

Search history

Search 1: SFT=(fluid separator) (Results 1718)
Search 2: 1 and ring seal (Results 28)
Search 3: hydrocyclone (Results 10338)
Search 4: 1 and 3 (Results 39)
Search 5: 1 and piston (Results 356)
Search 6: SFT=(fluid separator) and CPC=(B04C5/22) (Results 1)
Search 7: 6 AND 3 (Results 1)
Search 8: CPC=(B04C5/22) (Results 152)
Search 9: CPC=(B04C5/28) (Results 746)
Search 10: CPC=(B04C11/00) (Results 564)
Search 11: 9 AND 10 (Results 66)

1) Family number: 31386027 (US2006112941A)

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Title: APPARATUS FOR CONTROLLING CYCLONE SEPARATORS

Abstract: Apparatus for separating oil from crankcase ventilation gases of an internal combustion engine having at least two oil separators in the form of cyclones connected in parallel and traversed by the crankcase ventilation gases. The apparatus is equipped with a control valve that divides the volumetric flow of the crankcase ventilation gases into at least two subflows, depending on the magnitude of the volumetric flow, and conducts the subflows to the at least two oil separators. A control piston releases or blocks access of the gases to additional cyclones depending on the dynamic pressure of the crankcase gas.

Classifications:

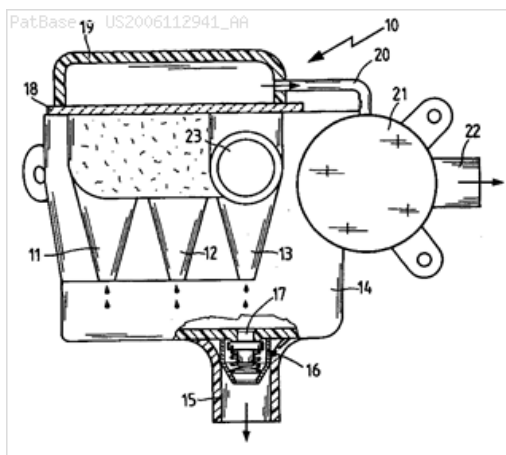
International (IPC 8-9): B04C11/00 B04C5/04 B04C5/28 F01M13/00 F01M13/04 F02M25/06 F16K11/02 (Advanced/Invention); F01M13/00 F01M13/02 (Advanced/Non-invention); B04C11/00 B04C5/00 F01M13/00 F02M25/06 (Core/Invention)

International (IPC 1-7): B04C11/00 B04C5/28 F01M13/04

CPC: B04C5/28 B04C11/00 F01M13/023 F01M13/04 F01M2013/0066 F01M2013/0427

European: B04C11/00 B04C5/28 F01M13/04 R01M13/00F4D2 R01M13/02N2B R01M13/04E2

US: 123/572 123/573 123/574



Family:

Publication number	Publication date	Application number	Application date
AT370795 E	20070915	AT20040741687T	20040601
DE10325055 A1	20041223	DE20031025055	20030602
DE502004004745 D1	20071004	DE200450004745T	20040601
EP1644124 A1	20060412	EP20040741687	20040601
EP1644124 B1	20070822	EP20040741687	20040601
JP2006526731 T2	20061124	JP20060508309T	20040601
JP4544638 B2	20100915	JP20060508309T	20040601
US2006112941 AA	20060601	US20050292080	20051202
US7406961 BB	20080805	US20050292080	20051202
WO04105955 A1	20041209	WO2004EP50972	20040601

Priority:

DE20031025055 20030602 WO2004EP50972 20040601

Probable Assignee: MANN AND HUMMEL GMBH

Assignee(s): (std): BECK ANDREAS ; HILPERT TORSTEN ; MANN AND HUMMEL GMBH ; SCHLEIDEN THOMAS ; TRAUTMANN PIUS ; WEBER ANDREAS

Inventor(s): (std): HILPERT TORSTEN ; TRAUTMANN PIUS ; SCHLEIDEN THOMAS ; BECK ANDREAS ; WEBER ANDREAS

Agent(s): SEISHIN IP PATENT FIRM PC; CROWELL AND MORING LLP, INTELLECTUAL PROPERTY GROUP; CROWELL AND MORING LLP INTELLECTUAL PROPERTY GROUP; CROWELL AND MORING LLP

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

2) Family number: 41454035 (US2008028940A)

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Title: AIR PURIFIER AND CONTROL METHOD THEREOF

Abstract: An air purifier and a control method thereof. The air purifier includes a main body having an air inlet and an air outlet, a fan mounted in the main body, rotational speed of which is changed according to a user-desired air flow rate, cyclones disposed in parallel with each other under the fan, at least one open/close unit to open and close at least one of the cyclones. The open/close unit may include a valve member to open and close an outflow pipe of the cyclone, and a stepping motor to rotate the valve member. An anemometer is mounted to at least one of the cyclones. Accordingly, since the air purifier can measure a speed of air flow in the cyclone and correspondingly change the operating number of the dust-collecting cyclones in an open state, the air purifier can achieve a predetermined dust-collecting performance even when the speed of the air flow in the cyclone is reduced.

Classifications:**International (IPC 8-9):** B01D45/12 B01D46/00 B01D50/00

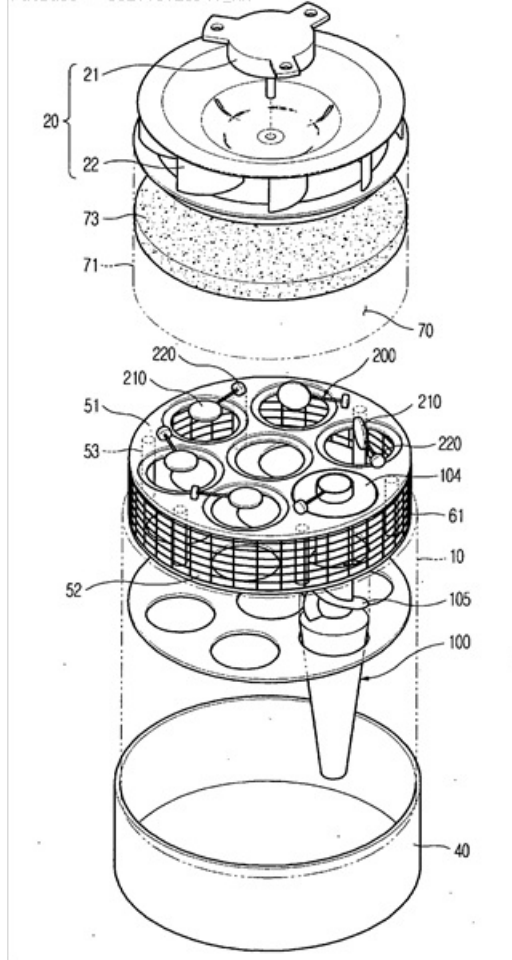
B04C5/28 F24F3/16 (Advanced/Invention);

B01D45/12 B01D46/00 (Advanced/Non-invention);

B01D45/12 B01D46/00 B04C5/00 (Core/Invention)

CPC: B01D45/16 B04C5/28 B04C9/00 B04C11/00 B04C2009/005**European:** B01D45/16 B04C11/00 B04C5/28 B04C9/00 L04C9/00F**US:** 55/345 55/345S 96/417 96/417P

PatBase - US2008028940_AA

**Family:**

Publication number	Publication date	Application number	Application date
■ CN101121155 A	20080213	CN200710001335	20070110
■ JP2008036621 A2	20080221	JP20070009410	20070118
■ KR20080013175 A	20080213	KR20060074327	20060807
■ US2008028940 AA	20080207	US20060643796	20061222

Priority:

KR20060074327 20060807

Probable Assignee: SAMSUNG ELECTRONICS CO LTD**Assignee(s):** (std): SAMSUNG ELECTRONICS CO LTD**Assignee(s):** SAMSUNG ELECTRONICS CO**Inventor(s):** (std): LEE JAI KWON ; HAN JAE OH ; RI ZAIKEN ; KWON LEE JAI ; OH HAN JAE**Agent(s):** STANZIONE AND KIM LLP**3) Family number: 55475067** (US2014001117A)

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Title: JOINT SUPPORT SYSTEM FOR HYDROCYCLONE LINER

Abstract: A system includes a hydrocyclone liner. The hydrocyclone liner includes a head section having a fluid inlet and an overflow outlet. The hydrocyclone liner also includes a separation section having an underflow outlet and a first sidewall. A diameter of the separation section of an outer surface of the first sidewall is constant along a length of the outer surface of the first sidewall. The head section and the separation section are joined together via a bond at an interface between the head section and the separation section. The hydrocyclone liner includes a sleeve disposed about at least a portion of the head section, the separation section, and the interface. The sleeve is configured to hold the head section and the separation

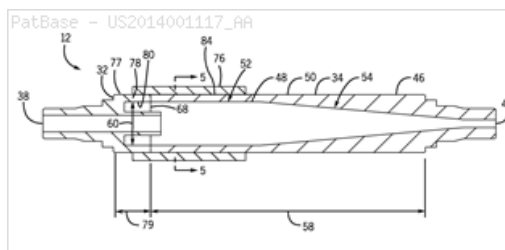
section together if the bond fails.

Classifications:

International (IPC 8-9): B01D21/26 B01D29/11 B04C11/00
B04C3/00 B04C3/04 B04C5/081 B04C5/085 B04C5/13 B04C5/14
B04C5/28 B32B37/14 (Advanced/Invention)

CPC: B01D29/111 B04C5/081 B04C5/085 B04C5/13 B04C5/14
B04C5/28 B04C11/00 B04C3/00 B04C3/04 B01D21/267
B04C2003/006 B01D29/11

US: 1/1 156/293 156/86 210/512.1 210/512.2



Family:

Publication number	Publication date	Application number	Application date
GB201419549 A0	20141217	GB20140019549	20130328
GB2515711 A1	20141231	GB20140019549	20130328
GB2515711 B2	20161228	GB20140019549	20130328
US2014001117 AA	20140102	US20120536959	20120628
US2016038953 AA	20160211	US20150886989	20151019
US9162164 BB	20151020	US20120536959	20120628
US9573141 BB	20170221	US20150886989	20151019
WO14003863 A1	20140103	WO2013US34431	20130328

Priority:

US20120536959 20120628 WO2013US34431 20130328 US20150886989 20151019

Probable Assignee: CAMERON INT CORP

Assignee(s): (std): ABRAHAM NIGEL HUGH ; CAMERON INT CORP ; KINGSLEY MICHAEL JOHN

Inventor(s): (std): KINGSLEY MICHAEL JOHN ; ABRAHAM NIGEL HUGH ; MICHAEL JOHN KINGSLEY ; NIGEL HUGH ABRAHAM

Agent(s): FLETCHER YODER PC; SWANSON TAIT R 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 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

4) Family number: 73876070 (CN109569903A)

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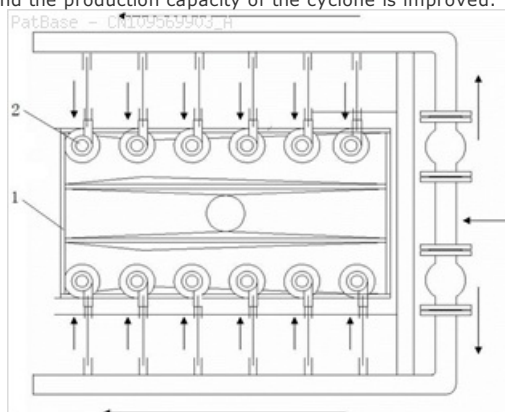
Title: CYCLONE CONE INLET STRUCTURE OF CYCLONE

Abstract: The invention discloses a cyclone cone inlet structure of a cyclone in the field of chemical equipment. The structure comprises a plurality of cyclone cones connected with a cyclone main body; an automatic ball valve and a pressure sensor are arranged at an inlet of each cyclone cone, wherein the automatic ball valve controls the opening degree of the valve through signals transmitted by the pressure sensor, and an inlet end of the automatic ball valve is further provided with a manual ball valve. The structure has the beneficial effects that one automatic ball valve, one pressure sensor and one manual ball valve are arranged at the inlet of each cyclone cone, each pressure sensor is utilized for controlling the opening and closing of the corresponding automatic ball valve, so that the feeding pressure of each cyclone cone is kept consistent and constant, and the grading effect of the cyclone is improved; and the manual ball valves are arranged, so that independent operation of cleaning of each cyclone cone is realized, and the production capacity of the cyclone is improved.

