXT : JAPANESE INTERMEDIATE CODE: R150
JP2009528852 T2	20120227	LSFE	+FPAY	RENEWAL FEE PAYMENT (EVENT DATE IS RENEWAL DATE OF DATABASE)	YEAR OF FEE PAYMENT : 3
JP4934683 B2	20120516	LSGT	+	granted / extensions (spc, cpc, pte)	
JP4934683 B2	20120202	LSGT	+A01	特許査定書 (Decision of patent grant)	
JP4934683 B2	20120221	LSFE	R100	特許料納付書 (Patent fee payment form)	
JP4934683 B2	20120224	LSGT	+R150	特許証 (Patent certificate)	
JP4934683 B2	20150212	LSFE	R20	特許料納付書 (Patent fee payment form)	
JP4934683 B2	20150217	LSFE	+R250	RECEIPT OF ANNUAL FEES	TEXT : JAPANESE INTERMEDIATE CODE: R250
JP4934683 B2	20160212	LSFE	R20	特許料納付書 (Patent fee payment form)	
JP4934683 B2	20160216	LSFE	+R250	RECEIPT OF ANNUAL FEES	TEXT : JAPANESE INTERMEDIATE CODE: R250
JP4934683 B2	20170224	LSLE	-LAPS	CANCELLATION BECAUSE OF NO PAYMENT OF ANNUAL FEES	
JP4934683 B2	20270208	PEXP		Calculated Patent Term Expiry	
JP4963503 B2	20120627	LSGT	+	granted / extensions (spc, cpc, pte)	
JP4963503 B2	20120403	LSFE	R100	特許料納付書 (Patent fee payment form)	
JP4963503 B2	20150326	LSFE	R20	特許料納付書 (Patent fee payment form)	
JP4963503 B2	20150331	LSFE	+R250	RECEIPT OF ANNUAL FEES	TEXT : JAPANESE INTERMEDIATE CODE: R250
JP4963503 B2	20160331	LSFE	R20	特許料納付書 (Patent fee payment form)	
JP4963503 B2	20160405	LSFE	+R250	RECEIPT OF ANNUAL FEES	TEXT : JAPANESE INTERMEDIATE CODE: R250
JP4963503 B2	20170330	LSFE	R20	特許料納付書 (Patent fee payment form)	
JP4963503 B2	20170404	LSFE	+R250	RECEIPT OF ANNUAL FEES	TEXT : JAPANESE INTERMEDIATE CODE: R250
JP4963503 B2	20180329	LSFE	R20	特許料納付書 (Patent fee payment form)	
JP4963503 B2	20180403	LSFE	+R250	RECEIPT OF ANNUAL FEES	TEXT : JAPANESE INTERMEDIATE CODE: R250
JP4963503 B2	20190328	LSFE	R20	特許料納付書 (Patent fee payment form)	
JP4963503 B2	20190402	LSFE	+R250	RECEIPT OF ANNUAL FEES	TEXT : JAPANESE INTERMEDIATE CODE: R250

JP4963503 B2	20270208	PEXP		Calculated Patent Term Expiry	
JP5043043 B2	20121010	LSGT	+	granted / extensions (spc, cpc, pte)	
JP5043043 B2	20120717	LSFE	R100	特許料納付書 (Patent fee payment form)	
JP5043043 B2	20150709	LSFE	R20	特許料納付書 (Patent fee payment form)	
JP5043043 B2	20150714	LSFE	+R250	RECEIPT OF ANNUAL FEES	TEXT : JAPANESE INTERMEDIATE CODE: R250
JP5043043 B2	20160714	LSFE	R20	特許料納付書 (Patent fee payment form)	
JP5043043 B2	20160719	LSFE	+R250	RECEIPT OF ANNUAL FEES	TEXT : JAPANESE INTERMEDIATE CODE: R250
JP5043043 B2	20170713	LSFE	R20	特許料納付書 (Patent fee payment form)	
JP5043043 B2	20170718	LSFE	+R250	RECEIPT OF ANNUAL FEES	TEXT : JAPANESE INTERMEDIATE CODE: R250
JP5043043 B2	20180712	LSFE	R20	特許料納付書 (Patent fee payment form)	
JP5043043 B2	20180717	LSFE	+R250	RECEIPT OF ANNUAL FEES	TEXT : JAPANESE INTERMEDIATE CODE: R250
JP5043043 B2	20190711	LSFE	R20	特許料納付書 (Patent fee payment form)	
JP5043043 B2	20190716	LSFE	+R250	RECEIPT OF ANNUAL FEES	TEXT : JAPANESE INTERMEDIATE CODE: R250
JP5043043 B2	20270208	PEXP		Calculated Patent Term Expiry	
JP5066533 B2	20121107	LSGT	+	granted / extensions (spc, cpc, pte)	
JP5066533 B2	20120814	LSFE	R100	特許料納付書 (Patent fee payment form)	
JP5066533 B2	20150813	LSFE	R20	特許料納付書 (Patent fee payment form)	
JP5066533 B2	20150818	LSFE	+R250	RECEIPT OF ANNUAL FEES	TEXT : JAPANESE INTERMEDIATE CODE: R250
JP5066533 B2	20160812	LSFE	R20	特許料納付書 (Patent fee payment form)	
JP5066533 B2	20160816	LSFE	+R250	RECEIPT OF ANNUAL FEES	TEXT : JAPANESE INTERMEDIATE CODE: R250
JP5066533 B2	20170810	LSFE	R20	特許料納付書 (Patent fee payment form)	
JP5066533 B2	20170815	LSFE	+R250	RECEIPT OF ANNUAL FEES	TEXT : JAPANESE INTERMEDIATE CODE: R250
JP5066533 B2	20180809	LSFE	R20	特許料納付書 (Patent fee payment form)	
JP5066533 B2	20180814	LSFE	+R250	RECEIPT OF ANNUAL FEES	TEXT : JAPANESE INTERMEDIATE CODE: R250
JP5066533 B2	20190808	LSFE	R20	特許料納付書 (Patent fee payment form)	
JP5066533 B2	20190813	LSFE	+R250	RECEIPT OF ANNUAL FEES	TEXT : JAPANESE INTERMEDIATE CODE: R250
JP5066533 B2	20270208	PEXP		Calculated Patent Term Expiry	
JP5313695 B2	20131009	LSGT	+	granted / extensions (spc, cpc, pte)	
JP5313695 B2	20130606	LSGT	+A01	特許査定書 (Decision of patent grant)	
JP5313695 B2	20130709	LSFE	R100	特許料納付書 (Patent fee payment form)	

JP5313695 B2	20160630	LSFE	R20	特許料納付書 (Patent fee payment form)	
JP5313695 B2	20160705	LSFE	+R250	RECEIPT OF ANNUAL FEES	TEXT : JAPANESE INTERMEDIATE CODE: R250
JP5313695 B2	20170629	LSFE	R20	特許料納付書 (Patent fee payment form)	
JP5313695 B2	20170704	LSFE	+R250	RECEIPT OF ANNUAL FEES	TEXT : JAPANESE INTERMEDIATE CODE: R250
JP5313695 B2	20180628	LSFE	R20	特許料納付書 (Patent fee payment form)	
JP5313695 B2	20180703	LSFE	+R250	RECEIPT OF ANNUAL FEES	TEXT : JAPANESE INTERMEDIATE CODE: R250
JP5313695 B2	20190627	LSFE	R20	特許料納付書 (Patent fee payment form)	
JP5313695 B2	20190702	LSFE	+R250	RECEIPT OF ANNUAL FEES	TEXT : JAPANESE INTERMEDIATE CODE: R250
JP5313695 B2	20270208	PEXP		Calculated Patent Term Expiry	
KR101360001 B1	20140206	LSGT	+	granted / extensions (spc, cpc, pte)	
KR101360001 B1	20170128	LSLE	-LAPS	LAPSE DUE TO UNPAID ANNUAL FEE	
KR101360001 B1	20270208	PEXP		Calculated Patent Term Expiry	
KR101388170 B1	20140422	LSGT	+	granted / extensions (spc, cpc, pte)	
KR101388170 B1	20170407	LSFE	FPAY	ANNUAL FEE PAYMENT	PAYMENT DATE : 20170410 YEAR OF FEE PAYMENT : 4
KR101388170 B1	20180403	LSFE	FPAY	ANNUAL FEE PAYMENT	PAYMENT DATE : 20180404 YEAR OF FEE PAYMENT : 5
KR101388170 B1	20190408	LSFE	FPAY	ANNUAL FEE PAYMENT	PAYMENT DATE : 20190409 YEAR OF FEE PAYMENT : 6
KR101388170 B1	20270208	PEXP		Calculated Patent Term Expiry	
KR101408831 B1	20140619	LSGT	+	granted / extensions (spc, cpc, pte)	
KR101408831 B1	20170529	LSFE	FPAY	ANNUAL FEE PAYMENT	PAYMENT DATE : 20170530 YEAR OF FEE PAYMENT : 4
KR101408831 B1	20180528	LSFE	FPAY	ANNUAL FEE PAYMENT	PAYMENT DATE : 20180529 YEAR OF FEE PAYMENT : 5
KR101408831 B1	20270208	PEXP		Calculated Patent Term Expiry	
KR101497905 B1	20150303	LSGT	+	granted / extensions (spc, cpc, pte)	
KR101497905 B1	20180226	LSLE	-LAPS	LAPSE DUE TO UNPAID ANNUAL FEE	
KR101497905 B1	20270208	PEXP		Calculated Patent Term Expiry	
KR101538905 B1	20150723	LSGT	+	granted / extensions (spc, cpc, pte)	
KR101538905 B1	20270208	PEXP		Calculated Patent Term Expiry	
KR20080091279 A	20081009	LSPB	+	published / reissued	
KR20080091279 A	20120208	LSES	A201	REQUEST FOR EXAMINATION	
KR20080091279 A	20130709	LSES	-E902	NOTIFICATION OF REASON FOR REFUSAL	
KR20080091279 A	20131031	LSGT	+E701	DECISION TO GRANT OR REGISTRATION OF PATENT RIGHT	
KR20080091279 A	20140127	LSGT	+GRNT	WRITTEN DECISION TO GRANT	