Classifications:

International (IPC 8-9): B04C11/00 B04C5/04
B04C5/28 (Advanced/Invention)

CPC: B04C5/28 B04C5/04 B04C11/00



Family:

Publication number	Publication date	Application number	Application date
CN109569903 A	20190405	CN201811582861	20181224

Priority:

CN201811582861 20181224

Probable Assignee: CHONGQING TITANIUM IND CO LTD OF PANGANG GROUP

Assignee(s): (std): CHONGQING TITANIUM IND CO LTD OF PANGANG GROUP

Assignee(s): PANZHILUA IRON AND STEEL GROUP CHONGQING TITANIUM IND CO LTD ; CHONGQING TITANIUM IND CO

Inventor(s): (std): ZHAO BEIDONG ; LI XUNYONG ; YU HUI ; CAO LEI ; GAN WENJUN

Title: CENTRIFUGAL DUST SEPARATORS

Abstract: 736,320. Centrifugal separators. HOWDEN and CO., Ltd., J. Oct. 2, 1953 [Oct. 8, 1952; Sept. 21, 1953], Nos. 25263/52 and 25942/53. Class 23. In a multi-cell dust separator having return flow type cells, fine dust deposited in the gas outlet tubes of the cells is removed by the scavenging action of coarse dust supplied through the inlets of the cells and caused to flow out through the gas outlet tubes by lowering the separating efficiency of the cells. In the construction shown in Fig. 1 gas is admitted to the separator 20 by an inlet duct 23, dust from the cells 28 is collected in a common hopper 40, and clean gas from the outlet tubes 32 is discharged by an outlet duct 24. The outlet duct has a partition 34 and dampers 37, 38 which are open during normal operation. To remove fine dust from the gas outlet tubes of the cells which discharge into the part 36 of the outlet duct, the damper 37 controlling the part 35 of the outlet duct is closed. The gas entering the cells normally discharging into the port 35 passes out through the dust outlets 30 into the hopper to enter the dust outlets of the cells whose gas outlet tubes discharge into the part 36. The efficiency of these latter cells is thereby decreased so that coarse dust particles pass through their outlet tubes removing the fine dust deposit. The gas outlet tubes of cells which discharge into the part 35 are cleaned by opening the damper 37 and closing the damper 38. In the modification shown in Figs. 9, 10 the efficiency of separation is maintained during cleaning. The separator comprises three groups of cells each group having an outlet chamber forming part of the outlet duct 24. Each outlet chamber is connected by branch ducts to the inlet of a fan 78 discharging into the inlet duct 23. Dampers 37, 38, 74 are provided in each outlet chamber, and dampers 82 in each branch duct. To clean the gas outlet tubes of the central group of cells which discharge into the part 36 of the central outlet chamber the dampers of the central group are set as shown, the dampers of the side groups are opened, and the fan is started so that particles passing through the gas outlets are returned to the gas inlet duct for retreatment. The cells may have axial or tangential inlets.

Classifications:

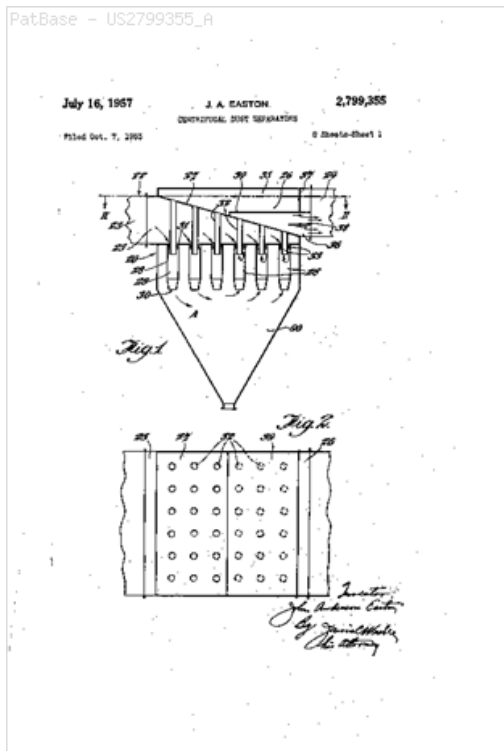
International (IPC 8-9): B04C11/00 B04C5/28 (Advanced/Invention); B04C11/00 B04C5/00 (Core/Invention)

International (IPC 1-7): B01D45/16 B04C11/00 B04C5/28

CPC: B04C5/28 B04C11/00

European: B04C11/00 B04C5/28

US: 55/282 55/286 55/340 55/346 55/417

**Family:**

Publication number	Publication date	Application number	Application date
GB736320 A	19550907	GB19520025263	19521008
US2799355 A	19570716	US19530384675	19531007

Priority:

GB19520025263 19521008

Probable Assignee: HOWDEN JAMES AND CO LTD

Assignee(s): (std): HOWDEN JAMES AND CO LTD

Assignee(s): JAMES HOWDEN AND CO ; JAMES HOWDEN AND CO LTD ; JAMES HOWDEN AND COMPANY LIMITED

Inventor(s): (std): ANDERSON EASTON JOHN ; EASTON JOHN ANDERSON

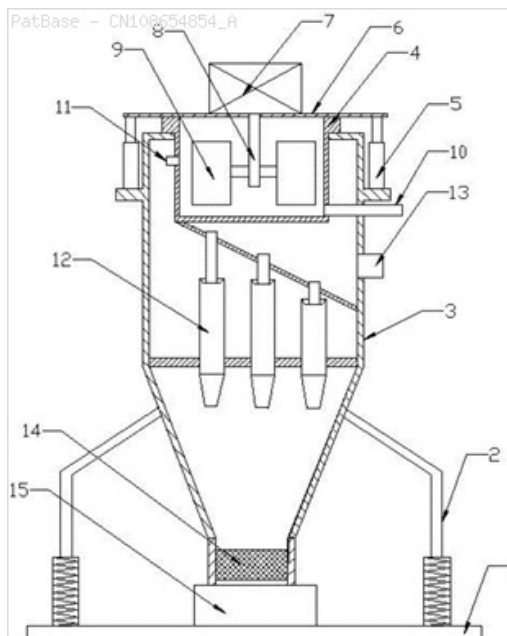
6) Family number: 71512085 (CN108654854A)

Title: EFFICIENT MULTI-PIPE CYCLONE DUST COLLECTOR

Abstract: The invention discloses an efficient multi-pipe cyclone dust collector. The efficient multi-pipe cyclone dust collector comprises a base. The left side and the right side of the top of the base are symmetrically connected with damping supporting rods, a filter box is embedded into the top of an inner cavity of a shell, the left side and the right side of the shell are connected with hydraulic telescopic rods, the tops of the hydraulic telescopic rods are connected with a cover body, a drive motor is arranged at the center position of the top of the cover body, and the end, located in an innercavity of the filter box, of a rotary shaft is connected with electrostatic dust removal plates. The right side wall of the filter box is connected with a smoke inflow pipe, the left side wall of the filter box is connected with an air outflow pipe, multiple sets of cyclone units connected in parallel are embedded between an upper fixing plate and a lower fixing plate, the right side wall of the shell is connected with a smoke exhaust pipe, a rotary valve is arranged at the bottom of the inner cavity of the shell, and a settling tank is arranged at the bottom of the shell. The structural design is reasonable, the cover body drives the electrostatic dust removal plates to rise through the hydraulic telescopic rods on the two sides of the shell to enable the electrostatic dust removal plate to be separated from the filter box, attached dust particles can be cleaned away, and the cleaning difficulty of the device is lowered.

Classifications:

International (IPC 8-9): B04C11/00 B04C5/181 B04C5/28 B04C9/00 (Advanced/Invention)

**Family:**

Publication number	Publication date	Application number	Application date
■ CN108654854 A	20181016	CN201810381207	20180425

Priority:

CN201810381207 20180425

Probable Assignee: ANHUI TIANSHUN ENVIRONMENTAL PROT EQUIPMENT CO LTD**Assignee(s):** (std): ANHUI TIANSHUN ENVIRONMENTAL PROT EQUIPMENT CO LTD**Assignee(s):** ANHUI TIANSHUN ENVIRONMENTAL PROTECTION EQUIPMENT CO ; ANHUI TITAN ENVIRONMENTAL PROTECTION EQUIPMENT CO LTD**Inventor(s):** (std): LIANG MING ; ZHONG HUA ; ZHANG BING**7) Family number: 23823095** (DE976488A)

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Title: Vorrichtung zur Trennung von flüssigen Suspensionen von Feststoffgemengen in zwei der Konzentration nach regelbaren Fraktionen mittels mehrerer parallel geschalteter Hydrozyklone Device parallel to the separation from liquid suspensions from solid mixtures in two of the concentration after adjustable parliamentary groups by means of several switched hydrocyclones (Machine translation)

Classifications:**International (IPC 8-9):** B04C11/00 B04C5/24 B04C5/28 (Advanced/Invention);

B04C11/00 B04C5/00 (Core/Invention)

International (IPC 1-7): B04C3/04**CPC:** B04C5/28 B04C5/24 B04C11/00**European:** B04C11/00 B04C5/24 B04C5/28**Family:**

Publication number	Publication date	Application number	Application date
■ DE976488 A	19631003	DE1948P025537	19481219
■ DE976488 C	00000000		00000000

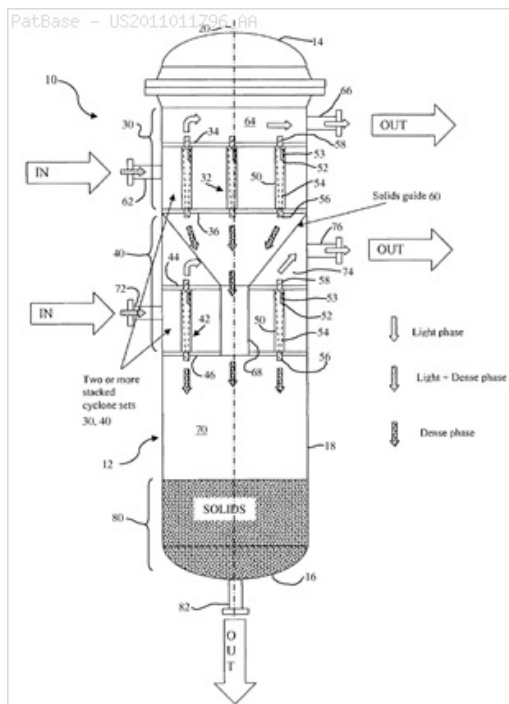
Probable Assignee: STAMICARBON**Assignee(s):** (std): STAMICARBON**Assignee(s):** STAMICARBON N V ; STAMICARBON N V HEERLEN NIEDERLANDE**Inventor(s):** (std): FONTEIN FREERK JAN**Inventor(s):** NIEDERLANDE FREERK JAN FONTEIN HEERLEN**8) Family number: 48165117** (US2011011796A)

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Title: COMPACTED HYDROCYCLONE APPARATUS IN VESSELS

Abstract: A particular stacking configuration may be used for installing or orienting a plurality of hydrocyclones in a vessel in order to reduce vessel size and make process systems more compact at higher flow rates. Vessel size and footprint reduction may be achieved by stacking one or more hydrocyclone packs, modules or groups one above the other in a vertically oriented vessel.

Classifications:**International (IPC 8-9):** B01D17/038 B01D21/00 B01D21/26 B01D43/00 B04C11/00 B04C3/00 B04C5/00 B04C5/04 B04C5/14 B04C5/28 (Advanced/Invention)**CPC:** B01D21/26 B04C5/00 B04C11/00 B04C5/28 B04C5/14 B01D21/003 B01D21/267 B01D221/04**European:** B01D21/26 B04C5/14 B04C5/28**US:** 209/728 210/512.2 210/512.200P



Family:

Publication number	Publication date	Application number	Application date
BR112012001089 A2	20160223	BR20121101089	20100622
GB201202733 A0	20120404	GB20120002733	20100622
GB2485110 A1	20120502	GB20120002733	20100622
NO20111743 A	20120130	NO20110001743	20111215
SG177258 A1	20120228	SG20110093283	20100622
US2011011796 AA	20110120	US20100819859	20100621
US2013299419 AA	20131114	US20130943485	20130716
US8490798 BB	20130723	US20100819859	20100621
US9016481 BB	20150428	US20130943485	20130716
WO11008432 A1	20110120	WO2010US39483	20100622

Priority:

US20090226577P 20090717 US20100819859 20100621 WO2010US39483 20100622
US20130943485 20130716

Probable Assignee: CAMERON INT CORP

Assignee(s): (std): CAMERON INT CORP ; NICKSON PETER

Inventor(s): (std): NICKSON PETER ; NICKSON PETER WILLIAM

Inventor(s): PETER WILLIAM NICKSON ; PETER NICKSON

Agent(s): CAMERON INT CORP; MOSSMAN KUMAR AND TYLER PC

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 NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

9) Family number: 33073123 (WO06033574A1)

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Title: DEVICE AND METHOD FOR REMOVING PARTICLES FROM EXHAUST GASES

Abstract: The invention relates to a device for cleaning exhaust gases from particles, particularly from soot particles, comprising a first inlet, an outlet, means for generating at least one cyclone between the inlet and the outlet, and adjustment means for adjusting the gas flow through the at least one cyclone.

Classifications:

International (IPC 8-9): B01D45/12 B04C11/00 B04C5/28

F01N3/037 (Advanced/Invention);

B01D45/12 B04C11/00 B04C5/00 F01N3/037 (Core/Invention)

International (IPC 1-7): B01D45/12 B04C11/00 B04C5/28

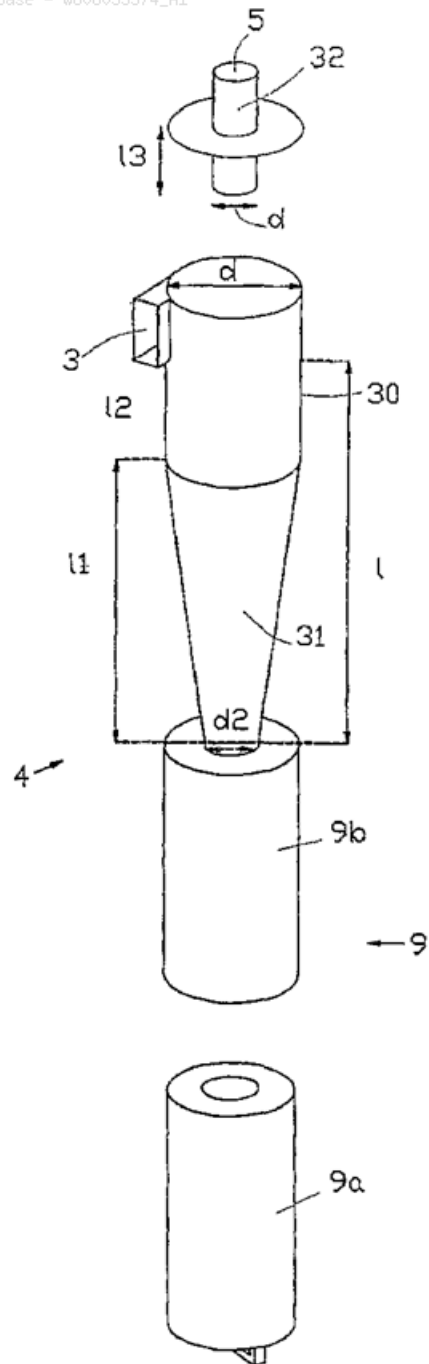
F01N3/037 F01N3/37

CPC: B04C11/00 B01D45/12 B04C5/28 F01N9/00 F01N13/011

F01N3/037 B01D45/16 F02B35/02 Y02T10/146 Y02T10/20

European: B01D45/12 B01D45/16 B04C11/00 B04C5/28 F01N3/037

F02B35/02 R01N13/04 R01N9/00



Family:

Publication number	Publication date	Application number	Application date
EP1804951 A1	20070711	EP20050787218	20050923
NL1027093 C2	20060327	NL20041027093	20040923
NL1029380 C1	20070104	NL20051029380	20050630
WO06033574 A1	20060330	WO2005NL00691	20050923

Priority:

NL20041027093 20040923 NL20051029380 20050630 WO2005NL00691 20050923

Probable Assignee: E TRACTION EUROPE BV

Assignee(s): (std): E TRACTION EUROPE BV ; HEINEN ADRIANUS JOHANNES ; TRACTION EUROP B V E ; TRACTION EUROP E BV

Assignee(s): E TRACTION EUROPE B V

Inventor(s): (std): HEINEN ADRIANUS JOHANNES

Inventor(s): ADRIANUS JOHANNES HEINEN

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 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

Title: Desilter apparatus including adaptor members for accommodating connection of cyclone separators of any diameter to manifold conduits having invariant diameters

Abstract: An industrial desilter apparatus includes a manifold having inflow and outflow conduits of invariant diameter, a plurality of cyclone separators in communication with the manifold, and one or more adaptor members for connecting the tubular inflow and/or outflow portions of a cyclone separator having any diameter with the corresponding inflow and/or outflow conduits of the manifold. A set of adaptors includes a first singularly-constructed, tubular member for connecting the inflow portion of said cyclone separator having any diameter to the inflow conduit of the manifold and a second singularly-constructed, tubular member for connecting an outflow portion of said cyclone separator having any diameter to the corresponding outflow conduit of the manifold.

Classifications:

International (IPC 8-9): B04C11/00 B04C5/28

E21B21/06 (Advanced/Invention);

B04C11/00 B04C5/00 E21B21/00 (Core/Invention)

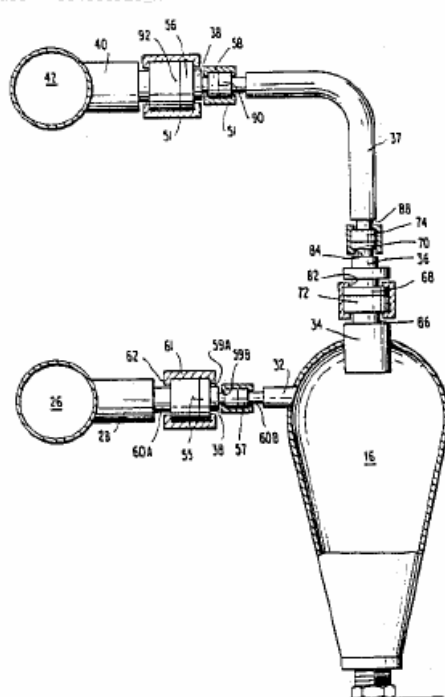
International (IPC 1-7): B04C5/26

CPC: B04C5/28 B04C11/00 E21B21/065

European: B04C11/00 B04C5/28 E21B21/06N2

US: 209/211 209/728 210/512.2 285/148.23 285/177 285/330 285/413

PatBase - US4655923_A



Family:

Publication number	Publication date	Application number	Application date
US4655923 A	19870407	US19850737132	19850523

Priority:

US19850737132 19850523

Probable Assignee:

LEONE VINCENT D

Assignee(s): (std):

LEONE VINCENT D

Inventor(s): (std):

LEONE VINCENT D

Title: SEAL ARRANGEMENT FOR PROCESSING APPARATUS

Abstract: A novel seal arrangement is provided for use in processing apparatus of the type including a partition for separating zones of relatively high and low pressures. At least one aperture is provided in such partition, the aperture having a wall. A processing unit (such as a hydrocyclone) has a portion thereof located in such aperture so that an annular region is defined between such unit and the aperture wall. An annular seal of resiliently deformable material is located in this annular region and provides a seal between the above noted zones. This seal is of cup-shaped form and includes an annular outer seal lip which is radially spaced from the processing unit. This seal outer lip is connected to the remainder of the seal via an end wall. The seal outer lip has inner and outer surfaces and a free annular edge remote from the end wall. This inner surface is exposed, in use, to the zone of higher pressure such that the outer surface of the seal lip sealingly engages the wall of the aperture under the influence of the differential pressures acting on it. The seal is located relative to the wall of the aperture and the wall of the aperture is of such dimension that the sealing engagement between the wall and the outer surface of the seal lip occurs in an annular sealing region located generally between and spaced from both the seal end wall and the free annular edge of the seal lip.

Classifications:

International (IPC 8-9): B04C11/00 B04C5/28 F16J15/00 F16J15/02

F16J15/10 (Advanced/Invention);

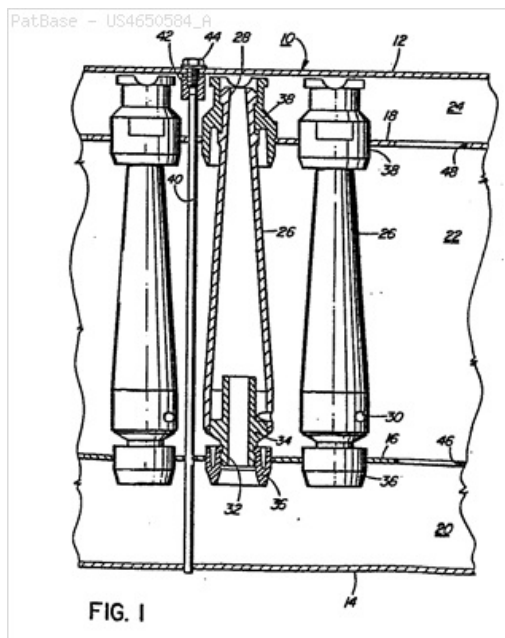
B04C11/00 B04C5/00 F16J15/02 F16J15/10 (Core/Invention)

International (IPC 1-7): B04C11/00 B04C5/24 B04C5/28 F16J15/00 F16J15/02

CPC: Y10S277/918 F16J15/021 B04C5/28 B04C11/00

European: B04C11/00 B04C5/28 F16J15/02B

US: 209/144 209/211 209/728 210/512.2 277/206R 277/647 277/918 55/345 55/502



Family:

Publication number	Publication date	Application number	Application date
AT49517 E	19900215	AT19830306373T	19831020
CA1206441 A1	19860624	CA19820415595	19821115
DE3381106 D1	19900222	DE19833381106	19831020
EP0109764 A2	19840530	EP19830306373	19831020
EP0109764 A3	19860716	EP19830306373	19831020
EP0109764 B1	19900117	EP19830306373	19831020
JP1718264 C3	19921214	JP19830213425	19831115
JP4004033 B4	19920127	JP19830213425	19831115
JP59098751 A2	19840607	JP19830213425	19831115
US4650584 A	19870317	US19830542678	19831017

Priority:

CA19820415595 19821115 EP19830306373 19831020

Probable Assignee: ELP PRODUCTS LTD

Assignee(s): (std): ELP PRODUCTS LTD ; ELAST O COR PROD AND ENG

Assignee(s): ELAST O COR PRODUCTS AND ENGINEERING LIMITED ; ELAST O COR PRODUCTS AND ENGINEERING LTD ; ELP PRODUCTS LTD CALGARY ALBERTA CA ; ERASUTO OO KOO PURODAKUTSU ANDO ENG LTD ; MACIEREWICZ JACEK J

Inventor(s): (std): MACIEREWICZ JACEK J ; JIYASETSUKU JIEE MASHIIREUTSUTSU ; JIYASETSUKU JIEE MASHIIREUTSUT

Inventor(s): MACIEREWICZ JACEK J CALGARY ALBERTA T3K 1H4 CA

Agent(s): GOWLING LAFLEUR HENDERSON LLP

Designated states: AT DE FR GB IT SE

12) Family number: 30423192 (WO04026486A1)

© PatBase

Title: ASSEMBLY FOR OPERATING HYDROCYCLONES, IN PARTICULAR FOR FLUE-GAS DESULPHURISATION PLANTS

Abstract: The invention relates to an assembly for operating hydrocyclones, in particular in the hydrocyclone station of a flue-gas desulphurisation installation in a power station. The aim of the invention is to prevent an overflow of a suspension that subsequently contaminates the installation, during the operation of hydrocyclones, in particular in a hydrocyclone station. To achieve this, each underflow (6) of the hydrocyclones (5) in the hydrocyclone station (1) is directly integrated in a rigid manner into an underflow drain pipe (8) by means of an adapter part (7) and in addition a ventilation and evacuation conduit (9) is conducted from the adapter part (7) into the overflow chamber (3) and a system drain (10) runs from the hydrocyclone inlet (11) to the adapter part (7).

Classifications:

International (IPC 8-9): B01D53/50 B04C11/00 B04C5/14

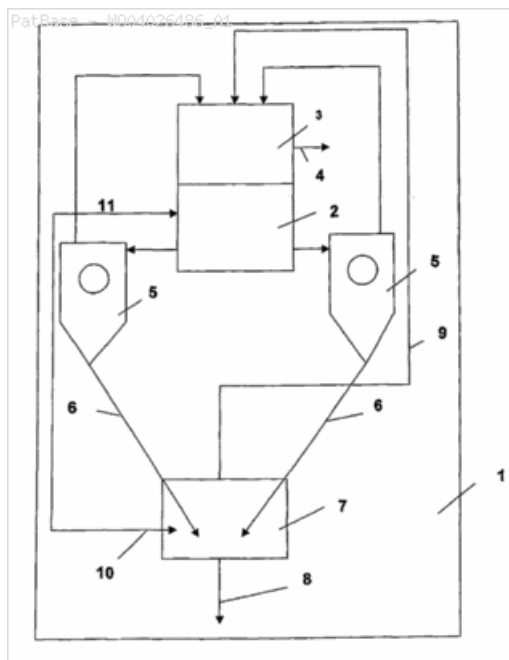
B04C5/28 (Advanced/Invention);

B01D53/50 B04C11/00 B04C5/00 (Core/Invention)

International (IPC 1-7): B04C11/00 B04C5/14 B04C5/28

CPC: B01D53/504 B04C5/14 B04C5/28 B04C11/00 F23J2215/20 F23J2217/40

European: B01D53/50B4 B04C11/00 B04C5/14 B04C5/28 R23J215/20 R23J217/40



Family:

Publication number	Publication date	Application number	Application date
WO04026486 A1	20040401	WO2003EP09977	20030908

Priority:

DE20021044061 20020909

Probable Assignee: VATTENFALL EUROPE GENERATION

Assignee(s): (std): VATTENFALL EUROP GENERATION AG ; VATTENFALL EUROPE GENERATION

Assignee(s): VATTENFALL EUROPE GENERATION AG AND CO KG ; VATTENFALL EUROPE GENERATION AND CO AG KG

Inventor(s): (std): SPARMANN ANDREAS ; LAUCK THOMAS

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

13) Family number: 20944195 (US1890070A)

© PatBase

Title: DUST SEPARATOR CONTROL

Abstract: 1. The combination with a plurality of dust separators all communicating with a common inlet duct, of means for interrupting the communication between one or more of said separators and said duct when the pressure or volume of the dust carrying medium flowing through said duct decreases.

Classifications:

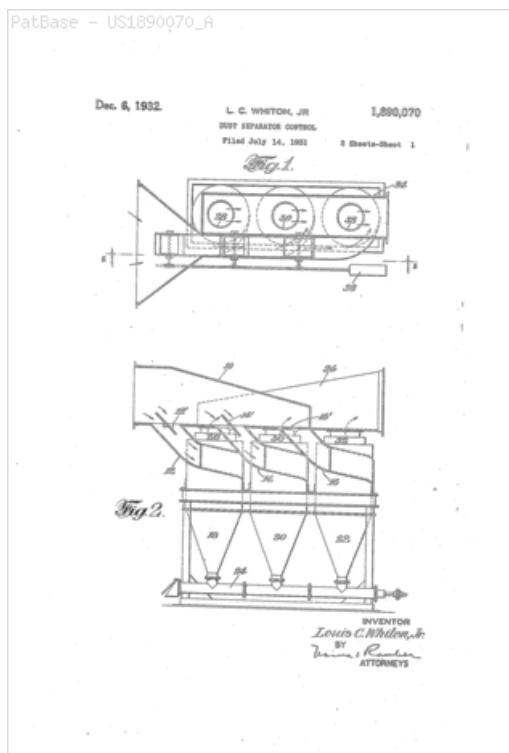
International (IPC 8-9): B04C11/00 B04C5/28 (Advanced/Invention); B04C11/00 B04C5/00 (Core/Invention)

International (IPC 1-7): B04C11/00

CPC: B04C5/28 B04C11/00

European: B04C11/00 B04C5/28

US: 209/711 210/512.2 55/344 55/346 96/400



Family:

Publication number	Publication date	Application number	Application date
US1890070 A	19321206	US19310550694	19310714

Priority:

US19310550694 19310714

Probable Assignee:

PRAT DANIEL CORP

Assignee(s): (std):

PRAT DANIEL CORP

Inventor(s): (std):

WHITON JR LOUIS C

Inventor(s):

JR LOUIS C WHITON

14) Family number: 1537196 (US4208270A)

© PatBase

Title: Hydrocyclone assembly

Abstract: A hydrocyclone assembly suitable for use with high temperature feeds (e.g., hot petroleum liquids). The hydrocyclone body is made of ceramic material with one end being flanged and cooperating with an inlet head. These parts are clamped against a mounting plate by means including one or more spring members of the distorted washer type (e.g., Belleville washer). The mounting minimizes breakage of the hydrocyclone body when used with high temperature fluid feed. Some embodiments employ a plurality of hydrocyclones disposed within a common pressure vessel.