KR20080091834 A	20081014	LSPB	+	published / reissued	
KR20080091834 A	20120208	LSES	A201	REQUEST FOR EXAMINATION	
KR20080091834 A	20130709	LSES	-E902	NOTIFICATION OF REASON FOR REFUSAL	
KR20080091834 A	20131224	LSRV	-E601	DECISION TO REFUSE APPLICATION	
KR20080091835 A	20081014	LSPB	+	published / reissued	
KR20080091835 A	20120208	LSES	A201	REQUEST FOR EXAMINATION	
KR20080091835 A	20130709	LSES	-E902	NOTIFICATION OF REASON FOR REFUSAL	
KR20080091835 A	20140228	LSRV	-E90F	NOTIFICATION OF REASON FOR FINAL REFUSAL	
KR20080091835 A	20141128	LSGT	+E701	DECISION TO GRANT OR REGISTRATION OF PATENT RIGHT	
KR20080091835 A	20150225	LSGT	+GRNT	WRITTEN DECISION TO GRANT	
KR20080092460 A	20081015	LSPB	+	published / reissued	
KR20080092460 A	20120208	LSES	A201	REQUEST FOR EXAMINATION	
KR20080092460 A	20120227	LSRE	AMND	AMENDMENT	
KR20080092460 A	20130709	LSES	-E902	NOTIFICATION OF REASON FOR REFUSAL	
KR20080092460 A	20131010	LSRE	AMND	AMENDMENT	
KR20080092460 A	20140227	LSES	-E902	NOTIFICATION OF REASON FOR REFUSAL	
KR20080092460 A	20140626	LSRE	AMND	AMENDMENT	
KR20080092460 A	20141120	LSRV	-E601	DECISION TO REFUSE APPLICATION	
KR20080092460 A	20150113	LSRE	AMND	AMENDMENT	
KR20080092460 A	20150421	LSGT	+B701	DECISION TO GRANT	
KR20080092460 A	20150717	LSGT	+GRNT	WRITTEN DECISION TO GRANT	
KR20080092460 A	20180709	LSFE	FPAY	ANNUAL FEE PAYMENT	PAYMENT DATE : 20180710 YEAR OF FEE PAYMENT : 4
KR20080092460 A	20190708	LSFE	FPAY	ANNUAL FEE PAYMENT	PAYMENT DATE : 20190709 YEAR OF FEE PAYMENT : 5
KR20080092462 A	20081015	LSPB	+	published / reissued	
KR20080092462 A	20120208	LSES	A201	REQUEST FOR EXAMINATION	
KR20080092462 A	20130709	LSES	-E902	NOTIFICATION OF REASON FOR REFUSAL	
KR20080092462 A	20140128	LSGT	+E701	DECISION TO GRANT OR REGISTRATION OF PATENT RIGHT	
KR20080092462 A	20140416	LSGT	+GRNT	WRITTEN DECISION TO GRANT	
KR20080098510 A	20081110	LSPB	+	published / reissued	
KR20080098510 A	20120208	LSES	A201	REQUEST FOR EXAMINATION	
KR20080098510 A	20130709	LSES	-E902	NOTIFICATION OF REASON FOR REFUSAL	
KR20080098510 A	20140116	LSES	-E902	NOTIFICATION OF REASON FOR REFUSAL	
KR20080098510 A	20140320	LSGT	+E701	DECISION TO GRANT OR REGISTRATION OF PATENT RIGHT	
MX2008010114 A1	20081219	LSPB	+	published / reissued	
MX2008010114 A1	20120110	LSGT	+FG	GRANT OR REGISTRATION	
MX2008010115 A1	20090107	LSPB	+	published / reissued	

MX2008010115 A1	20110822	LSGT	+FG	GRANT OR REGISTRATION	
MX2008010120 A1	20081112	LSPB	+	published / reissued	
MX2008010120 A1	20130104	LSGT	+FG	GRANT OR REGISTRATION	
MX2008010190 A1	20081218	LSPB	+	published / reissued	
MX2008010190 A1	20110822	LSGT	+FG	GRANT OR REGISTRATION	
MX2008010194 A1	20081218	LSPB	+	published / reissued	
MX2008010194 A1	20120209	LSGT	+FG	GRANT OR REGISTRATION	
MX2008010195 A1	20081218	LSPB	+	published / reissued	
MX2008010195 A1	20111216	LSGT	+FG	GRANT OR REGISTRATION	
US2007186367 AA	20070816	LSPB	+	published / reissued	
US2007186367 AA	20090318	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : JPMORGAN CHASE BANK, NATIONAL ASSOCIATION, AS COLL OLDPARTY : SECURITY AGREEMENT; ASSIGNOR:TENNANT COMPANY; REEL/FRAME:022408/0546 EFFECTIVE DATE : 20090304
US2007186367 AA	20111012	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US2007186368 AA	20070816	LSPB	+	published / reissued	
US2007186368 AA	20090318	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : JPMORGAN CHASE BANK, NATIONAL ASSOCIATION, AS COLL OLDPARTY : SECURITY AGREEMENT; ASSIGNOR:TENNANT COMPANY; REEL/FRAME:022408/0546 EFFECTIVE DATE : 20090304
US2007186368 AA	20120328	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US2007186369 AA	20070816	LSPB	+	published / reissued	
US2007186369 AA	20090318	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : JPMORGAN CHASE BANK, NATIONAL ASSOCIATION, AS COLL OLDPARTY : SECURITY AGREEMENT; ASSIGNOR:TENNANT COMPANY; REEL/FRAME:022408/0546 EFFECTIVE DATE : 20090304
US2007186369 AA	20110202	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US2007186954 AA	20070816	LSPB	+	published / reissued	
US2007186954 AA	20090318	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : JPMORGAN CHASE BANK, NATIONAL ASSOCIATION, AS COLL OLDPARTY : SECURITY AGREEMENT; ASSIGNOR:TENNANT COMPANY; REEL/FRAME:022408/0546 EFFECTIVE DATE : 20090304
US2007186954 AA	20110817	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US2007186957 AA	20070816	LSPB	+	published / reissued	
US2007186957 AA	20090318	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : JPMORGAN CHASE BANK, NATIONAL ASSOCIATION, AS COLL OLDPARTY : SECURITY AGREEMENT; ASSIGNOR:TENNANT COMPANY; REEL/FRAME:022408/0546 EFFECTIVE DATE : 20090304

US2007186958 AA	20070816	LSPB	+	published / reissued	
US2007186958 AA	20090318	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : JPMORGAN CHASE BANK, NATIONAL ASSOCIATION, AS COLL OLDPARTY : SECURITY AGREEMENT; ASSIGNOR:TENNANT COMPANY; REEL/FRAME:022408/0546 EFFECTIVE DATE : 20090304
US2007186958 AA	20110824	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US2007187261 AA	20070816	LSPB	+	published / reissued	
US2007187261 AA	20090318	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : JPMORGAN CHASE BANK, NATIONAL ASSOCIATION, AS COLL OLDPARTY : SECURITY AGREEMENT; ASSIGNOR:TENNANT COMPANY; REEL/FRAME:022408/0546 EFFECTIVE DATE : 20090304
US2007187261 AA	20110907	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US2007187262 AA	20070816	LSPB	+	published / reissued	
US2007187262 AA	20090318	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : JPMORGAN CHASE BANK, NATIONAL ASSOCIATION, AS COLL OLDPARTY : SECURITY AGREEMENT; ASSIGNOR:TENNANT COMPANY; REEL/FRAME:022408/0546 EFFECTIVE DATE : 20090304
US2007187262 AA	20110810	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US2007187263 AA	20070816	LSPB	+	published / reissued	
US2007187263 AA	20090318	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : JPMORGAN CHASE BANK, NATIONAL ASSOCIATION, AS COLL OLDPARTY : SECURITY AGREEMENT; ASSIGNOR:TENNANT COMPANY; REEL/FRAME:022408/0546 EFFECTIVE DATE : 20090304
US2007187263 AA	20110907	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US2008210572 AA	20080904	LSPB	+	published / reissued	
US2008210572 AA	20090318	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : JPMORGAN CHASE BANK, NATIONAL ASSOCIATION, AS COLL OLDPARTY : SECURITY AGREEMENT; ASSIGNOR:TENNANT COMPANY; REEL/FRAME:022408/0546 EFFECTIVE DATE : 20090304
US2008210572 AA	20110817	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US2011132749 AA	20110609	LSPB	+	published / reissued	
US2011132749 AA	20140714	LSWD	-ABD3	Abandoned -- Failure to Respond to an Office Action	
US2012067738 AA	20120322	LSPB	+	published / reissued	
US2012067738 AA	20131120	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US2012097201 AA	20120426	LSPB	+	published / reissued	

US2012097201 AA	20140423	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US7836543 BB	20101123	LSGT	+	granted / extensions (spc, cpc, pte)	
US7836543 BB	20070119	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : TENNANT COMPANY, MINNESOTA OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:FIELD, BRUCE F.; GRONLUND, PATRICK J.; REEL/FRAME:018809/0073 EFFECTIVE DATE : 20070119
US7836543 BB	20141123	LSLE	-LAPS	LAPSE FOR FAILURE TO PAY MAINTENANCE FEES	
US7836543 BB	20141222	LSLE	-PEX1	Patent Expired Due to NonPayment of Maintenance Fees Under 37 CFR 1.362	
US7836543 BB	20141222	LSLE	-STCH	INFORMATION ON STATUS: PATENT DISCONTINUATION	TEXT : PATENT EXPIRED DUE TO NONPAYMENT OF MAINTENANCE FEES UNDER 37 CFR 1.362
US7836543 BB	20150113	LSLE	-FP	EXPIRED DUE TO FAILURE TO PAY MAINTENANCE FEE	EFFECTIVE DATE : 20141123
US7836543 BB	20150128	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : TENNANT COMPANY, MINNESOTA OLDPARTY : RELEASE BY SECURED PARTY; ASSIGNOR:JPMORGAN CHASE BANK, NATIONAL ASSOCIATION; REEL/FRAME:034837/0525 EFFECTIVE DATE : 20141202
US7836543 BB	20290814	PEXP		Calculated Patent Term Expiry (PTA 938 days)	
US7891046 BB	20110222	LSGT	+	granted / extensions (spc, cpc, pte)	
US7891046 BB	20070119	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : TENNANT COMPANY, MINNESOTA OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:FIELD, BRUCE F.; GRONLUND, PATRICK J.; REEL/FRAME:018809/0030 EFFECTIVE DATE : 20070119
US7891046 BB	20110202	LSGT	PAT1	Patented Case	
US7891046 BB	20140822	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US7891046 BB	20150128	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : TENNANT COMPANY, MINNESOTA OLDPARTY : RELEASE BY SECURED PARTY; ASSIGNOR:JPMORGAN CHASE BANK, NATIONAL ASSOCIATION; REEL/FRAME:034837/0525 EFFECTIVE DATE : 20141202
US7891046 BB	20160524	LSRE	CC	CERTIFICATE OF CORRECTION	
US7891046 BB	20170404	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : JPMORGAN CHASE BANK, N.A., AS ADMINISTRATIVE AGENT OLDPARTY : SECURITY INTEREST; ASSIGNOR:TENNANT COMPANY; REEL/FRAME:042188/0659 EFFECTIVE DATE : 20170404
US7891046 BB	20180822	LSFE	+MAFP	MAINTENANCE FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US7891046 BB	20280119	PEXP		Calculated Patent Term Expiry (PTA 365 days and a terminal disclaimer has been	

filed)					
US7959785 BB	20110614	LSGT	+	granted / extensions (spc, cpc, pte)	
US7959785 BB	20110817	LSGT	PAT1	Patented Case	
US7959785 BB	20280516	PEXP		Calculated Patent Term Expiry	
US7959787 BB	20110614	LSGT	+	granted / extensions (spc, cpc, pte)	
US7959787 BB	20110907	LSGT	PAT1	Patented Case	
US7959787 BB	20270119	PEXP		Calculated Patent Term Expiry	
US7959788 BB	20110614	LSGT	+	granted / extensions (spc, cpc, pte)	
US7959788 BB	20110824	LSGT	PAT1	Patented Case	
US7959788 BB	20270119	PEXP		Calculated Patent Term Expiry	
US7959789 BB	20110614	LSGT	+	granted / extensions (spc, cpc, pte)	
US7959789 BB	20110817	LSGT	PAT1	Patented Case	
US7959789 BB	20270119	PEXP		Calculated Patent Term Expiry	
US8007654 BB	20110830	LSGT	+	granted / extensions (spc, cpc, pte)	
US8007654 BB	20070119	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : TENNANT COMPANY, MINNESOTA OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:FIELD, BRUCE F.; GRONLUND, PATICK J.; REEL/FRAME:018831/0370 EFFECTIVE DATE : 20070119
US8007654 BB	20110810	LSGT	PAT1	Patented Case	
US8007654 BB	20150128	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : TENNANT COMPANY, MINNESOTA OLDPARTY : RELEASE BY SECURED PARTY; ASSIGNOR:JPMORGAN CHASE BANK, NATIONAL ASSOCIATION; REEL/FRAME:034837/0525 EFFECTIVE DATE : 20141202
US8007654 BB	20150302	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US8007654 BB	20170404	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : JPMORGAN CHASE BANK, N.A., AS ADMINISTRATIVE AGENT OLDPARTY : SECURITY INTEREST; ASSIGNOR:TENNANT COMPANY; REEL/FRAME:042188/0659 EFFECTIVE DATE : 20170404
US8007654 BB	20190228	LSFE	+MAFP	MAINTENANCE FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US8007654 BB	20291112	PEXP		Calculated Patent Term Expiry (PTA 1028 days and a terminal disclaimer has been filed)	
US8012339 BB	20110906	LSGT	+	granted / extensions (spc, cpc, pte)	
US8012339 BB	20080519	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : TENNANT COMPANY, MINNESOTA OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:FIELD, BRUCE F; REEL/FRAME:020966/0075 EFFECTIVE DATE : 20080516
US8012339 BB	20150128	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : TENNANT COMPANY, MINNESOTA OLDPARTY : RELEASE BY