Classifications:

International (IPC 8-9): B03B5/00 B04C11/00

B04C5/28 (Advanced/Invention);

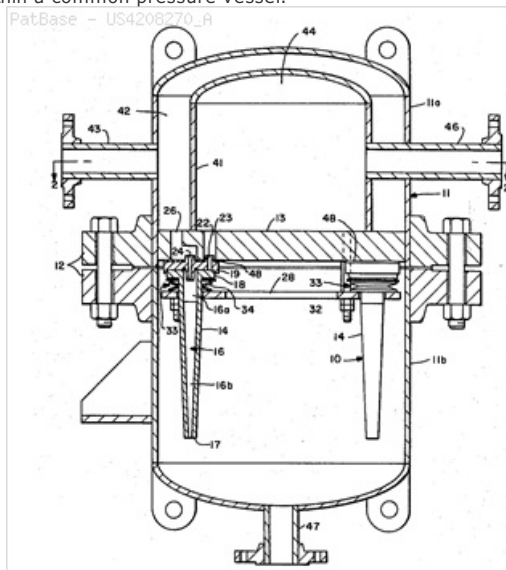
B03B5/00 B04C11/00 B04C5/00 (Core/Invention)

International (IPC 1-7): B03B5/00 B04C5/20

CPC: B04C5/28 B04C11/00

European: B04C11/00 B04C5/28

US: 165/82 209/211 209/728 210/512.2 285/187 411/150



Family:

Publication number	Publication date	Application number	Application date
CA1096336 A1	19810224	CA19790321858	19790220
US4208270 A	19800617	US19790036386	19790507

Priority:

US19780890406 19780327

CA19790321858 19790220

US19790036386 19790507

Probable Assignee:

KREBS ENGINEERS

Assignee(s): (std):

KREBS ENGINEERS

Assignee(s):

GRIEVE DONALD F ; HOCHSCHEID ROBERT E

Inventor(s): (std):

GRIEVE DONALD F ; HOCHSCHEID ROBERT E

Agent(s):

SMART AND BIGGAR

15) Family number: 4459241 (DE3539483A1)

© PatBase

Title: Process and installation for feeding hydrocyclones with a solids-laden liquid

Abstract: In a process and an installation for performing the process of feeding a multicyclone, comprising a manifold (distributor) and at least two hydrocyclones connected thereto, with a solids-laden liquid, especially a gypsum suspension and/or circulating water from a fluid gas desulphurising installation, in which the liquid is fed to the manifold (distributor) in a regulated manner from a liquid reservoir, the invention provides, in order to avoid deposits of solids, caused by breaks in operation, in a feed line, and the time-consuming cleaning measures required for removal of the deposits, that the liquid flows through the distributor (manifold) and a part-stream, not taken up by the hydrocyclones, is recycled to the liquid reservoir.

Classifications:

International (IPC 8-9): B04C11/00 B04C5/28

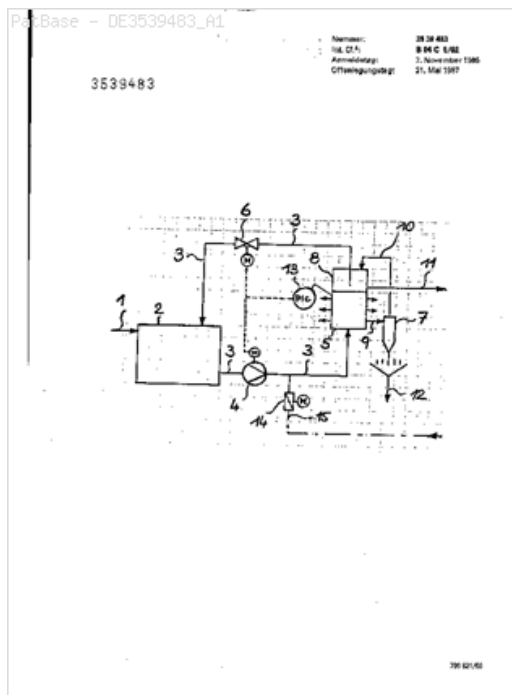
B04C9/00 (Advanced/Invention)

International (IPC 1-7): B01J4/00 B04C5/02 B04C5/22 B04C5/24

B04C7/00

CPC: B04C5/28 B04C9/00 B04C11/00 B04C2009/002

European: B04C11/00 B04C5/28 B04C9/00 L04C9/00C



Family:

Publication number	Publication date	Application number	Application date
DE3539483 A1	19870521	DE19853539483	19851107
DE3539483 C2	19871112	DE19853539483	19851107
DE3539483 C3	19941215	DE19853539483	19851107

Priority:

DE19853539483 19851107

Probable Assignee: STEINMUELLER GMBH L AND C

Assignee(s): (std): STEINMUELLER GMBH L AND C

Assignee(s): L AND C STEINMUELLER GMBH ; L AND C STEINMUELLER GMBH 51643 GUMMERSBACH DE ; L AND C STEINMUELLER GMBH 5270 GUMMERSBACH DE

Inventor(s): (std): MEIER JUERGEN DIPL ING ; KOHN JOHANN DIPL ING ; HASENBACH KARLFRIED DIPL ING

16) Family number: 29362266 (US5447632A)

© PatBase

Title: Hydrocyclone plant

Abstract: PCT No. PCT/SE93/00846 Sec. 371 Date Jun. 13, 1994 Sec. 102(e) Date Jun. 13, 1994 PCT Filed Oct. 15, 1993 PCT Pub. No. WO94/09909 PCT Pub. Date May 11, 1994. In a hydrocyclone plant for treating fibre suspensions comprising a multiplicity of hydrocyclone bodies (1) each hydrocyclone body is mounted in a hole in a wall (5) and is sealed to the wall with the aid of a sealing ring (18). According to the invention the sealing ring is made of an inexpensive chemical resistant material and is radially cut through, so that two free ends are formed on the sealing ring. The hydrocyclone body is provided with a sealing surface (12) having a radial extension which increases along the hydrocyclone body. Axially along the sealing surface (12) a projection (22) extends between the free ends of the sealing ring. When mounting the hydrocyclone body the sealing ring (8) is adapted to be entrained by the wall (5) along the sealing surface (12), so that the sealing ring is expanded and seals between the sealing surface and the wall.

Classifications:

International (IPC 8-9): B04C11/00 B04C5/24 B04C5/28 D21D5/24

F16J15/10 (Advanced/Invention);

B04C11/00 B04C5/00 D21D5/00 F16J15/10 (Core/Invention)

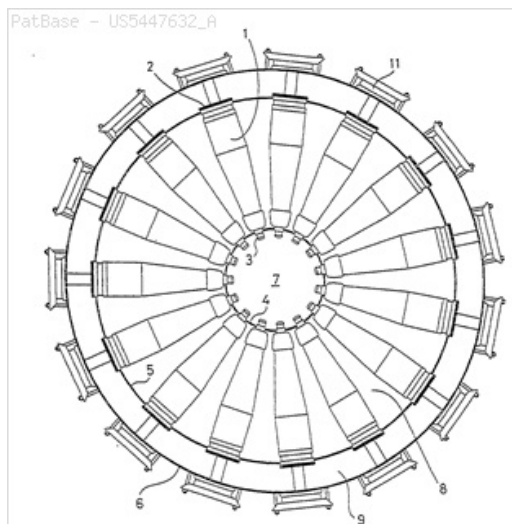
International (IPC 1-7): B01D21/26 B04C B04C B04C11/00

B04C5/24 B04C5/28 F16J15/02 F16J15/10

CPC: B04C5/28 B04C11/00 D21D5/24

European: B04C11/00 B04C5/28 D21D5/24

US: 209/728 210/512.2 210/787



Family:

Publication number	Publication date	Application number	Application date
AT147662 E	19970215	AT19930924246T	19931015

CA2125863 AA	19940614	CA19932125863	19931015
CA2125863 C	20030701	CA19932125863	19931015
DE69307491 D1	19970227	DE19936007491	19931015
DE69307491 T2	19970515	DE19936007491T	19931015
EP0623056 A1	19941109	EP19930924246	19931015
EP0623056 B1	19970115	EP19930924246	19931015
FI106101 B	20001130	FI19940003026	19940622
FI943026 A	19940622	FI19940003026	19940622
FI943026 A0	19940622	FI19940003026	19940622
JP7502455 T2	19950316	JP19940510947T	19931015
SE470494 B	19940606	SE19920003111	19921023
SE470494 C	19940929	SE19920003111	19921023
SE9203111 A	19940424	SE19920003111D	19921023
SE9203111 A0	19921023	SE19920003111	19921023
SE9203111 L	19940424	SE19920003111	19921023
US5447632 A	19950905	US19940244865	19940613
WO9409909 A1	19940511	WO1993SE00846	19931015

Priority:

SE19920003111 19921023 WO1993SE00846 19931015

Probable Assignee: GLV FINANCE HUNGARY KFT

Assignee(s): (std): ANDERSSON ROINE ; CELLECO HEDEMORA AB

Assignee(s): CELLECO HEDEMORA AB STOCKHOLM SE ; CELLECO HEDEMORA BOX AB ; GL AND V CANADA INC ; GL AND V MANAGEMENT HUNGARY KFT ; GL AND V MANAGEMENT HUNGARY KFT LUXEMBOURG BRANCH ; GLV FINANCE HUNGARY KFT ; GROUPE LAPERRIERE AND VERREAUULT INC ; GL AND V SWEDEN AB

Inventor(s): (std): ANDERSON ROINE ; ANDERSSON ROINE ; ROINE ANDERSSON ; ANDERSSON R

Inventor(s): ANDERSSON ROINE S 175 64 JAERFAELLA SE ; R ANDERSSON

Agent(s): BORDEN LADNER GERVAIS LLP

Designated states: AT BE CA CH DE DK ES FI FR GB GR IE IT JP LU MC NL PT SE US

17) Family number: 57468270 (WO14152585A1)

© PatBase

Title: MULTI-STAGE DOWNHOLE OIL-WATER SEPARATOR

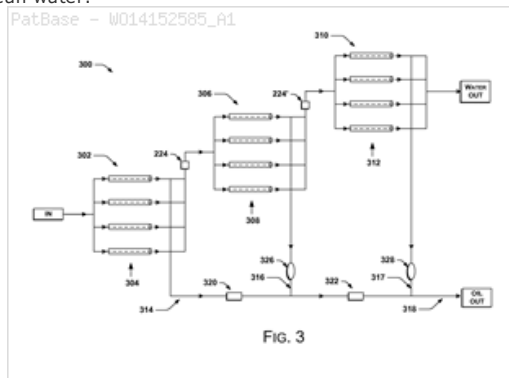
Abstract: Multi-stage downhole oil-water separators are provided. An example system includes parallel arrays of downhole hydrocyclones, with multiple of the parallel arrays connected in hydraulic series to provide successive oil-water separation stages downhole. The arrays of hydrocyclones connected in hydraulic parallel, and the parallel arrays connected in hydraulic series are flow balanced and pressure balanced with respect to each other and situated into a housing suitable for the limited space of a downhole environment. The parallel arrays provide high throughput, while the multiple stages connected in series provide high separation resulting in high oil yield and substantially clean water.