					SECURED PARTY; ASSIGNOR:JPMORGAN CHASE BANK, NATIONAL ASSOCIATION; REEL/FRAME:034837/0525 EFFECTIVE DATE : 20141202
US8012339 BB	20150306	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US8012339 BB	20170404	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : JPMORGAN CHASE BANK, N.A., AS ADMINISTRATIVE AGENT OLDPARTY : SECURITY INTEREST; ASSIGNOR:TENNANT COMPANY; REEL/FRAME:042188/0659 EFFECTIVE DATE : 20170404
US8012339 BB	20190306	LSFE	+MAFP	MAINTENANCE FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US8012339 BB	20290722	PEXP		Calculated Patent Term Expiry (PTA 432 days)	
US8012340 BB	20110906	LSGT	+	granted / extensions (spc, cpc, pte)	
US8012340 BB	20070119	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : TENNANT COMPANY, MINNESOTA OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:FIELD, BRUCE F.; GRONLUND, PATRICK J.; REEL/FRAME:018809/0214 EFFECTIVE DATE : 20070119
US8012340 BB	20150128	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : TENNANT COMPANY, MINNESOTA OLDPARTY : RELEASE BY SECURED PARTY; ASSIGNOR:JPMORGAN CHASE BANK, NATIONAL ASSOCIATION; REEL/FRAME:034837/0525 EFFECTIVE DATE : 20141202
US8012340 BB	20150306	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US8012340 BB	20170404	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : JPMORGAN CHASE BANK, N.A., AS ADMINISTRATIVE AGENT OLDPARTY : SECURITY INTEREST; ASSIGNOR:TENNANT COMPANY; REEL/FRAME:042188/0659 EFFECTIVE DATE : 20170404
US8012340 BB	20190306	LSFE	+MAFP	MAINTENANCE FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US8012340 BB	20300109	PEXP		Calculated Patent Term Expiry (PTA 1086 days and a terminal disclaimer has been filed)	
US8016996 BB	20110913	LSGT	+	granted / extensions (spc, cpc, pte)	
US8016996 BB	20070119	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : TENNANT COMPANY, MINNESOTA OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:FIELD, BRUCE F.; GRONLUND, PATRICK J.; REEL/FRAME:018851/0754 EFFECTIVE DATE : 20070119
US8016996 BB	20150128	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : TENNANT COMPANY, MINNESOTA OLDPARTY : RELEASE BY SECURED PARTY; ASSIGNOR:JPMORGAN CHASE BANK, NATIONAL ASSOCIATION; REEL/FRAME:034837/0525 EFFECTIVE DATE : 20141202
US8016996 BB	20150313	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4

US8016996 BB	20170404	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : JPMORGAN CHASE BANK, N.A., AS ADMINISTRATIVE AGENT OLDPARTY : SECURITY INTEREST; ASSIGNOR:TENNANT COMPANY; REEL/FRAME:042188/0659 EFFECTIVE DATE : 20170404
US8016996 BB	20190313	LSFE	+MAFP	MAINTENANCE FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US8016996 BB	20300309	PEXP		Calculated Patent Term Expiry (PTA 1145 days and a terminal disclaimer has been filed)	
US8025786 BB	20110927	LSGT	+	granted / extensions (spc, cpc, pte)	
US8025786 BB	20070119	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : TENNANT COMPANY, MINNESOTA OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:FIELD, BRUCE F.; GRÖNLUND, PATRICK J.; REEL/FRAME:018810/0423 EFFECTIVE DATE : 20070119
US8025786 BB	20150128	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : TENNANT COMPANY, MINNESOTA OLDPARTY : RELEASE BY SECURED PARTY; ASSIGNOR:JPMORGAN CHASE BANK, NATIONAL ASSOCIATION; REEL/FRAME:034837/0525 EFFECTIVE DATE : 20141202
US8025786 BB	20150327	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US8025786 BB	20170404	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : JPMORGAN CHASE BANK, N.A., AS ADMINISTRATIVE AGENT OLDPARTY : SECURITY INTEREST; ASSIGNOR:TENNANT COMPANY; REEL/FRAME:042188/0659 EFFECTIVE DATE : 20170404
US8025786 BB	20190327	LSFE	+MAFP	MAINTENANCE FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US8025786 BB	20190430	LSRE	CC	CERTIFICATE OF CORRECTION	
US8025786 BB	20300403	PEXP		Calculated Patent Term Expiry (PTA 1170 days and a terminal disclaimer has been filed)	
US8025787 BB	20110927	LSGT	+	granted / extensions (spc, cpc, pte)	
US8025787 BB	20070119	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : TENNANT COMPANY, MINNESOTA OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:FIELD, BRUCE F.; GRÖNLUND, PATRICK J.; REEL/FRAME:018809/0025 EFFECTIVE DATE : 20070119
US8025787 BB	20110907	LSGT	PAT1	Patented Case	
US8025787 BB	20150128	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : TENNANT COMPANY, MINNESOTA OLDPARTY : RELEASE BY SECURED PARTY; ASSIGNOR:JPMORGAN CHASE BANK, NATIONAL ASSOCIATION; REEL/FRAME:034837/0525 EFFECTIVE DATE : 20141202
US8025787 BB	20150327	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4

US8025787 BB	20170404	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : JPMORGAN CHASE BANK, N.A., AS ADMINISTRATIVE AGENT OLDPARTY : SECURITY INTEREST; ASSIGNOR:TENNANT COMPANY; REEL/FRAME:042188/0659 EFFECTIVE DATE : 20170404
US8025787 BB	20190327	LSFE	+MAFP	MAINTENANCE FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US8025787 BB	20300331	PEXP		Calculated Patent Term Expiry (PTA 1167 days)	
US8046867 BB	20111101	LSGT	+	granted / extensions (spc, cpc, pte)	
US8046867 BB	20070119	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : TENNANT COMPANY, MINNESOTA OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:FIELD, BRUCE F.; GRONLUND, PATRICK J.; REEL/FRAME:018808/0679 EFFECTIVE DATE : 20070119
US8046867 BB	20111012	LSGT	PAT1	Patented Case	
US8046867 BB	20150128	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : TENNANT COMPANY, MINNESOTA OLDPARTY : RELEASE BY SECURED PARTY; ASSIGNOR:JPMORGAN CHASE BANK, NATIONAL ASSOCIATION; REEL/FRAME:034837/0525 EFFECTIVE DATE : 20141202
US8046867 BB	20150501	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US8046867 BB	20170404	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : JPMORGAN CHASE BANK, N.A., AS ADMINISTRATIVE AGENT OLDPARTY : SECURITY INTEREST; ASSIGNOR:TENNANT COMPANY; REEL/FRAME:042188/0659 EFFECTIVE DATE : 20170404
US8046867 BB	20190501	LSFE	+MAFP	MAINTENANCE FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US8046867 BB	20281206	PEXP		Calculated Patent Term Expiry (PTA 687 days and a terminal disclaimer has been filed)	
US8156608 BB	20120417	LSGT	+	granted / extensions (spc, cpc, pte)	
US8156608 BB	20070119	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : TENNANT COMPANY, MINNESOTA OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:FIELD, BRUCE F.; GRONLUND, PATRICK J.; REEL/FRAME:018829/0302 EFFECTIVE DATE : 20070119
US8156608 BB	20120328	LSGT	PAT1	Patented Case	
US8156608 BB	20150128	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : TENNANT COMPANY, MINNESOTA OLDPARTY : RELEASE BY SECURED PARTY; ASSIGNOR:JPMORGAN CHASE BANK, NATIONAL ASSOCIATION; REEL/FRAME:034837/0525 EFFECTIVE DATE : 20141202
US8156608 BB	20151019	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US8156608 BB	20170404	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : JPMORGAN CHASE

					BANK, N.A., AS ADMINISTRATIVE AGENT OLDPARTY : SECURITY INTEREST; ASSIGNOR:TENNANT COMPANY; REEL/FRAME:042188/0659 EFFECTIVE DATE : 20170404
US8156608 BB	20300826	PEXP		Calculated Patent Term Expiry (PTA 1315 days and a terminal disclaimer has been filed)	
US8603320 BB	20131210	LSGT	+	granted / extensions (spc, cpc, pte)	
US8603320 BB	20131120	LSGT	PAT1	Patented Case	
US8603320 BB	20170404	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : JPMORGAN CHASE BANK, N.A., AS ADMINISTRATIVE AGENT OLDPARTY : SECURITY INTEREST; ASSIGNOR:TENNANT COMPANY; REEL/FRAME:042188/0659 EFFECTIVE DATE : 20170404
US8603320 BB	20170612	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US8603320 BB	20310916	PEXP		Calculated Patent Term Expiry (a terminal disclaimer has been filed)	
US8719999 BB	20140513	LSGT	+	granted / extensions (spc, cpc, pte)	
US8719999 BB	20140423	LSGT	PAT1	Patented Case	
US8719999 BB	20160913	LSRE	CC	CERTIFICATE OF CORRECTION	
US8719999 BB	20170404	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : JPMORGAN CHASE BANK, N.A., AS ADMINISTRATIVE AGENT OLDPARTY : SECURITY INTEREST; ASSIGNOR:TENNANT COMPANY; REEL/FRAME:042188/0659 EFFECTIVE DATE : 20170404
US8719999 BB	20171113	LSFE	+MAFP	MAINTENANCE FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US8719999 BB	20311226	PEXP		Calculated Patent Term Expiry (PTA 70 days and a terminal disclaimer has been filed)	
WO07092597 A2	20070816	LSPB	+	published / reissued	
WO07092597 A3	20080724	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 2007212248 COUNTRY OF REF DOCUMENT : AU
WO07092597 A3	20080808	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 2008554378 COUNTRY OF REF DOCUMENT : JP
WO07092597 A3	20080808	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : MX/A/2008/010194 COUNTRY OF REF DOCUMENT : MX
WO07092597 A3	20080812	LSNE	NENP	NON-ENTRY INTO THE NATIONAL PHASE IN:	REF COUNTRY CODE : DE
WO07092597 A3	20080821	LSNP	ENP	ENTRY INTO THE NATIONAL PHASE IN:	REF DOCUMENT NUMBER : 2007212248 COUNTRY OF REF DOCUMENT : AU DATE OF REF DOCUMENT : 20070208 KIND CODE OF REF DOCUMENT : A DESIGNATED STATE(S) :
WO07092597 A3	20080829	LSNP	+WWE	WIPO INFORMATION:	REF DOCUMENT NUMBER :