Classifications:

International (IPC 8-9): B01D17/038 B04C5/28

E21B43/34 (Advanced/Invention)

CPC: B04C5/26 B04C5/28 B04C11/00 E21B43/38 B01D17/0217



Family:

Publication number	Publication date	Application number	Application date
WO14152585 A1	20140925	WO2014US27501	20140314

Priority:

US20130801924P 20130315

Probable Assignee: SCHLUMBERGER CA LTD

Assignee(s): (std): PRAD RES AND DEV LTD ; SCHLUMBERGER CA LTD ; SCHLUMBERGER TECHNOLOGY BV ; SCHLUMBERGER TECHNOLOGY CORP ; SCHLUMBERGER HOLDINGS ; SCHLUMBERGER SERVICES PETROL

Assignee(s): SCHLUMBERGER HOLDINGS LTD ; SERVICES PETROLIERS SCHLUMBERGER ; SCHLUMBERGER CANADA LTD ; PRAD RESEARCH AND DEVELOPMENT LTD

Inventor(s): (std): HACKWORTH MATTHEW R

Agent(s): CLARK BRANDON S 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 IR 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 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

18) Family number: 72981271 (WO19018788A1)

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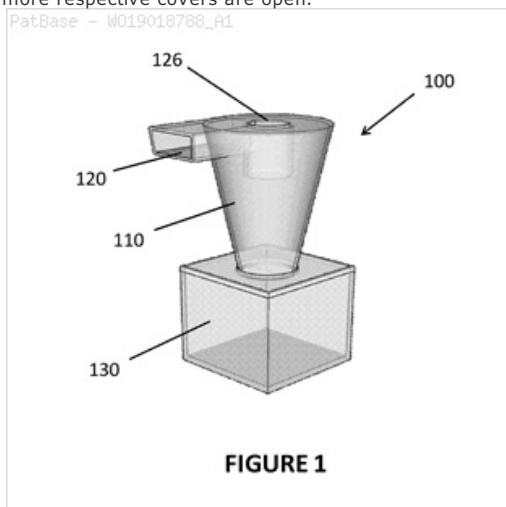
Title: FLOW AND PRESSURE CONTROL IN CYCLONIC FILTER ARRAYS

Abstract: An air filtration system comprising a plurality of sections configured to receive an incoming airstream is disclosed. In some embodiments, each section of the plurality of sections includes a first airstream receiving side (ASRS) and a second air stream exhaust side (ASES), and a plurality of cells each comprising a cyclonic cavity having a tangential inlet arranged to receive a portion of the airstream via the ASRS, and an axial outlet arranged to exhaust the portion of the airstream to the ASES. Each section is further configured with a cover that can be opened and closed, such that the closing of one or more respective covers of respective sections forces the airstream to flow through remaining sections having open covers as well as their respective cells, at a velocity greater than when such one or more respective covers are open.

Classifications:

International (IPC 8-9): B04C11/00 B04C3/04 B04C3/06 B04C5/15 B04C5/28 (Advanced/Invention)

CPC: B04C3/06 B04C5/15 B04C5/28 B04C11/00 B04C3/04 B01D45/16 B04C2009/005



Family:

Publication number	Publication date	Application number	Application date
WO19018788 A1	20190124	WO2018US43123	20180720

Priority:

US20170534706P 20170720

Probable Assignee: ENVERID SYSTEMS INC

Assignee(s): (std): ENVERID SYSTEMS INC ; MEIRAV UDI ; PERL OLSHVANG SHARON

Inventor(s): (std): MEIRAV UDI ; PERL OLSHVANG SHARON

Agent(s): HOPKINS BRIAN P 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 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

19) Family number: 2913273 (US4698152A)

© PatBase

Title: Oil recovery systems

Abstract: PCT No. PCT/AU84/00151 Sec. 371 Date Apr. 3, 1985 Sec. 102(e) Date Apr. 3, 1985 PCT Filed Aug. 3, 1984 PCT Pub. No. WO85/00851 PCT Pub. Date Feb. 28, 1985. An oil recovery system comprises a first separator preferably in the form of a three-stage "knock-out" tank (54) connected to receive crude oil from an oil-well (50). Water contaminated with oil is lead from the first separator to the inlet manifold (48) of a second separator bank (10) preferably consisting of one or more cyclone separators which separates the inlet mixture into separate water and oil components. The outlet pipe (35) for the separated water component selectively discharges to an outlet (82) or recycled through the cyclone separator; preferably in accordance with the degree of oil contamination of the separated water component.

Classifications:

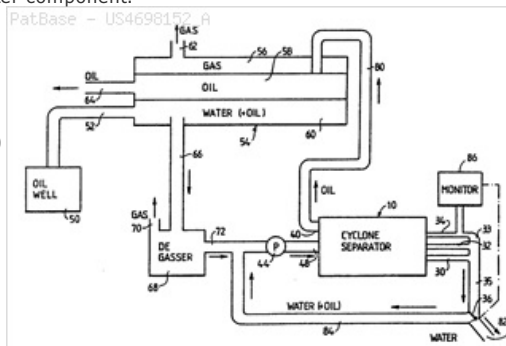
International (IPC 8-9): B01D17/00 B01D17/02 B01D17/025 B01D17/12 B03D1/14 B04C11/00 B04C5/00 B04C5/13 B04C5/14 B04C5/28 B04C5/30 B04C7/00 B04C9/00 E21B43/34 (Advanced/Invention); B04C7/00 (Advanced/Non-invention); B01D17/00 B01D17/02 B01D17/025 B03D1/14 B04C11/00 B04C5/00 B04C7/00 B04C9/00 E21B43/34 (Core/Invention); B04C7/00 (Core/Non-invention); B04C E21B (Subclass/Invention)

International (IPC 1-7): B01D17/025 B01D17/05 B04C11/00 B04C5/00 B04C5/081 B04C5/13 B04C5/14 B04C5/30 B04C5/30 B04C7/00 B04C9/00 E21B43/34

CPC: B04C5/28 E21B43/34 B03D1/1431 B03D1/1456 B04C11/00 B01D17/0205 B03D1/1418 B04C5/00 B04C7/00 B04C9/00 B01D17/0217 B01D17/047

European: B01D17/02D B03D1/14C B04C11/00 B04C5/00 B04C5/28 B04C7/00 B04C9/00 E21B43/34

US: 210/195.1 210/197 210/259 210/512.2 210/708 210/723 210/727 210/788 210/96.1



Family:

Publication number	Publication date	Application number	Application date
AU198432131 A1	19850312	AU19840032131	19840803
AU198433116 A1	19850312	AU19840033116	19840810
AU568405 B2	19871224	AU19840033116	19840810
AU579583 B2	19881201	AU19840032131	19840803
BRPI8407009 A	19850702	BR1984PI07009	19840810
DK155785 A	19850403	DK19850001557	19850403

DK155785 A0	19850403	DK19850001557	19850403
DK161685 A	19850410	DK19850001616	19850410
DK161685 A0	19850410	DK19850001616	19850410
EP0151604 A1	19850821	EP19840902903	19840803
EP0151604 A4	19850902	EP19840902903	19840803
EP0152437 A1	19850828	EP19840903041	19840810
FI851299 A	19850401	FI19850001299	19850401
FI851299 A0	19850401	FI19850001299	19850401
FI851299 L	19850401	FI19850001299	19850401
GB2153249 A1	19850821	GB19850007541	19850322
GB2153249 B2	19870401	GB19850007541	19850322
GB2154909 A1	19850918	GB19850009189	19850410
GB2154909 B2	19861112	GB19850009189	19850410
GB8507541 A0	19850501	GB19850007541	19850322
GB8509189 A0	19850515	GB19850009189	19850410
HK83687 A	19871120	HK19870000836	19871112
JP60501995 T2	19851121	JP19840503098T	19840810
JP60502241 T2	19851226	JP19840503024	19840803
NO164006 B	19900514	NO19850001282	19850329
NO164006 C	19900822	NO19850001282	19850329
NO169949 B	19920518	NO19850001251	19850328
NO169949 C	19920826	NO19850001251	19850328
NO851251 A	19850328	NO19850001251	19850328
NO851251 L	19850328	NO19850001251	19850328
NO851282 A	19850329	NO19850001282	19850329
NO851282 L	19850329	NO19850001282	19850329
SG8790552 A	19880304	SG19870090552	19870626
US4698152 A	19871006	US19850741306	19850403
US4816165 A	19890328	US19870057501	19870603
WO8500760 A1	19850228	WO1984AU00155	19840810
WO8500851 A1	19850228	WO1984AU00151	19840803

Priority:

AU1983PG00664 19830804	AU1983PG00777 19830811	AU1983PG00778 19830811
AU19840032131 19840803	WO1984AU00151 19840803	AU19840033116 19840810
WO1984AU00155 19840810	US19850740076 19850329	

Probable Assignee: PETRECO INT INC

Assignee(s): (std): CARROLL N ; CARROLL NOEL ; CONOCO SPECIALTY PROD

Assignee(s): CONOCO SPECIALTY PRODUCTS INC ; CONOCO SPECIALTY PRODUCTS INC A CORP OF DE ; NOEL CARROLL ; PETRECO INC ; PETRECO INT ; PETRECO INT INC ; BAKER HUGHES LTD

Inventor(s): (std): GAVAN PRENDERGAST ; NOEL CARROLL ; PRENDERGAST GAVAN ; CARROLL NOEL

Agent(s): DAVIES COLLISON CAVE; DAVIES COLLISON CAVE PTY LTD

Designated states: AT AU BE BR CH DE DK FI FR GB JP LI LU NL NO SE SU US

20) Family number: 5359274 (EP0259577A2)

© PatBase

Title: REACTOR FOR GASIFYING COAL.

Abstract: Hot-gas cyclones (7) for dedusting the gas produced in a reactor (1) are integrated in the reactor (1) for gasifying a carbonaceous fuel. The hot-gas cyclone inlets (3) can be isolated by mobile shut-off devices (10) to be actuated from outside the reactor (1) and are combined to lead to a common lock system (15).

Classifications:

International (IPC 8-9): B04C11/00 B04C5/28 C10J3/56

C10J3/72 (Advanced/Invention);

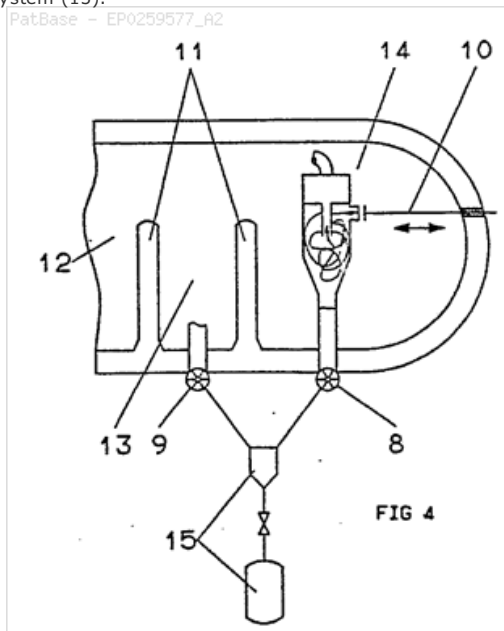
B04C11/00 B04C5/00 C10J3/00 C10J3/46 (Core/Invention)

International (IPC 1-7): B04C5/185 B04C9/00 C01B31/18 C10J1/00

C10J3/20 C10J3/34 C10J3/56 C10J3/72 C10J3/84 F27B15/00

CPC: C10J3/56 B04C5/28 B04C11/00 C10J3/523 C10J3/84

European: B04C11/00 B04C5/28 C10J3/56 Y02E20/18



Family:

Publication number	Publication date	Application number	Application date
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BRPI8704701 A	19880426	BR1987PI04701	19870910
CN87106252 A	19880511	CN19871006252	19870911
DE3630916 A1	19880324	DE19863630916	19860911
EP0259577 A2	19880316	EP19870110422	19870718
EP0259577 A3	19880914	EP19870110422	19870718
JP63075093 A2	19880405	JP19870219320	19870903
PT85659 A	19881014	PT19870085659	19870908
ZA8706599 A	19880314	ZA19870006599	19870903

Priority:

DE19863630916 19860911

Probable Assignee: GUTEHOFFNUNGSHUETTE MAN

Assignee(s): (std): GUTEHOFFNUNGSHUETTE MAN

Assignee(s): MAN GUTEHOFFNUNGSHUETTE GMBH ; MAN GUTEHOFFNUNGSHUTTE GMBH

Inventor(s): (std): GEBHARDT JURGEN ; KNOP KLAUS ; WOLTERS GUNTER ; GEBHARDT JUERGEN DIPL ING ; WOLTERS GUENTER ING GRAD ; GEBHARDT JUERGEN ; WOLTERS GUENTER ; GEBHARDT JURGEN DIPL ING ; KNOP KLAUS DR ING ; GERHARDS JURGEN ; KURAUSU KUNOPU ; GIYUNTERU BUORUTERUSU ; YURUGEN GEPUHARUTO

Inventor(s): JURGEN GERHARDS ; GUENTER WOLTERS ; JUERGEN GEBHARDT ; JURGEN GEBHARDT ; KLAUS KNOP ; GUNTER WOLTERS ; WOLTERS GUENTER ING

Designated states: DE ES GB IT NL SE

21) Family number: 49731281 (US2014319052A)

© PatBase

Title: CLOSING VALVE UNIT FOR A CYCLONE

Abstract: A closing valve unit for a centrifugal cleaner arrangement including first and second connecting members configured to connect a cyclone to a centrifugal cleaner group, and a movable valve sandwiched between the first and second connecting members, the moveable valve including apertures commensurate with openings to feed and reject conduits of the cyclone and to openings to feed and reject conduits of the cyclone cleaner group, wherein the movable valve has a first position in which the apertures are aligned with the cyclone and cleaner group feed conduits and with the cyclone accept and cleaner group accept conduits, and a control element connected to the moveable valve and configured to move the moveable valve between the first position and the second positions.

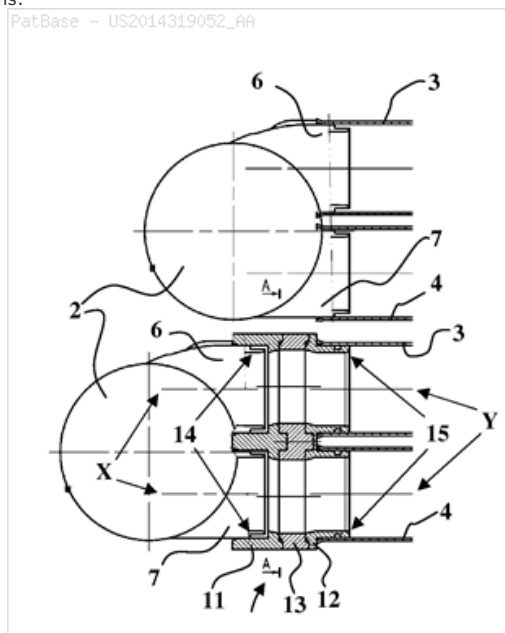
Classifications:

International (IPC 8-9): B04C11/00 B04C3/06 B04C5/24 B04C5/28 D21D5/24 F16K11/16 F16K11/074 F16K3/02 F16K31/44 F16K5/00 (Advanced/Invention);

B04C (Subclass/Invention)

CPC: F16K11/074 B04C3/06 B04C11/00 Y10T137/86533 B04C5/24 B04C5/28 D21D5/24

US: 137/625.15 210/512.1



Family:

Publication number	Publication date	Application number	Application date
CA2845739 AA	20140217	CA20122845739	20120906
CA2845739 C	20190219	CA20122845739	20120906
CN103857473 A	20140611	CN201280049358	20120906
CN103857473 B	20161109	CN201280049358	20120906
EP2753431 A1	20140716	EP20120762322	20120906
FI123139 B	20121130	FI20110005881	20110907
FI20115881 A0	20110907	FI20110005881	20110907
IN02481CN2014 A	20150619	IN2014CN02481	20140402
JP2014531970 T2	20141204	JP20140529040T	20120906
JP6054399 B2	20161227	JP20140529040T	20120906
US2014319052 AA	20141030	US20120343575	20120906
US9573140 BB	20170221	US20120343575	20120906
WO13034808 A1	20130314	WO2012FI50865	20120906

Priority:

FI20110005881 20110907 WO2012FI50865 20120906

Probable Assignee: ANDRITZ OY

Assignee(s): (std): ANDRITZ OY ; IMMONEN JARMO ; JAERVINEN MARITA ; JARVINEN MARITA ; JARVINEN MARITO ; SUORTTI SIMO

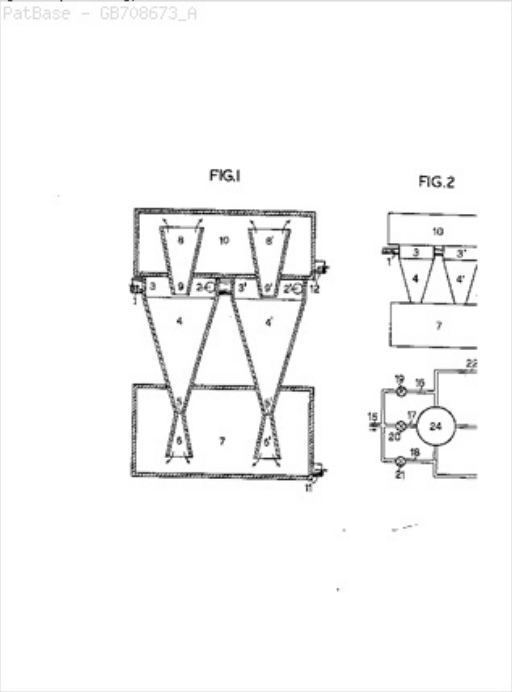
Inventor(s): (std): IMMONEN JARMO ; SUORTTI SIMO ; JAERVINEN MARITA ; JARVINEN MARITA ; JARVINEN MARITO
Inventor(s): J RVINEN MARITA
Agent(s): GOWLING LAFLEUR HENDERSON LLP; GOWLING WLG CANADA LLP; HOFFMANN EITLE; ASAMURA
PATENT OFFICE PC; NIXON AND VANDERHYE PC; ANDRITZ OY
Designated states: AE AG AL 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 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

22) Family number: 19514305 (GB708673A) © PatBase

Title: METHOD OF SEPARATING SOLID PARTICLES INTO FRACTIONS AND APPARATUS THEREFOR

Abstract: 708,673. Centrifugal - separators. MAATSCHAPPIJ VOOR KOLENBEWERKING STAMICARBON, N. V. Jan. 14, 1952 [Jan. 19, 1951], No. 1087/52. Class 23 [Also in Group XXIX] To prevent intermingling of the fractions collected in the discharge chambers of a multi-cell hydrocyclone or a multicell vortex chamber should a cell or cells become blocked, the flow from the discharge chambers is regulated so that the pressure in any chamber does not differ by more than 10 per cent. from the mean of the pressures in the chambers at the time. Suspension to be separated is tangentially injected into the cells 4, 4¹, and the fractions collect in chambers ' 7, 10 having discharge pipes 11, 12 communicating with valves 13, 14 which restrict the flow of air from pipes 23, 22 in accordance with the pressures prevailing in the chambers. Differences in pressures in the chambers 7, 10 result in differences in pressures in the pipes 23, 22 which cause a device 24 to regulate the air pressure in a pipe 25 connected to a valve 26 in the discharge pipe 11, the arrangement being such that higher pressure in the chamber 10 closes the valve 26 to increase the pressure in the chamber 7, and lower pressure in the chamber 10 opens the valve 26 to decrease the pressure in the chamber 7. The valve 26 may be dispensed with and the device 24 may operate a signal in which case the regulation of the pressures in the chambers is made manually. 'Specifications 528,590, 601,063, 671,934; 675,034, 682,527, [both in Group V], and 689,229, [Group XXIX], are referred to.

Classifications:
International (IPC 8-9): B01D21/26 B04C11/00
B04C5/28 (Advanced/Invention);
B01D21/26 B04C11/00 B04C5/00 (Core/Invention)
International (IPC 1-7): B01D35/22 B04C11/00 B04C5/28
CPC: B01D21/34 B01D21/267 B01D21/2488 B04C5/28 B04C11/00
European: 1A8 B01D21/26 B04C11/00 B04C5/28



Family:

Publication number	Publication date	Application number	Application date
BE508486 A	00000000		00000000
CH304707 A	19550131		19520118
DE891381 A	19530928	DE1952M012591	19520117
FR1056207 A	19540225		19520114
GB708673 A	19540505	GB19520001087	19520114
NL71818 C	00000000		00000000

Priority:
19510119 DE1952M012591 19520117
Probable Assignee: STAMICARBON
Assignee(s): (std): STAMICARBON
Assignee(s): VOOR KOLENBEWERKING STAMICARBON MIJ NV ; VOOR KOLENBEWERKING STAMICARBON N V MIJ ;
MAATSCHAPPIJ VOOR KOLENBEWERKING STAMICARBON N V
Inventor(s): (std): STAMICARBON N V MIJ V ; VEGTER HERMAN JOHAN ; STAMICARBON N V MAATSCHAPPIJ V
Inventor(s): N V MAATSCHAPPIJ VOOR KOLENBEWERKING STAMICARBON ; MIJ VOOR KOLENBEWERKING
STAMICARBON NV

23) Family number: 19583326 (US2550341A) © PatBase

Title: PROCESS FOR CONTROLLING THE CONCENTRATIONS OF SUSPENSIONS

Abstract: (Claim 1) I claim: ~A -method of 'thickening a suspension- of solids in a liquid into fractions so that the desired

fraction will be thickened to have a predetermined concentration value, comprising simultaneously feeding the suspension tangentially to the base area of a plurality of conical spaces and compelling it to move in each of said spaces in inner and outer vortices having the same rotational sense but of opposite axial directions, continuously withdrawing a part of the suspension from the inner vortices and discharging it axially from the center of the base end of each conical space to thereby obtain a fraction from each space having a relatively low concentration value, continuously withdrawing a part of the suspension from the outer vortex at the apex of each conical space to thereby obtain a desired fraction having 9.

Classifications:

International (IPC 8-9): B04C11/00 B04C5/24

B04C5/28 (Advanced/Invention);

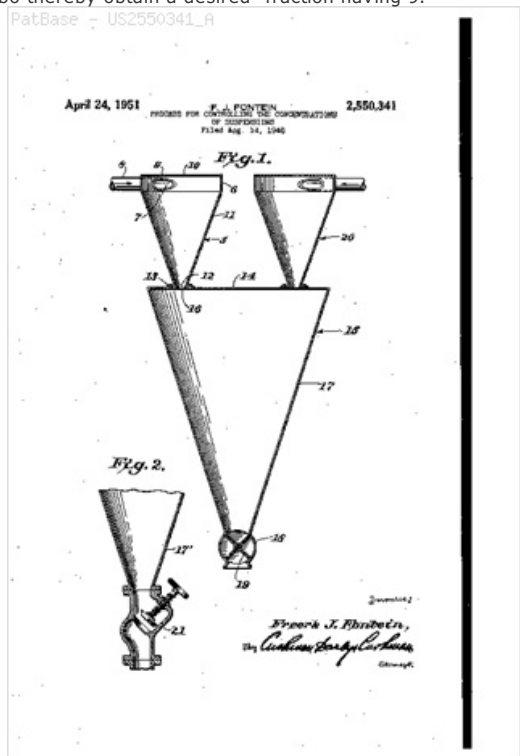
B04C11/00 B04C5/00 (Core/Invention)

International (IPC 1-7): B01D21/26 B03B5/34

CPC: B04C5/24 B04C5/28 B04C11/00

European: B04C11/00 B04C5/24 B04C5/28

US: 209/172.5 209/728 209/731



Family:

Publication number	Publication date	Application number	Application date
BE473485 A	00000000		00000000
FR946585 A	19490608		19470513
US2550341 A	19510424	US19460690550	19460814

Priority:

US19460690550 19460814

Probable Assignee: DIRECTIE STAATSMIJNEN NL

Assignee(s): (std): DIRECTIE STAATSMIJNEN NL

Assignee(s): DE DIRECTIE VAN DE STAATSMIJNEN IN LIMBURG ; DE DIRECTIE VAN DE STAATSMIJNEN IN LIMBURG AGISSANT POUR ET AU NOM DE L ETAT NEERLANDAIS

Inventor(s): (std): FONTEIN FREERK J

24) Family number: 19655352 (US2119478A) © PatBase

Title: DUST CATCHER

Abstract: [Class 23] Particles suspended in gases are separated by passage through a number of cyclone separators 12 connected in parallel between a common supply chamber 10 and a common outlet chamber. Each separator has an axial outlet 15, and a tangential inlet 11 provided with a hinged damper 17 operated by an arm 18 so that the available cross-sectional area of the inlet can be varied as the pressure difference between the inlet and outlet chambers varies. In the arrangement shown in Fig. 1, the separators 12 are placed in four rows, and arms 18 of the dampers in each row are connected to an actuating rod 19 attached to a bar 20 so that all the dampers can be operated simultaneously by the electric motor 23. The pressure chamber 26 is divided by a diaphragm 25 and the upper part is connected by a pipe 24 to the inlet chamber 10, and the lower part is connected by the pipe 27 to the outlet chamber. The diaphragm thus moves up and down with variations in the pressure difference to operate a mercury switch 31 to close the circuit of the motor 23 for forward or reverse rotation. The connections are such that when the pressure difference increases to press the diaphragm 25 down, the dampers are operated to increase the area of the inlets. In a modification the electric motor 23 is replaced by a cylinder and piston operated by pressure fluid under the control of electrically actuated valves. A manometer may be connected across the pipes 24, 27, and in an emergency the dampers may be operated manually in accordance with the manometer readings. In the modification shown in Fig. 6, the inlet chamber 61 is placed between outlet chambers 62, 63 over two rows of separators. The dampers are operated by rods 64, 65, connected to crank arms on grooved pulleys 68, 69 having a cross belt connection. A handle is provided so that the dampers can be set in accordance with the readings of a manometer connected to the inlet and outlet chambers.

Classifications:

International (IPC 8-9): B04C11/00 B04C5/28 (Advanced/Invention);

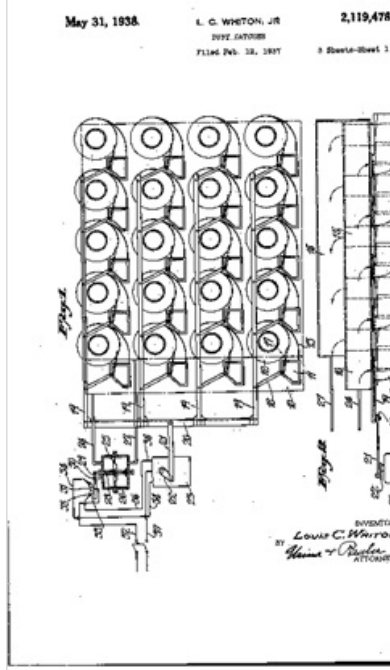
B04C11/00 B04C5/00 (Core/Invention)

International (IPC 1-7): B01D47/16 B04C11/00 B04C5/28

CPC: B04C5/28 B04C11/00

European: B04C11/00 B04C5/28

US: 209/711 209/717 210/137 55/344 55/346 55/349 96/397

**Family:**

Publication number	Publication date	Application number	Application date
FR833704 A	19381028		19380212
GB499441 A	19390124	GB19380004378	19380211
US2119478 A	19380531	US19370125399	19370212

Priority:

US19370125399 19370212

Probable Assignee:

PRAT DANIEL CORP

Assignee(s): (std):

PRAT DANIEL CORP

Inventor(s): (std):

WHITON JR LOUIS C

Inventor(s):

JR LOUIS C WHITON

25) Family number: 2105360 (US4564443A)

© PatBase

Title: Reverse centrifugal cleaning of paper making stock

Abstract: A system for separating paper fibers from contaminants of similar lower specific gravities employs a reverse centrifugal cleaner wherein the discharge port for lights (reject) is located at the apex of the internally conical cleaner body and is formed by a tube which has its inner end located in the open apex end of the cleaner body and of smaller diameter to define with the end of the body an annular discharge outlet for heavies (accepts), the tube being releasably secured in position so that it can be temporarily retracted to relieve blockage of the heavies outlet.