WO07092597 A3	20080910	LSNP	+WWE	ENTRY INTO NATIONAL PHASE WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	1020087021231 COUNTRY OF REF DOCUMENT : KR REF DOCUMENT NUMBER : 2007763703 COUNTRY OF REF DOCUMENT : EP
WO07092597 A3	20081010	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 200780013021.5 COUNTRY OF REF DOCUMENT : CN
WO07092597 A3	20110510	LSNP	ENP	ENTRY INTO THE NATIONAL PHASE IN:	REF DOCUMENT NUMBER : P10707720 COUNTRY OF REF DOCUMENT : BR KIND CODE OF REF DOCUMENT : A2 DESIGNATED STATE(S) : EFFECTIVE DATE : 20080808
WO07095072 A1	20070823	LSPB	+	published / reissued	
WO07095072 A1	20080717	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 2007215284 COUNTRY OF REF DOCUMENT : AU
WO07095072 A1	20080807	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : MX/A/2008/010120 COUNTRY OF REF DOCUMENT : MX
WO07095072 A1	20080808	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 2008554363 COUNTRY OF REF DOCUMENT : JP
WO07095072 A1	20080811	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 200780005069.1 COUNTRY OF REF DOCUMENT : CN
WO07095072 A1	20080812	LSNE	NENP	NON-ENTRY INTO THE NATIONAL PHASE IN:	REF COUNTRY CODE : DE
WO07095072 A1	20080814	LSNP	ENP	ENTRY INTO THE NATIONAL PHASE IN:	REF DOCUMENT NUMBER : 2007215284 COUNTRY OF REF DOCUMENT : AU DATE OF REF DOCUMENT : 20070208 KIND CODE OF REF DOCUMENT : A DESIGNATED STATE(S) :
WO07095072 A1	20080829	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 1020087021216 COUNTRY OF REF DOCUMENT : KR
WO07095072 A1	20080910	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 2007750290 COUNTRY OF REF DOCUMENT : EP
WO07095072 A1	20110510	LSNP	ENP	ENTRY INTO THE NATIONAL PHASE IN:	REF DOCUMENT NUMBER : P10707588 COUNTRY OF REF DOCUMENT : BR KIND CODE OF REF DOCUMENT : A2 DESIGNATED STATE(S) : EFFECTIVE DATE : 20080808
WO07095073 A1	20070823	LSPB	+	published / reissued	
WO07095073 A1	20080725	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 2007215285 COUNTRY OF REF DOCUMENT : AU
WO07095073 A1	20080808	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 2008554364 COUNTRY OF REF DOCUMENT : JP

WO07095073 A1	20080808	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : MX/A/2008/010195 COUNTRY OF REF DOCUMENT : MX
WO07095073 A1	20080812	LSNE	NENP	NON-ENTRY INTO THE NATIONAL PHASE IN:	REF COUNTRY CODE : DE
WO07095073 A1	20080821	LSNP	ENP	ENTRY INTO THE NATIONAL PHASE IN:	REF DOCUMENT NUMBER : 2007215285 COUNTRY OF REF DOCUMENT : AU DATE OF REF DOCUMENT : 20070208 KIND CODE OF REF DOCUMENT : A DESIGNATED STATE(S) :
WO07095073 A1	20080910	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 2007750291 COUNTRY OF REF DOCUMENT : EP
WO07095073 A1	20080923	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 200780010434.8 COUNTRY OF REF DOCUMENT : CN
WO07095073 A1	20110510	LSNP	ENP	ENTRY INTO THE NATIONAL PHASE IN:	REF DOCUMENT NUMBER : PI0707587 COUNTRY OF REF DOCUMENT : BR KIND CODE OF REF DOCUMENT : A2 DESIGNATED STATE(S) : EFFECTIVE DATE : 20080808
WO07095074 A1	20070823	LSPB	+	published / reissued	
WO07095074 A1	20080723	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 2007215286 COUNTRY OF REF DOCUMENT : AU
WO07095074 A1	20080723	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 2007750292 COUNTRY OF REF DOCUMENT : EP
WO07095074 A1	20080807	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : MX/A/2008/010115 COUNTRY OF REF DOCUMENT : MX
WO07095074 A1	20080808	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 2008554365 COUNTRY OF REF DOCUMENT : JP
WO07095074 A1	20080812	LSNE	NENP	NON-ENTRY INTO THE NATIONAL PHASE IN:	REF COUNTRY CODE : DE
WO07095074 A1	20080821	LSNP	ENP	ENTRY INTO THE NATIONAL PHASE IN:	REF DOCUMENT NUMBER : 2007215286 COUNTRY OF REF DOCUMENT : AU DATE OF REF DOCUMENT : 20070208 KIND CODE OF REF DOCUMENT : A DESIGNATED STATE(S) :
WO07095074 A1	20080829	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 1020087021230 COUNTRY OF REF DOCUMENT : KR
WO07095074 A1	20080902	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 200780007609.X COUNTRY OF REF DOCUMENT : CN
WO07095074 A1	20110510	LSNP	ENP	ENTRY INTO THE NATIONAL PHASE IN:	REF DOCUMENT NUMBER : PI0707575 COUNTRY OF REF DOCUMENT : BR KIND CODE OF REF DOCUMENT : A2 DESIGNATED STATE(S) :

EFFECTIVE DATE : 20080808					
WO07095094 A1	20070823	LSPB	+	published / reissued	
WO07095094 A1	20070208	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 200780004794.7 COUNTRY OF REF DOCUMENT : CN
WO07095094 A1	20080718	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 2007215306 COUNTRY OF REF DOCUMENT : AU
WO07095094 A1	20080808	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 2008554377 COUNTRY OF REF DOCUMENT : JP
WO07095094 A1	20080808	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : MX/A/2008/010190 COUNTRY OF REF DOCUMENT : MX
WO07095094 A1	20080812	LSNE	NENP	NON-ENTRY INTO THE NATIONAL PHASE IN:	REF COUNTRY CODE : DE
WO07095094 A1	20080910	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 2007750338 COUNTRY OF REF DOCUMENT : EP
WO07095094 A1	20110510	LSNP	ENP	ENTRY INTO THE NATIONAL PHASE IN:	REF DOCUMENT NUMBER : PI0707717 COUNTRY OF REF DOCUMENT : BR KIND CODE OF REF DOCUMENT : A2 DESIGNATED STATE(S) : EFFECTIVE DATE : 20080808
WO07117351 A2	20071018	LSPB	+	published / reissued	
WO07117351 B1	20080721	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 2007235602 COUNTRY OF REF DOCUMENT : AU
WO07117351 B1	20080807	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : MX/A/2008/010114 COUNTRY OF REF DOCUMENT : MX
WO07117351 B1	20080808	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 2008554350 COUNTRY OF REF DOCUMENT : JP
WO07117351 B1	20080812	LSNE	NENP	NON-ENTRY INTO THE NATIONAL PHASE IN:	REF COUNTRY CODE : DE
WO07117351 B1	20080814	LSNP	ENP	ENTRY INTO THE NATIONAL PHASE IN:	REF DOCUMENT NUMBER : 2007235602 COUNTRY OF REF DOCUMENT : AU DATE OF REF DOCUMENT : 20070208 KIND CODE OF REF DOCUMENT : A DESIGNATED STATE(S) :
WO07117351 B1	20080829	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 1020087021226 COUNTRY OF REF DOCUMENT : KR
WO07117351 B1	20080910	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 2007770011 COUNTRY OF REF DOCUMENT : EP
WO07117351 B1	20081010	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 200780012999.X COUNTRY OF REF DOCUMENT : CN
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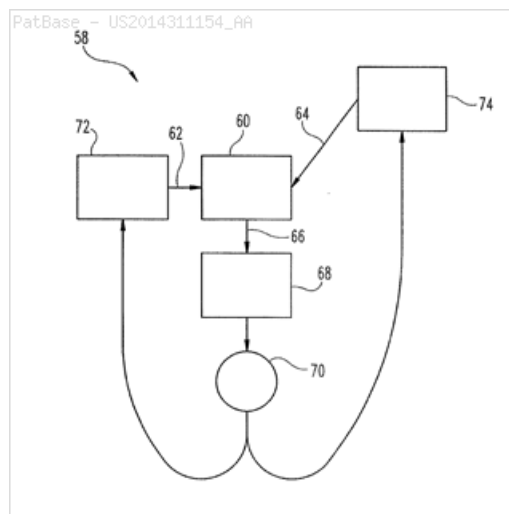
COUNTRY OF REF DOCUMENT :
BR
KIND CODE OF REF DOCUMENT :
A2
DESIGNATED STATE(S) :
EFFECTIVE DATE : 20080808

Title: FLOW MERGING DEVICE FOR A FLUID SYSTEM OF A GAS TURBINE ENGINE

Abstract: A gas turbine engine is disclosed having a working fluid system capable of moving a working fluid. The working fluid system includes a flow union member capable of combining different streams of working fluid. In one form the flow union member is a T-shape, but other embodiments can take on other shapes. The flow union member is configured to receive separate streams of working fluid. One of the separate streams is routed around another of the separate streams and the streams are combined. In one form the outlet of the flow union member includes an annular flow stream of one of the separate streams that surrounds a core flow of the other of the separate flow streams.

Classifications:**International (IPC 8-9):** F01D25/18 F15D1/02

F16L41/02 (Advanced/Invention)

CPC: F01D25/18 F15D1/02 F05D2260/602 F16L41/021 F05D2260/601**US:** 60/39.08 60/772**Family:**

Publication number	Publication date	Application number	Application date
CA2862647 AA	20140630	CA20122862647	20121230
EP2798228 A1	20141105	EP20120871717	20121230
EP2798228 A4	20150902	EP20120871717	20121230
EP2798228 B1	20190918	EP20120871717	20121230
US2014311154 AA	20141023	US20140319475	20140630
WO13141940 A1	20130926	WO2012US72230	20121230

Priority:

US20110582272P 20111231

WO2012US72230 20121230

US20140319475 20140630

Probable Assignee: ROLLS ROYCE CORP**Assignee(s):** (std): ROLLS ROYCE CORP**Assignee(s):** ROLLS ROYCE CORP2001 S. TIBBS AVENUEMAIL DROP U27INDIANAPOLISIN46241US ; LEWIS JENNIFER ANN ; MORRIS DUANE ALLEN**Inventor(s):** (std): LEWIS JENNIFER ANN ; MORRIS DUANE ALLEN**Inventor(s):** LEWIS JENNIFER ANNUS ; MORRIS DUANE ALLENUS**Agent(s):** GOWLING LAFLEUR HENDERSON LLP; ROBERTS PETER DAVID; STEPHENSON MARK T ET AL

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

Legal status (INPADOC)[View legal status timeline](#)

Patent	Date recorded	Event group	Code	Event	Details
CA2862647 AA	20140630	LSPB	+	published / reissued	
CA2862647 AA	20171215	LSES	+EEER	EXAMINATION REQUEST	EFFECTIVE DATE : 20171208
EP2798228 A1	20141105	LSPB	+	published / reissued	
EP2798228 A1	20141105	LSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 20140729
EP2798228 A4	20150902	LSES	+RA4	SUPPLEMENTARY SEARCH REPORT DRAWN UP AND DESPATCHED (CORRECTED)	EFFECTIVE DATE : 20150803