Classifications:

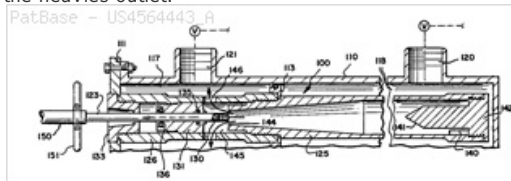
International (IPC 8-9): B04B5/00 B04C11/00 B04C3/06 B04C5/22 B04C5/28 D21D5/18 D21D5/24 (Advanced/Invention); B04C11/00 B04C3/00 B04C5/00 D21D5/00 (Core/Invention)

International (IPC 1-7): B04B5/00 B04C3/06 D21D5/02 D21D5/18 D21D5/20 D21D5/24

CPC: B04C3/06 B04C5/22 B04C11/00 D21D5/24

European: B04C11/00 B04C3/06 B04C5/22 B04C5/28 D21D5/24

US: 209/144 209/211 209/725 210/512.1

**Family:**

Publication number	Publication date	Application number	Application date
AU198430348 A1	19850117	AU19840030348	19840706
BRPI8403495 A	19850625	BR1984PI03495	19840712
CA1232587 A1	19880209	CA19840458837	19840713
DE3472692 D1	19880818	DE19843472692	19840713
EP0132141 A2	19850123	EP19840304812	19840713
EP0132141 A3	19850717	EP19840304812	19840713
EP0132141 B1	19880713	EP19840304812	19840713
ES534312 A0	19851201	ES19840534312	19840713
ES534312 A2	19851230	ES19840534312	19840713
ES8602999 A1	19851201	ES19840534312	19840713
FI74059 B	19870831	FI19840002839	19840713
FI74059 C	19871210	FI19840002839	19840713
FI842839 A	19850115	FI19840002839	19840713
FI842839 A0	19840713	FI19840002839	19840713
JP1813472 C3	19940118	JP19840146694	19840714
JP5009559 B4	19930205	JP19840146694	19840714

JP60039495 A2	19850301	JP19840146694	19840714
US4564443 A	19860114	US19850728164	19850430

Priority:

US19830513579 19830714 CA19840458837 19840713 US19850728164 19850430

Probable Assignee: BC ACQUISITION CORP

Assignee(s): (std): BLACK CLAWSON CO

Assignee(s): BLACK CLAWSON CO THE ; CHEMICAL BANK AS AGENT ; CENTRAL TRUST CO ; HYDROTILE MACHINERY CO ; CHEMICAL BANK AGENT AS ; BLACK CLAWSON COMPANY THE ; CENTRAL TRUST CO NA ; HYDROTILE MACHINERY CO (NOW KNOWN BC MFG CO INC) A ; BLISS TERRY L ; THERMO BLACK CLAWSON INC ; THE BLACK CLAWSON COMPANY ; HYDROTILE MACHINERY CO NOW KNOWN BC MFG CO INC AS ; THERMO BLACK CLAWSON INC A OF DELAWARE CORP ; BANK ONE DAYTON NATIONAL ASSOCIATION ; BC ACQUISITION CORP

Inventor(s): (std): BLISS TERRY L ; TERII ERU BURISU

Inventor(s): TERRY L BLISS

Agent(s): GRIFFITH HACK; GOWLING LAFLEUR HENDERSON LLP

Designated states: DE FR GB IT SE

26) Family number: 32194373 (EP1568861B1)

© PatBase

Title: BLOW-BY-GAS OIL SEPARATOR FOR COMBUSTION ENGINE

Abstract: Source: EP1568861A3 [DE] Die Erfindung bezieht sich auf eine Einrichtung zur Abscheidung von oel aus Blow-By-Gasen von Verbrennungsmotoren mittels mehrerer parallel geschalteter Zyklone. Ausgehend von den Nachteilen des bekannten Standes der Technik soll eine gattungsgemaesse Einrichtung geschaffen werden, die eine Verbesserung des Abscheideverhaltens in einem grossen Volumenstrombereich ermoeoglicht. Hierzu wird eine Loesung vorgeschlagen, bei der mindestens einer der parallel geschalteten Zyklone 2, 3, 4 mit einem die Gasauslassoeffnung 10b, 10c, 10d des Tauchrohres 10 abdeckenden, selbsttaetigen Ventil 15 ausgeruestet ist, dessen Verschlusselement unter definierter Vorspannung steht und in Abhaengigkeit von der Druckdifferenz zwischen dem an seiner Unter- und Oberseite anliegenden Druckes in eine oeffnungs- und Schliessstellung bewegbar ist, wobei mit zunehmender Druckdifferenz das Verschlusselement die Gasauslassoeffnung 10b, 10c, 10d zumindest ueber einen oeffnungsspalt freigibt und den jeweiligen Zyklon 2, 3, 4 zuschaltet. Mit abnehmender Druckdifferenz wird das Verschlusselement wieder in seine Schliessstellung zurueckbewegt und schaltet bei Erreichen der Schliessstellung den jeweiligen Zyklon 2, 3, 4 ab. Die einzelnen Zyklone einer Zyklonkolonne schalten sich selbsttaetig in Abhaengigkeit vom anliegenden Volumenstrom zu oder ab. Durch die vorgeschlagenen Massnahmen wird im Vergleich zu einem Einzelzyklon eine wesentliche Verbesserung des Abscheidegrades erreicht.

[EP1568861_A3_af001.tif]

Classifications:

International (ipc 8-9): F01M13/04 (Advanced/Invention); F01M13/00 (Core/Invention)

International (ipc 1-7): F01M13/04

CPC: B01D45/16 B04C5/13 B04C5/28 B04C11/00 F01M13/04 F01M2013/005 F01M2013/0427

European: F01M13/04 R01M13/00F4 R01M13/04E2

PatBase - EP1568861_A2

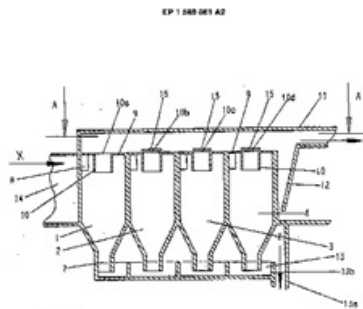


Fig. 1

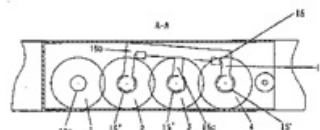


Fig. 2

Family:

Publication number	Publication date	Application number	Application date
AT542029 E	20120215	AT20050002437T	20050204
DE102004006082 A1	20050825	DE200410006082	20040206
DE502005012347 D1	20120315	DE200550012347T	20050204
EP1568861 A2	20050831	EP20050002437	20050204
EP1568861 A3	20071107	EP20050002437	20050204
EP1568861 B1	20120118	EP20050002437	20050204

Priority:

DE200410006082 20040206 EP20050002437 20050204

Probable Assignee: POLYTEC AUTOMOTIVE GMBH AND CO KG

Assignee(s): (std): POLYTEC AUTOMOTIVE GMBH AND CO K ; POLYTEC AUTOMOTIVE GMBH AND CO KG ; POLYTEC RIESSELMANN GMBH AND CO KG

Assignee(s): POLYTEC AUTOMOTIVE GMBH AND 38 CO KG ; POLYTEC PLASTICS GERMANY GMBH AND CO KG

Inventor(s): (std): JANSEN HANS ; JANSSEN HANS

Agent(s): VON KREISLER SELTING WERNER PARTNERSCHAFT VON PATENTANWAELTEN U RECHTSANWAELTEN

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 MK NL PL PT RO SE SI SK TR YU

27) Family number: 19836373 (FR905853A)

© PatBase

Title: GROUPE SEPARATEUR DE POUSSIERE CENTRIFUGE A MARCHE CONTROLEE DUST SEPARATOR GROUP ON CONTROLLED CENTRIFUGAL (Machine translation)

Classifications:

International (IPC 8-9): B04C11/00 B04C5/28 F02M35/022 (Advanced/Invention); B04C11/00 B04C5/00 F02M35/02 (Core/Invention)

International (IPC 1-7): B04C11/00 B04C5/28

CPC: B04C5/28 B04C11/00 F02M35/022

European: B04C11/00 B04C5/28 F02M35/022

Family:

Publication number	Publication date	Application number	Application date
BE456402 A	00000000		00000000
FR905853 A	19451217		19440713

Priority:

19420924

Inventor(s): (std):

FEIFEL EUGEN

28) Family number: 10102377 (US5667687A)

© PatBase

Title: Cyclone

Abstract: A cyclone having a deblocking device comprising a rod relatively moveable into or out of an orifice to dislodge any solid matter therein. The rod may be provided with a formation to enhance the dislodgement.

Classifications:

International (IPC 8-9): B04C11/00 B04C5/13 B04C5/22

B04C5/28 (Advanced/Invention);

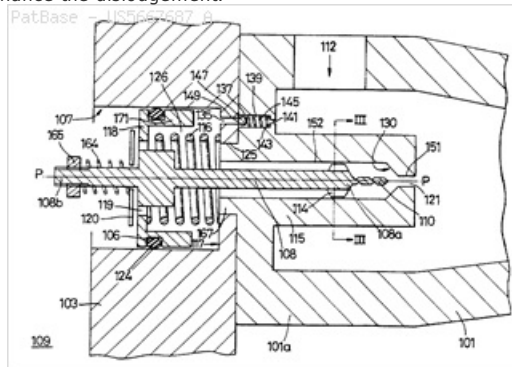
B04C11/00 B04C5/00 (Core/Invention)

International (IPC 1-7): B01D21/26 B04C B04C5/00 B04C5/22

CPC: B04C5/13 B04C5/22 B04C5/28 B04C11/00

European: B04C11/00 B04C5/13 B04C5/22 B04C5/28

US: 209/721 209/732 210/108 210/512.1 210/512.2 210/97



Family:

Publication number	Publication date	Application number	Application date
GB2296207 A1	19960626	GB19950026007	19951220
GB2296207 B2	19970813	GB19950026007	19951220
GB9426149 A0	19950222	GB19940026149	19941223
GB9526007 A0	19960221	GB19950026007	19951220
NO310600 B1	20010730	NO19950005181	19951220
NO955181 A	19960624	NO19950005181	19951220
NO955181 A0	19951220	NO19950005181	19951220
NO955181 L	19960624	NO19950005181	19951220
US5667687 A	19970916	US19950574018	19951218

Priority:

GB19940026149 19941223

Probable Assignee: AXSIA SERCK BAKER LTD

Assignee(s): (std): SERCK BAKER LTD

Assignee(s): AXSIA SERCK BAKER LTD ; SERCK BAKER LIMITED

Inventor(s): (std): LANGE NEVILLE ERNEST ; LANGE NEVILLE E

Inventor(s): NEVILLE ERNEST LANGE

29) Family number: 17924397 (US4872973A)

© PatBase

Title: Cyclone classifier

Abstract: In a cyclone classifier wherein the material to be processed is swirled in a tubular casing having a conical lower portion and classified, a cylindrical body is provided in the casing, so as to surround the lower end of a fluid outlet pipe and extends downwardly below an inlet port for the material to be processed, so that the sectional area of passage for the material to be processed swirled in the casing will be made smaller, thus increasing the classifying point while keeping the pressure loss at a minimum. From another aspect, annular pipes formed with fluid inlet ports are provided around the outer periphery of a lower part of the casing so as to communicate with the casing so that gases or liquids will be blown into the

lower part of the casing through these pipes to form a swirling current, thus allowing the material to be processed to be reclassified thereby increasing the classifying point.