EP2798228 A4	20180516	LSES	+17Q	FIRST EXAMINATION REPORT DESPATCHED	EFFECTIVE DATE : 20180412
EP2798228 A4	20190501	LSGT	+INTG	INTENTION TO GRANT ANNOUNCED	EFFECTIVE DATE : 20190402
EP2798228 B1	20190918	LSGT	+	granted / extensions (spc, cpc, pte)	
EP2798228 B1	20321230	PEXP		Calculated Patent Term Expiry	
US2014311154 AA	20141023	LSPB	+	published / reissued	
US2014311154 AA	20150428	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : ROLLS-ROYCE CORPORATION, INDIANA OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:LEWIS, JENNIFER ANN; MORRIS, DUANE ALLAN; REEL/FRAME:035519/0556 EFFECTIVE DATE : 20130812
US2014311154 AA	20170221	LSES	NFA1	Non Final Action Mailed	
US2014311154 AA	20171027	LSES	NFA1	Non Final Action Mailed	
US2014311154 AA	20180719	LSES	-NFA2	Non Final Action Counted, Not Yet Mailed	
US2014311154 AA	20180724	LSES	NFA1	Non Final Action Mailed	
US2014311154 AA	20190416	LSES	ADV1	Advisory Action Mailed	
US2014311154 AA	20190705	LSES	NFA1	Non Final Action Mailed	
WO13141940 A1	20130926	LSPB	+	published / reissued	
WO13141940 A1	20140630	LSNP	ENP	ENTRY INTO THE NATIONAL PHASE IN:	REF DOCUMENT NUMBER : 2862647 COUNTRY OF REF DOCUMENT : CA
WO13141940 A1	20140630	LSNE	NENP	NON-ENTRY INTO THE NATIONAL PHASE IN:	REF COUNTRY CODE : DE
WO13141940 A1	20140729	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 2012871717 COUNTRY OF REF DOCUMENT : EP

Title: VEHICLE FRONT-END QUICK CONNECT HITCH AND LIFT ASSEMBLY

Abstract: A hitch and adapter assembly for connecting an implement to the front end of vehicles such as all terrain vehicle providing a rigid connection with limited motion for reduced vibration operation. The hitch has two spaced apart sockets on a rigid frame that pivotally connects to the vehicle providing a rigid extension thereof. The sockets receive and cooperatively engage respective pins on the implement providing a quick connection. An electrically powered hydraulic cylinder is connected at one end to the frame and the other end connects to the vehicle by a coupler that slip fits into a socket therefore on the vehicle. The frame pivotally connects to the vehicle at two spaced apart positions. There is a coarse and fine adjustment for varying the height and tilt positions of the implement.

Classifications:

International (IPC 8-9): A01B59/06 A01B63/118 B62D49/06 E01H1/05 E01H5/04 E01H5/06 E02F3/04 E02F3/36 E02F3/627

E02F3/96 (Advanced/Invention);

A01B63/118 (Core/Invention)

International (IPC 1-7): E01H5/04 E02F3/04 E02F3/96

CPC: A01B59/068 B60D1/465 B60D1/52 B60D3/00 B62D49/065

B62D49/0671 E01H5/06 E02F3/3604 E02F3/3609 E02F3/3668 E02F3/627

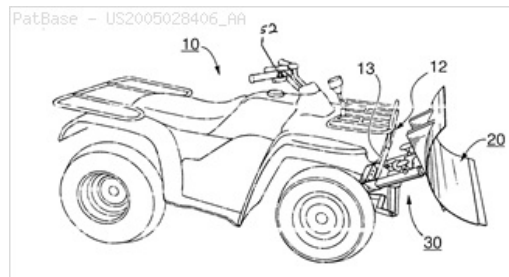
A01B59/064

European: A01B59/06F A01B59/06T4 B60D1/46B B60D1/52 B60D3/00

B62D49/06E B62D49/06G2 E01H5/06 E02F3/36C E02F3/36C2

E02F3/36C2X E02F3/627

US: 172/445.1 37/231 37/232 37/232P 37/468 414/685



Family:

Publication number	Publication date	Application number	Application date
AU2004272954 AA	20050324	AU20040272954	20040120
CA2536143 AA	20060217	CA20042536143	20040120
CA2536143 C	20091201	CA20042536143	20040120
EP1664445 A1	20060607	EP20040703661	20040120
EP1664445 A4	20091111	EP20040703661	20040120
US2005028406 AA	20050210	US20030645307	20030821
US2007272421 AA	20071129	US20060490480	20060720
US6732811 BA	20040511	US20000661518	20000913
US7063169 BB	20060620	US20030645307	20030821
US7818903 BB	20101026	US20060490480	20060720
WO05026455 A1	20050324	WO2004US01425	20040120

Priority:

US20000661518 20000913 US20030645307 20030821 WO2004US01425 20040120
US20060765417P 20060203 US20060490480 20060720

Probable Assignee: BARRY ELLIOTT

Assignee(s): (std): BARRY ELLIOTT ; ELLIOTT BARRY K ; ELLIOTT BARRY K

Inventor(s): (std): ELLIOTT BARRY K ; BARRY K ELLIOTT ; ELLIOTT BARRY K

Inventor(s): ELLIOTT BARRY

Agent(s): PHILLIPS ORMONDE FITZPATRICK; PERLEY ROBERTSON HILL AND MCDUGALL LLP; DAVID W CARRITHERS CARRITHERS LAW OFFICE PLLC; CARRITHERS LAW OFFICE PLLC; DAVID W

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR 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

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
AU2004272954 AA	20050324	LSPB	+	published / reissued	
AU2004272954 AA	20071129	LSLE	-MK1	APPLICATION LAPSED SECTION 142(2)(A) - NO REQUEST FOR EXAMINATION IN RELEVANT PERIOD	
CA2536143 AA	20060217	LSPB	+	published / reissued	
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CA2536143 AA	20170304	LSLE	-MKLA	LAPSED	EFFECTIVE DATE : 20170120
CA2536143 C	20091201	LSGT	+	granted / extensions (spc, cpc, pte)	
CA2536143 C	20240120	PEXP		Calculated Patent Term Expiry	
EP1664445 A1	20060607	LSPB	+	published / reissued	

EP1664445 A1	20060607	LSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 20060321
EP1664445 A4	20091111	LSES	+A4	SUPPLEMENTARY SEARCH REPORT DRAWN UP AND DESPATCHED	EFFECTIVE DATE : 20090910
EP1664445 A4	20091118	LSWD	-18W	APPLICATION WITHDRAWN	EFFECTIVE DATE : 20091012
US2005028406 AA	20050210	LSPB	+	published / reissued	
US2005028406 AA	20060531	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US2007272421 AA	20071129	LSPB	+	published / reissued	
US2007272421 AA	20101006	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US6732811 BA	20040511	LSGT	+	granted / extensions (spc, cpc, pte)	
US6732811 BA	20080511	LSRE	+REIN	REINSTATEMENT AFTER MAINTENANCE FEE PAYMENT CONFIRMED	
US6732811 BA	20080608	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US6732811 BA	20080701	LSLE	-FP	EXPIRED DUE TO FAILURE TO PAY MAINTENANCE FEE	EFFECTIVE DATE : 20080511
US6732811 BA	20080818	LSGT	PAT1	Patented Case	
US6732811 BA	20080818	LSRE	+PRDP	PATENT REINSTATED DUE TO THE ACCEPTANCE OF A LATE MAINTENANCE FEE	EFFECTIVE DATE : 20080818
US6732811 BA	20080818	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US6732811 BA	20111114	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US6732811 BA	20151112	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 12
US6732811 BA	20200913	PEXP		Calculated Patent Term Expiry	
US7063169 BB	20060620	LSGT	+	granted / extensions (spc, cpc, pte)	
US7063169 BB	20060531	LSGT	PAT1	Patented Case	
US7063169 BB	20100614	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US7063169 BB	20131218	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US7063169 BB	20180129	LSFE	FEPP	FEE PAYMENT PROCEDURE	TEXT : MAINTENANCE FEE REMINDER MAILED (ORIGINAL EVENT CODE: REM.)
US7063169 BB	20180518	LSFE	FEPP	FEE PAYMENT PROCEDURE	TEXT : ENTITY STATUS SET TO MICRO (ORIGINAL EVENT CODE: MICR)
US7063169 BB	20180518	LSFE	FEPP	FEE PAYMENT PROCEDURE	TEXT : SURCHARGE FOR LATE PAYMENT, MICRO ENTITY (ORIGINAL EVENT CODE: M3556)
US7063169 BB	20180518	LSFE	+MAFP	MAINTENANCE FEE PAYMENT	YEAR OF FEE PAYMENT : 12
US7063169 BB	20230915	PEXP		Calculated Patent Term Expiry (PTA 25 days and a terminal disclaimer has been filed)	
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US7818903 BB	20101006	LSGT	PAT1	Patented Case	
US7818903 BB	20140428	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4

US7818903 BB	20180611	LSFE	FEPP	FEE PAYMENT PROCEDURE	TEXT : MAINTENANCE FEE REMINDER MAILED (ORIGINAL EVENT CODE: REM.)
US7818903 BB	20181017	LSFE	FEPP	FEE PAYMENT PROCEDURE	TEXT : 7.5 YR SURCHARGE - LATE PMT W/IN 6 MO, SMALL ENTITY (ORIGINAL EVENT CODE: M2555); ENTITY STATUS OF PATENT OWNER: SMALL ENTITY
US7818903 BB	20181017	LSFE	+MAFP	MAINTENANCE FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US7818903 BB	20290620	PEXP		Calculated Patent Term Expiry (PTA 1066 days and a terminal disclaimer has been filed)	
WO05026455 A1	20050324	LSPB	+	published / reissued	
WO05026455 A1	20060217	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 2536143 COUNTRY OF REF DOCUMENT : CA
WO05026455 A1	20060221	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 2004272954 COUNTRY OF REF DOCUMENT : AU
WO05026455 A1	20060316	LSNP	ENP	ENTRY INTO THE NATIONAL PHASE IN:	REF DOCUMENT NUMBER : 2004272954 COUNTRY OF REF DOCUMENT : AU DATE OF REF DOCUMENT : 20040120 KIND CODE OF REF DOCUMENT : A DESIGNATED STATE(S) :
WO05026455 A1	20060321	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 2004703661 COUNTRY OF REF DOCUMENT : EP
WO05026455 A1	20060607	LSPB	+WWP	WIPO INFORMATION: PUBLISHED IN NATIONAL OFFICE	REF DOCUMENT NUMBER : 2004703661 COUNTRY OF REF DOCUMENT : EP
WO05026455 A1	20060720	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 11490480 COUNTRY OF REF DOCUMENT : US
WO05026455 A1	20071129	LSPB	+WWP	WIPO INFORMATION: PUBLISHED IN NATIONAL OFFICE	REF DOCUMENT NUMBER : 11490480 COUNTRY OF REF DOCUMENT : US

Title: NUMBER OF NEW AND UNIQUE MANUFACTURING AND ASSEMBLY METHODS AND PROCESSES TO COST EFFECTIVELY REFIT AND MARKET LEGACY IMPLEMENTS LIKE "THE GILHOLIE" PRESENTLY NAMES "THE WILI GRIP" TM

Abstract: The invention: involves a unique set of mass production process and evaluation tools to reappraise intricate otherwise costly products to produce or reproduce and manufacture them best in a high cost of living society and low cost of living society. The techniques described here are to specifically bring back a legacy kitchen aids tools, products and other such devices like (The Gilhoolie renamed the WiliGrip(TM)). "The Wili Grip" is a perfect example of intricate craftsmanship that was possible to make when labor was inexpensive in the United States and other industrial countries but has become more difficult to reproduce or compete without inexpensive labor. The invention teaches a variety of metal fabrication production techniques designed to provide technically advanced nations like the US a competitive set of modalities to maintain jobs domestically and compete with low cost labor operations world wide. The production technologies are not limited to aiding industrialized countries, but also presented to teach world leaders, commercial interests and societies how to plan the best use of their assets and technology to proficiently develop competitive commercial product progressively and reduce negative environmental and socio economic impacts, due to gaps in production technology.

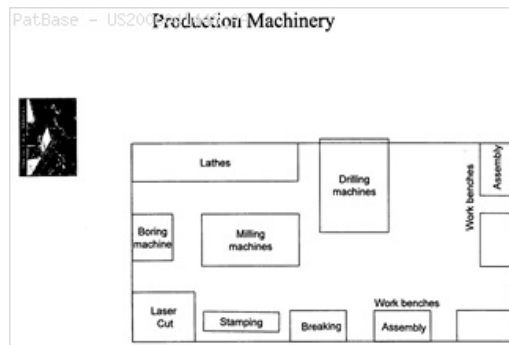
Classifications:

International (IPC 8-9): G06Q99/00 (Advanced/Invention);
G06Q99/00 (Core/Invention)

CPC: G06Q90/00 G06Q10/101 G06Q10/103

European: G06Q10/101 G06Q10/103 G06Q90/00

US: 705/1 705/300 705/300S 705/301 705/301P 705/7



Family:

Publication number	Publication date	Application number	Application date
US2006041448 AA	20060223	US20050204160	20050816

Priority:

US20040602861P 20040820 US20050204160 20050816

Probable Assignee: PATTERSON ROBBIE L

Assignee(s): (std): PATTERSON ROBBIE L ; STEPHENS RICHARD L JR ; WALKER RICHARD C

Inventor(s): (std): PATTERSON ROBBIE L ; STEPHENS RICHARD L JR ; WALKER RICHARD C

Inventor(s): STEPHENS RICHARD ; PATTERSON ROBBIE ; WALKER RICHARD ; PATTERSON ROBBIE LYNNE ; STEPHENS RICHARD LEWIS ; STEPHENS RICHARD LJR

Agent(s): RICHARD WALKER

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
US2006041448 AA	20060223	LSPB	+	published / reissued	
US2006041448 AA	20100615	LSWD	-ABD3	Abandoned -- Failure to Respond to an Office Action	

Title: **HOSE COUPLING** SYSTEM

Abstract: A **hose coupling** system includes a housing, a valve plug, and a locking mechanism. The housing has an inlet and an outlet, and a flow path between the inlet and the outlet. The valve plug is positioned within the housing along the flow path, and is rotatable between a closed orientation and an opened orientation. The closed orientation blocks the flow path and the opened orientation unblocks the flow path. The locking mechanism is designed to releasably fasten an instrument to the housing, where the locking mechanism is adjustable between a locked position and an unlocked position. The locking mechanism and the valve plug are coupled such that adjusting the locking mechanism to the unlocked position rotates the valve plug to the closed orientation.

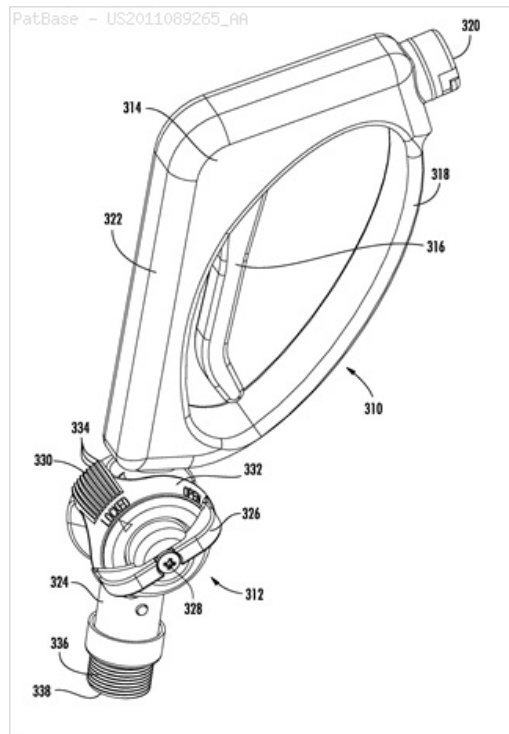
Classifications:

International (IPC 8-9): B05B9/01 F16L37/28 (Advanced/Invention)

CPC: F16L37/47

European: F16L37/47

US: 239/526 239/526P 251/149.9 251/149.900S



Family:

Publication number	Publication date	Application number	Application date
US2011089265 AA	20110421	US20090582493	20091020

Priority:

US20090582493 20091020

Probable Assignee: BRIGGS AND STRATTON CORP

Assignee(s): (std): BRIGGS AND STRATTON CORP

Inventor(s): (std): CROUCH STEVEN C ; GILPATRICK RICHARD J

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
US2011089265 AA	20110421	LSPB	+	published / reissued	
US2011089265 AA	20091028	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : BRIGGS & STRATTON CORPORATION, WISCONSIN OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:GILPATRICK, RICHARD J.; CROUCH, STEVEN C.; REEL/FRAME:023437/0900 EFFECTIVE DATE : 20091020
US2011089265 AA	20130729	LSWD	-ABD3	Abandoned -- Failure to Respond to an Office Action	

Title: HYPOXIA TRAINING DEVICE

Abstract: The present invention includes a device for hypoxia training comprising: one or more electrochemical cells each comprising: a cathode and an anode separated by a proton exchange membrane, each of the anode and cathode in communication with an input and an output, wherein the input of the cathode is in fluid communication with ambient air, and wherein the input of the anode is in fluid communication with a source of liquid water; a power supply connected to the one or more electrochemical cells; and a mask in fluid communication with the output from the cathode of the one or more electrochemical cells, wherein oxygen is removed from the ambient air during contact with the cathode when hydrogen ions separated from liquid water by a catalyst on the anode convert oxygen in the ambient air into water.

Classifications:

International (IPC 8-9): A61M16/00 A61M16/06 A61M16/10 A61M16/20 A62B7/14 A63B23/18 C01B13/02 C25B1/04 G09B9/00 G09B9/08 G09B9/16 (Advanced/Invention); A61M16/06 H01M8/04089 (Advanced/Non-invention)

CPC: A61M16/10 A63B23/18 A62B7/14 A61M16/0045 A63B2208/05

A63B2213/006 A61M16/22 A61M2016/1025 A61M2202/0208

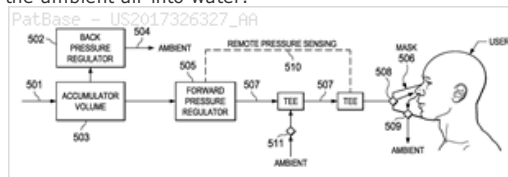
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A61M16/202 A61M2205/3344 G09B9/165 H01M8/04089 A61M16/101

C25B1/04 A61M16/106 A61M16/1085 A61M16/12 A61M16/16 A61M16/209 A61M2016/0027 A61M2016/003 A61M2205/502

A61M2205/52 A61M2230/10 A61M2230/205 A61M2230/42

US: 1/1 429/407 482/13

**Family:**

Publication number	Publication date	Application number	Application date
AU2017263002 AA	20180927	AU20170263002	20170502
AU2017263002 BB	20190829	AU20170263002	20170502
CA3018631 AA	20180920	CA20173018631	20170502
EP3454929 A1	20190320	EP20170796576	20170502
EP3454929 A4	20190703	EP20170796576	20170502
GB201817260 A0	20181205	GB20180017260	20170502
GB2019000659 A0	20190306	GB20190000659	20170502
GB2566372 A1	20190313	GB20180017260	20170502
GB2567572 A1	20190417	GB20190000659	20170502
GB2567572 A8	20190501	GB20190000659	20170502
US2017326327 AA	20171116	US20170584887	20170502
US2018296877 AA	20181018	US20180975301	20180509
WO17196588 A1	20171116	WO2017US30634	20170502

Priority:

US20160336426P 20160513 GB20180017260 20170502 US20170584887 20170502
 WO2017US30634 20170502 US20180975301 20180509

Probable Assignee: LYNNTech INC

Assignee(s): (std): LYNNTech INC

Assignee(s): REEH JONATHAN ; WAJE MAHESH ; KESMEZ MEHMET ; SALINAS CARLOS ; VARUGHESE JIBI ; TEURMAN CORY ; NETHERLAND JAMES ; ZBRANEK JOHN ; BALASUBRAMANIAN ASHWIN ; COCKING SETH ; DEPARTMENT OF NAVY ; HITCHENS GEOFFREY DUNCAN

Inventor(s): (std): NETHERLAND JAMES ; WAJE MAHESH ; BALASUBRAMANIAN ASHWIN ; REEH JONATHAN ; VARUGHESE JIBI ; KESMEZ MEHMET ; COCKING SETH ; TEURMAN CORY ; ZBRANEK JOHN ; SALINAS CARLOS ; HITCHENS GEOFFREY DUNCAN ; ASHWIN BALASUBRAMANIAN ; CARLOS SALINAS ; MEHMET KESMEZ ; JOHN ZBRANEK ; GEOFFREY DUNCAN HITCHENS ; MAHESH WAJE ; CORY TEURMAN ; JAMES NETHERLAND ; SETH COCKING ; JONATHAN REEH ; JIBI VARUGHESE

Agent(s): PIZZEYS PATENT AND TRADE MARK ATTORNEYS PTY LTD; AVENTUM IP LAW LLP; SONN AND PARTNER PATENTANWALTE; CHALKER DANIEL J ET AL

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 DJ 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 IR IS IT JP KE KG KH KM KN KP KR KW KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA 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

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
AU2017263002 AA	20180927	LSPB	+	published / reissued	
AU2017263002 BB	20190829	LSGT	+	granted / extensions (spc, cpc, pte)	
AU2017263002 BB	20370502	PEXP		Calculated Patent Term Expiry	
CA3018631 AA	20180920	LSPB	+	published / reissued	
CA3018631 AA	20181005	LSES	+EEER	EXAMINATION	EFFECTIVE DATE : 20180920

EP3454929 A1	20190320	LSPB	+	REQUEST published / reissued	
EP3454929 A1	20190320	LSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 20181213
EP3454929 A4	20190703	LSES	+A4	SUPPLEMENTARY SEARCH REPORT DRAWN UP AND DESPATCHED	EFFECTIVE DATE : 20190603
GB2566372 A1	20190313	LSPB	+	published / reissued	
GB2567572 A1	20190417	LSPB	+	published / reissued	
US2017326327 AA	20171116	LSPB	+	published / reissued	
US2017326327 AA	20170811	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : LYNNTECH, INC., TEXAS OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:REEH, JONATHAN; WAJE, MAHESH; KESMEZ, MEHMET; AND OTHERS; SIGNING DATES FROM 20170726 TO 20170810; REEL/FRAME:043267/0683
US2017326327 AA	20190116	LSES	NFA1	Non Final Action Mailed	
US2017326327 AA	20190501	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : DEPARTMENT OF THE NAVY, MARYLAND OLDPARTY : CONFIRMATORY LICENSE; ASSIGNOR:LYNNTECH INC.; REEL/FRAME:049045/0532 EFFECTIVE DATE : 20181010
US2017326327 AA	20190605	LSES	ADV1	Advisory Action Mailed	
US2018296877 AA	20181018	LSPB	+	published / reissued	
US2018296877 AA	20180509	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : LYNNTECH, INC., TEXAS OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:REEH, JONATHAN; WAJE, MAHESH; KESMEZ, MEHMET; AND OTHERS; SIGNING DATES FROM 20170726 TO 20170810; REEL/FRAME:045756/0418
WO17196588 A1	20171116	LSPB	+	published / reissued	
WO17196588 A1	20180920	LSNP	ENP	ENTRY INTO THE NATIONAL PHASE IN:	REF DOCUMENT NUMBER : 3018631 COUNTRY OF REF DOCUMENT : CA
WO17196588 A1	20180927	LSNP	ENP	ENTRY INTO THE NATIONAL PHASE IN:	REF DOCUMENT NUMBER : 2017263002 COUNTRY OF REF DOCUMENT : AU DATE OF REF DOCUMENT : 20170502 KIND CODE OF REF DOCUMENT : A DESIGNATED STATE(S) :
WO17196588 A1	20181023	LSNP	ENP	ENTRY INTO THE NATIONAL PHASE IN:	TEXT : PCT FILING DATE = 20170502 REF DOCUMENT NUMBER : 201817260 COUNTRY OF REF DOCUMENT : GB KIND CODE OF REF DOCUMENT : A DESIGNATED STATE(S) :
WO17196588 A1	20181023	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 1817260.1 COUNTRY OF REF DOCUMENT : GB
WO17196588 A1	20181114	LSNE	NENP	NON-ENTRY INTO THE NATIONAL PHASE IN:	REF COUNTRY CODE : DE
WO17196588 A1	20181221	LSNP	ENP	ENTRY INTO THE NATIONAL PHASE IN:	REF DOCUMENT NUMBER : 2017796576 COUNTRY OF REF DOCUMENT : EP EFFECTIVE DATE : 20181213

Title: KEY FOR GAS CYLINDERS

Abstract: There is a key for use with pressurized gas cylinders. The key includes a sleeve configured to fit over a lever arm of a gas cylinder. The key includes a handle extending from the sleeve, and having a body. The handle includes a first slot and a second slot extending through the body of the handle and configured to fit over a valve toggle of a gas cylinder. The handle includes a washer storage device extending substantially orthogonally from the body of the handle. The handle includes a flange coupled to an end of the washer storage device, opposite the body. The handle also includes a recess portion disposed about a base of the washer storage device of the handle and sized and shaped to receive a plurality of gas cylinder washers.

Classifications:

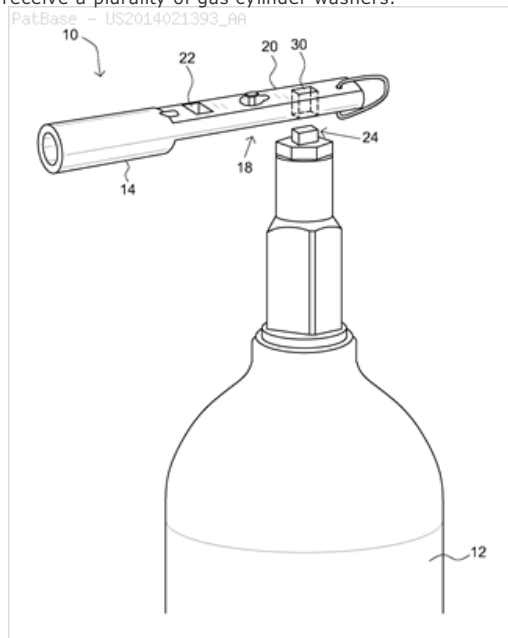
International (IPC 8-9): F16K31/00 F16K31/60 (Advanced/Invention)

CPC: F17C2201/0109 F17C2201/058 F17C2205/0188 F17C2205/0308

F17C2205/0329 F17C2205/0394 F17C2221/011 F17C2223/0123

F17C2223/036 F17C2270/025 F17C2270/05 F17C2270/0781 F16K31/60

US: 251/292

**Family:**

Publication number	Publication date	Application number	Application date
US2014021393 AA	20140123	US20120555380	20120723
US8939433 BB	20150127	US20120555380	20120723

Priority:

US20120555380 20120723

Probable Assignee:

SANCHEZ JR OSVALDO

Assignee(s): (std):

SANCHEZ JR OSVALDO

Inventor(s): (std):

SANCHEZ JR OSVALDO

Agent(s):

DANNY Y H; JP WEBB; JASON P

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
US2014021393 AA	20140123	LSPB	+	published / reissued	
US8939433 BB	20150127	LSGT	+	granted / extensions (spc, cpc, pte)	
US8939433 BB	20150107	LSGT	PAT1	Patented Case	
US8939433 BB	20180917	LSFE	FEPP	FEE PAYMENT PROCEDURE	TEXT : MAINTENANCE FEE REMINDER MAILED (ORIGINAL EVENT CODE: REM.); ENTITY STATUS OF PATENT OWNER: MICROENTITY
US8939433 BB	20190304	LSLE	-LAPS	LAPSE FOR FAILURE TO PAY MAINTENANCE FEES	TEXT : PATENT EXPIRED FOR FAILURE TO PAY MAINTENANCE FEES (ORIGINAL EVENT CODE: EXP.); ENTITY STATUS OF PATENT OWNER: MICROENTITY
US8939433 BB	20190304	LSLE	-PEX1	Patent Expired Due to NonPayment of Maintenance Fees Under 37 CFR 1.362	

US8939433 BB	20190304	LSLE	-STCH	INFORMATION ON STATUS: PATENT DISCONTINUATION	TEXT : PATENT EXPIRED DUE TO NONPAYMENT OF MAINTENANCE FEES UNDER 37 CFR 1.362
US8939433 BB	20190326	LSLE	-FP	EXPIRED DUE TO FAILURE TO PAY MAINTENANCE FEE	EFFECTIVE DATE : 20190127
US8939433 BB	20320723	PEXP		Calculated Patent Term Expiry	

Title: MONITORING OF CLOSED CIRCUIT LIQUID COOLING SYSTEMS PARTICULARLY IN INTERNAL COMBUSTION ENGINES

Abstract: Early stage detection of engine liquid cooling problems is provided with temperature, pressure and other sensors and associated logic circuits configured for detecting alarm conditions including below normal static coolant pressure coupled with an elevated coolant temperature, above normal static coolant pressure, below normal coolant pump pressure condition, coolant voids due to coolant loss or boiling, and external steam or liquid leakage from the cooling system. A gauge displays the difference between coolant pump output pressure and static coolant pressure.

Classifications:

International (IPC 8-9): F01P3/02 F02B61/04 F02B69/00 F02B75/24 F02F1/36 (Advanced/Invention);

F01P11/04 F01P7/16 F02B75/02 F02B75/18 (Advanced/Non-invention);

F01P3/02 F02B61/00 F02B69/00 F02B75/00 (Core/Invention);

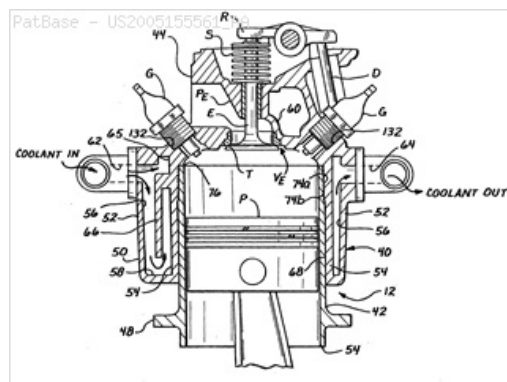
F01P11/00 F01P7/14 F02B75/02 (Core/Non-invention)

International (IPC 1-7): F01P1/04 F02F1/10

CPC: F01P3/02 F01P7/16 F01P11/04 F01P2031/22 F02B61/04 F02B69/00 F02B75/243 F02B2075/027 F02B2075/1816

European: F01P3/02 F02B61/04 F02B69/00 F02B75/24B R01P11/04 R01P31/22 R01P7/16 R02B75/02S4 R02B75/18C4

US: 123/41.12 123/41.44 123/41.47 123/41.79 123/41.81 123/41.810P 123/55.2 123/552 340/449 701/29 701/33.9 73/114.68 73/117.3



Family:

Publication number	Publication date	Application number	Application date
US2005155561 AA	20050721	US20050034129	20050112
US6408803 BA	20020625	US20000693757	20001019
US7069883 BB	20060704	US20050034129	20050112

Priority:

US20000693757 20001019 US20020165271 20020610 US20030386948 20030311
US20050034129 20050112

Probable Assignee:

ATKINS ROBERT M

Assignee(s): (std):

ATKINS ROBERT M

Inventor(s): (std):

ATKINS ROBERT M

Inventor(s):

ATKINS ROBERT

Agent(s):

LAW OFFICES OF NATAN EPSTEIN

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
US2005155561 AA	20050721	LSPB	+	published / reissued	
US2005155561 AA	20060614	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US6408803 BA	20020625	LSGT	+	granted / extensions (spc, cpc, pte)	
US6408803 BA	20020606	LSGT	PAT1	Patented Case	
US6408803 BA	20020606	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US6408803 BA	20050919	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US6408803 BA	20091127	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US6408803 BA	20131003	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 12
US6408803 BA	20201019	PEXP		Calculated Patent Term Expiry	
US7069883 BB	20060704	LSGT	+	granted / extensions (spc, cpc, pte)	
US7069883 BB	20060614	LSGT	PAT1	Patented Case	
US7069883 BB	20100104	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4

US7069883 BB	20130808	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US7069883 BB	20180212	LSFE	FEPP	FEE PAYMENT PROCEDURE	TEXT : MAINTENANCE FEE REMINDER MAILED (ORIGINAL EVENT CODE: REM.)
US7069883 BB	20180703	LSFE	FEPP	FEE PAYMENT PROCEDURE	TEXT : 11.5 YR SURCHARGE- LATE PMT W/IN 6 MO, SMALL ENTITY (ORIGINAL EVENT CODE: M2556)
US7069883 BB	20180703	LSFE	+MAFP	MAINTENANCE FEE PAYMENT	YEAR OF FEE PAYMENT : 12
US7069883 BB	20250112	PEXP		Calculated Patent Term Expiry	

Title: HYDRAULICALLY DRIVEN CONVEYOR

Abstract: An residual feed pick-up system for poultry farming utilizes a tractor and trailer combination in which the blower for a pneumatic conveyor is mounted on the trailer. The hydraulic motor that drives the blower is also located on the trailer. Feed pick-up can be effected by the trailer accompanied by a standard over-the-road tractor equipped with a conventional and economically available hydraulic power takeoff unit commonly known as a PTO. The feed supplier to the poultry farm can use any of such commonly configured tractors in its normal operating fleet combined with the trailer having the onboard hydraulically driven blower for low-volume, residual feed pick-up service, thereby increasing reliability and availability of the service at advantageously low cost.

Classifications:

International (IPC 8-9): B60P1/60 B65F1/00

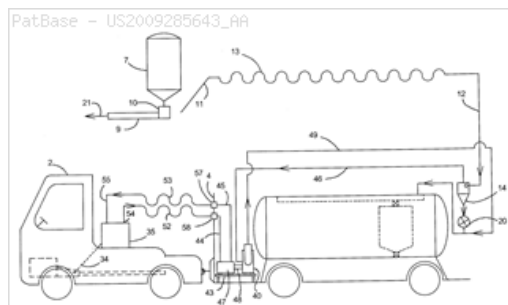
B65G53/04 (Advanced/Invention);

B60P1/00 B65G53/04 (Core/Invention)

CPC: B60P1/60 B65G53/24

European: B60P1/60 B65G53/24

US: 406/153 406/40 406/40S 406/41 406/41P 406/42 414/507



Family:

Publication number	Publication date	Application number	Application date
US2009285643 AA	20091119	US20060612460	20061218
US7891930 BB	20110222	US20060612460	20061218

Priority:

US20060759414P 20060117

US20060612460 20061218

Probable Assignee:

ULTRA TRANSFER SYSTEMS LLC

Assignee(s): (std):

BROWN WILLIAM

Assignee(s):

ULTRA TRANSFER SYSTEMS LLC

Inventor(s): (std):

BROWN WILLIAM

Agent(s):

JEFFREY C LEW; JEFFREY C

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
US2009285643 AA	20091119	LSPB	+	published / reissued	
US7891930 BB	20110222	LSGT	+	granted / extensions (spc, cpc, pte)	
US7891930 BB	20110310	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : ULTRA TRANSFER SYSTEMS, LLC, DELAWARE OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:BROWN, WILLIAM; REEL/FRAME:025935/0213 EFFECTIVE DATE : 20110310
US7891930 BB	20150222	LSLE	-LAPS	LAPSE FOR FAILURE TO PAY MAINTENANCE FEES	
US7891930 BB	20150222	LSRE	+REIN	REINSTATEMENT AFTER MAINTENANCE FEE PAYMENT CONFIRMED	
US7891930 BB	20150414	LSLE	-FP	EXPIRED DUE TO FAILURE TO PAY MAINTENANCE FEE	EFFECTIVE DATE : 20150222
US7891930 BB	20150518	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US7891930 BB	20150518	LSGT	PAT1	Patented Case	
US7891930 BB	20150518	LSRE	+PRDP	PATENT REINSTATED DUE TO THE ACCEPTANCE OF A LATE MAINTENANCE	EFFECTIVE DATE : 20150518

FEE					
US7891930 BB	20150518	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US7891930 BB	20190401	LSLE	-LAPS	LAPSE FOR FAILURE TO PAY MAINTENANCE FEES	TEXT : PATENT EXPIRED FOR FAILURE TO PAY MAINTENANCE FEES (ORIGINAL EVENT CODE: EXP.); ENTITY STATUS OF PATENT OWNER: SMALL ENTITY
US7891930 BB	20190401	LSLE	-PEX1	Patent Expired Due to NonPayment of Maintenance Fees Under 37 CFR 1.362	
US7891930 BB	20190401	LSLE	-STCH	INFORMATION ON STATUS: PATENT DISCONTINUATION	TEXT : PATENT EXPIRED DUE TO NONPAYMENT OF MAINTENANCE FEES UNDER 37 CFR 1.362
US7891930 BB	20190423	LSLE	-FP	EXPIRED DUE TO FAILURE TO PAY MAINTENANCE FEE	EFFECTIVE DATE : 20190222
US7891930 BB	20281231	PEXP		Calculated Patent Term Expiry (PTA 744 days)	

Abstract: Source: DE9208796U1 [DE] (Claim 1) 1. Strahlduese fuer Hochdruckreinigungsgeraete oder andere Geraete mit unter hohem Druck austretendem Fluessigkeitsstrahl, mit einem druckfesten Gehaeuse (7), mit einem Wassereintritt (8) und einem Wasseraustritt (9) und einer dem Wasseraustritt (9) zugeordneten Hochdruckduese (10) mit einem Duesenkanal (11) mit vorzugsweise kreisfoermigem Querschnitt, dadurch gekennzeichnet, dass im Ge- hause (7) vor der Hochdruckduese (10) ein bewegliches Verschlusselement (25) angeordnet ist, das die Hochdruckduese (10) von innen her verschliesst, so- bald die Fluessigkeitsstroemung durch die Hochdruckduese (10) aufhoert oder eine untere Grenze unterschreitet.

Machine translation: (Claim 1) 1 Jet nozzle for **high pressure** cleaning device or other devices with leaking under **high pressure** Fluessigkeitsstrahl, with a flameproof enclosures (7), with a water inlet (8) and a water outlet (9), and a water outlet (9) associated with **high pressure** (10) with a Duesenkanal (11) preferably having a circular cross section, characterized in that arranged in the Ge-home (7) before the **high pressure** nozzle (10), a movable closure element (25) which closes the **high pressure** nozzle (10) from the inside, as soon as the Fluessigkeitsstroemung by **high-pressure** nozzle (10) stops or a lower limit below.

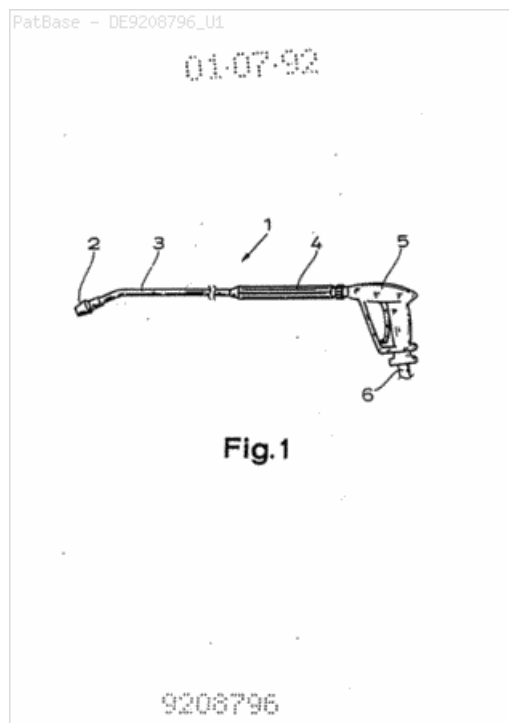
Classifications:

International (IPC 8-9): B05B1/30 (Advanced/Invention);
B05B1/30 (Core/Invention)

International (IPC 1-7): B05B1/00 B05B12/00 B05B15/02 B05B9/00

CPC: B05B1/306 B05B1/3006

European: B05B1/30A B05B1/30D1A



Family:

Publication number	Publication date	Application number	Application date
DE9208796 U1	19921119	DE19920008796U	19920701

Priority:

DE19920008796U 19920701

Probable Assignee: SUTTNER GMBH AND CO 4800 BIELEFELD DE KG

Assignee(s): SUTTNER GMBH AND CO 4800 BIELEFELD DE KG ; SUTTNER GMBH AND CO KG 4800 BIELEFELD DE

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Patent	Date recorded	Event group	Code	Event	Details
DE9208796 U1	19921119	LSGT	+	granted / extensions (spc, cpc, pte)	
DE9208796 U1	20020701	PEXP		Calculated Patent Term Expiry	

Title: MECANISME POUR ASSEMBLER ET DESASSEMBLER UN DISPOSITIF D'ACCOUPLEMENT POUR TUYAUX MECHANISM TO ASSEMBLE AND DISASSEMBLE DEVICE CLUTCH PIPE (Machine translation)

Abstract: Source: FR1496923A [FR] [Source: Claim 1] 1 Il comprend: un organe dont une partie est serree autour du manchon du coupleur afin de supporter la partie femelle de celui-ci, cet organe etant agence pour menager un point d'articulation pour un levier espace de ladite partie de serrage, et un levier monte oscillant sur cet organe autour d'un axe transversal au coupleur et pouvant venir au contact avec la partie femelle de celui-ci afin de la deplacer par rapport au manchon a l'encon tre de la force du ressort et pour faciliter la soi- darisation et la: separation de la partie male du coupleur; **Machine translation:** [Source: revendication 1] 1 it comprises: a body part of which is clamped around the sleeve of the coupler to support the female part thereof, said member being arranged to strike a fulcrum for a lever space of said clamping portion, and a rocking lever mounted on this body about a transverse axis to the coupler and engageable with the female portion thereof in order to move relative to the sleeve has to be encon the spring force and to facilitate and soi- darisation: separation of the male portion of the coupler;

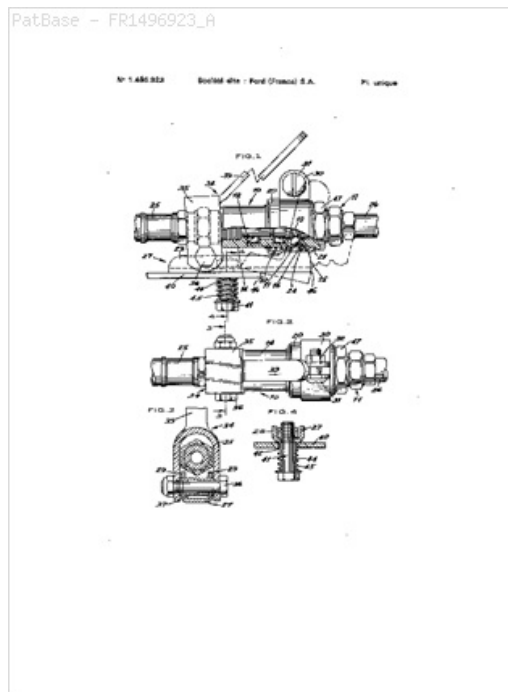
Classifications:

International (IPC 8-9): F16L37/23 (Advanced/Invention);

F16L37/00 (Core/Invention)

CPC: F16L37/23

European: F16L37/23



Family:

Publication number	Publication date	Application number	Application date
FR1496923 A	19671006	FR19660080345	19661018

Priority:

FR19660080345 19661018

Probable Assignee:

FORD FRANCE

Assignee(s): (std):

FORD FRANCE

Assignee(s):

FORD FRANCE S A

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
FR1496923 A	19671006	LSGT	+	granted / extensions (spc, cpc, pte)	
FR1496923 A	19861018	PEXP		Calculated Patent Term Expiry	

Title: Underwater emergency breathing device

Abstract: An emergency breathing device comprises: a mouthpiece; a valve body having one end receiving a **hose coupling** and one end receiving the mouthpiece, the valve body having a valve opening adjacent the mouthpiece end; a resilient seal interiorly of the valve opening; a valve having a seal engaging surface, gas pressure in the hose urging the valve into a sealing engagement with the seal; and, a valve actuator extending through the valve opening and substantially through the mouthpiece. Inward squeezing pressure exerted on the valve actuator through the mouthpiece opens the sealing engagement, allowing a breathable gas to flow from the hose into the mouthpiece. The device can be particularly adapted to be responsive to biting pressure while held in a diver's mouth and to operate right side up and upside down.

Classifications:

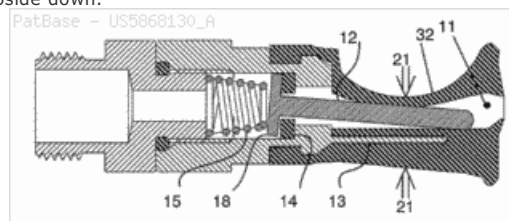
International (IPC 8-9): B63C11/18 B63C11/22 (Advanced/Invention);
B63C11/02 (Core/Invention)

International (IPC 1-7): A62B18/10

CPC: B63C11/186 B63C11/22

European: B63C11/18M B63C11/22

US: 128/201.28 128/204.26 128/205.24 128/206.29



Family:

Publication number	Publication date	Application number	Application date
US5868130 A	19990209	US19970963785	19971104

Priority:

US19970963785 19971104

Probable Assignee:

SEA TURTLE SCUBA INC

Assignee(s): (std):

SEA TURTLE SCUBA INC

Inventor(s): (std):

STIER BARRY

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
US5868130 A	19990209	LSGT	+	granted / extensions (spc, cpc, pte)	
US5868130 A	19971104	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : SEA TURTLE SCUBA, INC., FLORIDA OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:STIER, BARRY; REEL/FRAME:008880/0673 EFFECTIVE DATE : 19971103
US5868130 A	20020225	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US5868130 A	20070209	LSLE	-LAPS	LAPSE FOR FAILURE TO PAY MAINTENANCE FEES	
US5868130 A	20070314	LSLE	-PEX1	Patent Expired Due to NonPayment of Maintenance Fees Under 37 CFR 1.362	
US5868130 A	20070314	LSLE	-STCH	INFORMATION ON STATUS: PATENT DISCONTINUATION	TEXT : PATENT EXPIRED DUE TO NONPAYMENT OF MAINTENANCE FEES UNDER 37 CFR 1.362
US5868130 A	20070410	LSLE	-FP	EXPIRED DUE TO FAILURE TO PAY MAINTENANCE FEE	EFFECTIVE DATE : 20070209
US5868130 A	20171104	PEXP		Calculated Patent Term Expiry	