Classifications:

International (IPC 8-9): B04C11/00 B04C3/00 B04C5/10 B04C5/103 B04C5/12 B04C5/13 B04C5/28 (Advanced/Invention); B04C11/00 B04C5/00 (Core/Invention)

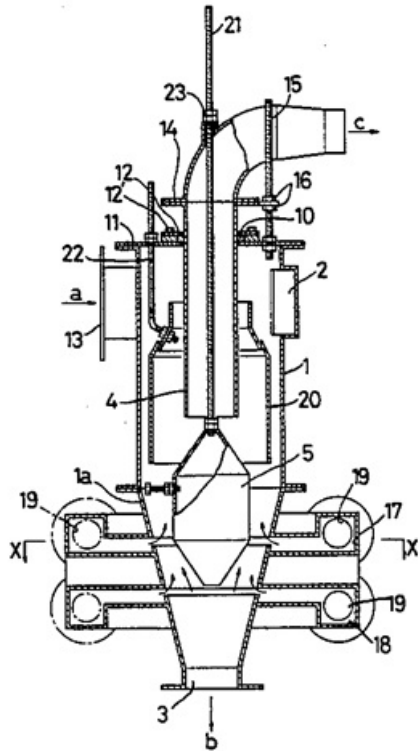
International (IPC 1-7): B04C3/00 B04C5/103 B04C5/12

CPC: B04C5/10 B04C5/103 B04C5/13 B04C5/28 B04C11/00 B04C2005/133

European: B04C11/00 B04C5/10 B04C5/103 B04C5/13 B04C5/28 L04C5/13A

US: 209/144 209/154 209/716 209/719 209/721

PatBase - US4872973_A



Family:

Publication number	Publication date	Application number	Application date
CA1301702 A1	19920526	CA19870537941	19870525
JP2009990 Y	19941021	JP19870051883U	19870406
JP5025717 Y2	19930629	JP19870051883U	19870406
JP63160956 U1	19881020	JP19870051883U	19870406
US4872973 A	19891010	US19890315237	19890223

Priority:

JP19870051883 19870406 JP19870051883U 19870406 US19870051373 19870519
CA19870537941 19870525

Probable Assignee: KUBOTA LTD

Assignee(s): (std): KUBOTA LTD

Assignee(s): NAKANO MAMORU ; FUSE KAZUO ; GANZE AKIRA ; IKEBUCHI IWAO

Inventor(s): (std): NAKANO MAMORU ; GANZE AKIRA ; FUSE KAZUO ; IKEBUCHI IWAO

Agent(s): FETHERSTONHAUGH AND CO

30) Family number: 73251408 (CN109351496A)

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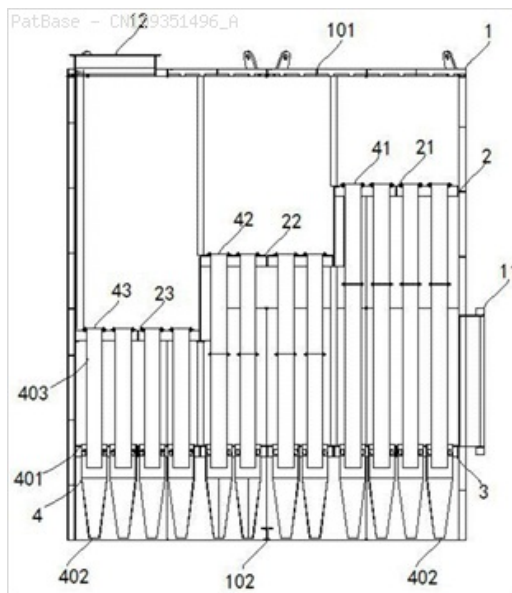
Title: MULTI-STAGE CYCLONE DUST COLLECTOR

Abstract: The invention belongs to the technical field of bio-energy, and particularly relates to a multi-stage cyclone dust collector. According to the technical scheme of the multi-stage cyclone dust collector, at least two sets of cyclone collectors are arranged between an upper base and a lower base; upper base sections are arranged on the upper base and correspond to the sets of cyclone collectors in set number; and the upper base section close to an air inlet of an air inlet chamber is higher than the adjacent upper base sections. The multi-stage cyclone dust collector has the advantage that different from an existing single-cylinder cyclone dust collector, the multi-stage cyclone dust collector adopts a multi-stage and multi-cylinder structure, so that the filtration quality of the flue gas is greatly improved. The flue gas enters from the middle and lower part of the dust collector, then passes through a spiral impeller and rotates down in a cone, while the ash in the flue gas is lowered by gravity to a spiral conveyor at the bottom of the dust collector. The filtered flue gas rises from a seamless tube in the middle of the cone, and enters the next device from an upper portion opening of the dust collector.

Classifications:

International (IPC 8-9): B04C11/00 B04C5/28 (Advanced/Invention)

CPC: B04C5/28 B04C11/00



Family:

Publication number	Publication date	Application number	Application date
CN109351496 A	20190219	CN201811293847	20181101

Priority:

CN201811293847 20181101

Probable Assignee: GUANGDONG BAOLV TAIHUA BIOENERGY CO LTD

Assignee(s): (std): GUANGDONG BAOLV TAIHUA BIOENERGY CO LTD

Assignee(s): PAUL GREEN BIO ENERGY CO LTD GUANGDONG TEVA ; GUANGDONG BAOLV TAIHUA BIOENERGY CO

Inventor(s): (std): ZHOU PENG ; GAO HUIMING ; LIU ZHENG ; JIANG CHUNSHUO

31) Family number: 41634426 (US2011031194A)

© PatBase

Title: SEPARATION SYSTEM AND METHOD FOR SEPARATING A FLUID MIXTURE WITH THIS SEPARATING SYSTEM

Abstract: A separation system for separating a fluid mixture includes a uniaxial cyclonic separator (2) having a first inlet (16) for receiving a fluid mixture, a separation chamber (18) for separating the fluid mixture by cyclonic action into a dense first fluid and a less dense second fluid, a first outlet (22) for the first fluid and a second outlet (26) for the second fluid. The system further includes a reverse flow cyclonic separator (32) having a second inlet (30) for receiving the first fluid from the first outlet (22), a separation chamber for separating the first fluid by cyclonic action into a dense third fluid and a less dense fourth fluid, a third outlet (34) for the third fluid and a fourth outlet (36) for the fourth fluid.

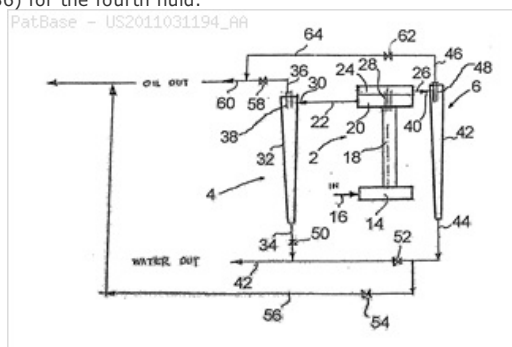
Classifications:

International (IPC 8-9): B01D17/02 B01D17/038 B01D19/00 B04C11/00 B04C3/00 B04C3/04 B04C3/06 B04C5/00 B04C5/24 B04C5/26 B04C5/28 B04C7/00 C02F1/38 C02F101/32 C02F103/36 (Advanced/Invention); B04C3/00 C02F101/32 C02F103/36 (Advanced/Non-invention); B04C3/00 B04C5/00 B04C7/00 (Core/Invention)

CPC: C02F1/38 B04C3/00 B04C3/04 B04C5/00 B04C5/24 B04C5/26 B04C3/06 B04C11/00 B04C2003/003 B01D221/04 C02F2101/32 C02F2103/365 B01D17/0217 B04C5/28 B04C7/00

European: B01D17/02H B04C3/00 B04C3/04 B04C5/00 B04C5/24 B04C5/26 B04C7/00

US: 209/12.1 209/725 209/729 209/730 210/137 210/137S 210/143 210/188 210/294 210/294S 210/304 210/320 210/320S 210/322 210/512.1 210/512.100S 210/512.2 210/512.200S 210/739 210/787 210/788 210/790 210/806 55/459.1 95/210 95/212 96/182 96/182S



Family:

Publication number	Publication date	Application number	Application date
BRPI0906771 A2	20150714	BR2009PI06771	20090105
CA2712198 AA	20090730	CA20092712198	20090105
DE602009028661 D1	20150219	DE200960028661T	20090105
EA018549 B1	20130830	EA20100001193	20090105
EA201001193 A1	20101230	EA20100001193	20090105
EP2247388 A1	20101110	EP20090703366	20090105
EP2247388 B1	20141231	EP20090703366	20090105
GB200801045 A0	20080227	GB20080001045	20080122
GB2457012 A1	20090805	GB20080001045	20080122
GB2457012 B2	20120912	GB20080001045	20080122
MX2010007960 A1	20100810	MX20100007960	20090105
MY150471 A	20140130	MY20100003284	20090105
US2011031194 AA	20110210	US20090863703	20090105
US2014027385 AA	20140130	US20130959097	20130805
US8747679 BB	20140610	US20130959097	20130805
WO09092998 A1	20090730	WO2009GB00016	20090105

Priority:

Probable Assignee: CALTEC LTD

Assignee(s): (std): ALI BEG MIRZA NAJAM ; BEG MIRZA NAJAM ALI ; CALTEC LTD ; SARSHAR MIR MAHMOOD ; WORDSWORTH CARL

Assignee(s): CALTEC LTD CRANFIELD ; CALTEC LIMITED

Inventor(s): (std): BEG MIRZA NAJAM ALI ; WORDSWORTH CARL ; SARSHAR MIR MAHMOOD ; ALI BEG MIRZA NAJAM ; MAHMOOD SARSHAR MIR ; CARL WORDSWORTH

Inventor(s): MIRZA NAJAM ALI BEG ; MIR MAHMOOD SARSHAR

Agent(s): RAYNOR SIMON MARK; FAY SHARPE LLP

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

32) Family number: 11630444 (DE4404661A1)

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Title: Arrangement for separation in a cyclone

Abstract: The cyclone (2,3) is positioned so that its symmetry axis with the hopper points outwards at right angles to a common vertical rotational axis (1), and the cyclone itself is rotatable. the symmetry axis of the cyclone includes an angle of 90 deg. or less with the rotational axis. The arrangement may comprise two or more cyclones which are located symmetrically to the rotational axis in one plane.

Classifications:

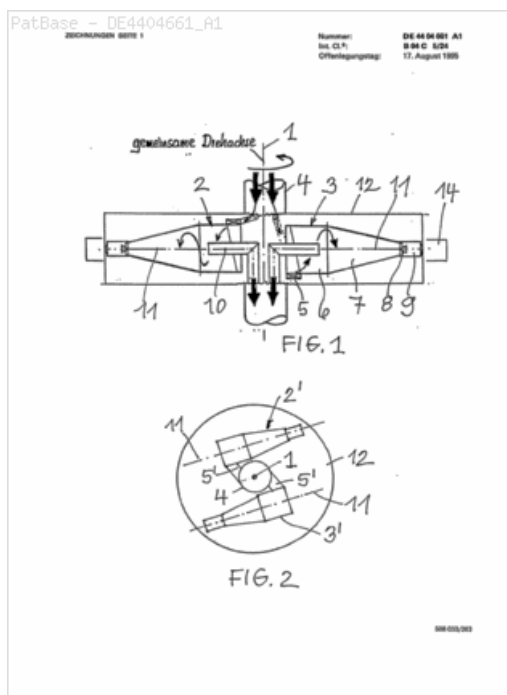
International (ipc 8-9): B04C11/00 B04C5/00 B04C5/26 B04C5/28 (Advanced/Invention);

B04C11/00 B04C5/00 (Core/Invention)

International (ipc 1-7): B04C5/24 B04C5/30

CPC: B04C5/00 B04C5/26 B04C5/28 B04C11/00

European: B04C11/00 B04C5/00 B04C5/26 B04C5/28



Family:

Publication number	Publication date	Application number	Application date
DE4404661 A1	19950817	DE19944404661	19940214

Priority:

DE19944404661 19940214

Probable Assignee: STIFTUNG INST FUER WERKSTOFFTE

Assignee(s): (std): STIFTUNG INST F WERKSTOFFTE ; STIFTUNG INST FUER WERKSTOFFTE

Assignee(s): STIFTUNG INSTITUT FUER WERKSTOFFTECHNIK 28359 BREM ; STIFTUNG INSTITUT FUER WERKSTOFFTECHNIK 28359 BREMEN DE

Inventor(s): (std): SCHRECKENBERG PETER DIPL ING ; FRITSCHING UDO DR ING ; BAUCKHAGE KLAUS PROF DR ING

Inventor(s): FRITSCHING UDO DR ING 28205 BREMEN DE ; BAUCKHAGE KLAUS PROF DR ING 28355 BREMEN DE ; SCHRECKENBERG PETER DIPL ING 28277 BREMEN DE

33) Family number: 56479481 (US2016271627A)

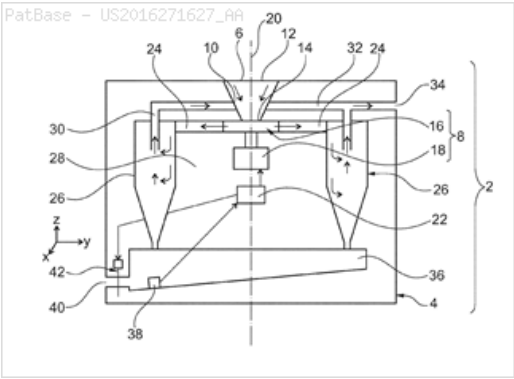
© PatBase

Title: SWIMMING POOL WATER FILTRATION DEVICE

Abstract: The invention relates to a device comprising at least three hydrocyclones and a pump. The pump comprises a centrifugal turbine, an electric motor capable of driving the turbine in rotation, a distributor capable of collecting the water recirculated by the turbine and introducing the water into the hydrocyclones. The distributor comprises at least one distribution channel for each hydrocyclone, each channel extending from an inlet orifice formed in a central circular housing to an outlet orifice formed in a wall of a hydrocyclone, and discharging into the hydrocyclone tangentially to the wall of this hydrocyclone. The centrifugal turbine is housed inside the central housing of the distributor, opposite the inlet orifices of the channels.

Classifications:

International (IPC 8-9): B01D33/06 B04C11/00 B04C5/04 B04C5/28 B04C9/00 C02F1/38 E04H4/12 E04H4/16 (Advanced/Invention)
CPC: E04H4/1245 B04C5/28 B04C5/04 B04C9/00 B04C11/00 B04C2009/005
US: 1/1 210/96.1



Family:

Publication number	Publication date	Application number	Application date
DE602013016548 D1	20170302	DE201360016548T	20131112
EP2919915 A1	20150923	EP20130792886	20131112
EP2919915 B1	20170111	EP20130792886	20131112
ES2621670 T3	20170704	ES20130792886T	20131112
FR2997870 A1	20140516	FR20120060890	20121115
FR2997870 B1	20150116	FR20120060890	20121115
US2016271627 AA	20160922	US20130442280	20131112
US9656277 BB	20170523	US20130442280	20131112
WO14076098 A1	20140522	WO2013EP73657	20131112

Priority:

FR20120060890 20121115 EP20130792886 20131112 WO2013EP73657 20131112

Probable Assignee: CHIRTU STEFAN

Assignee(s): (std): CHIRTU STEFAN

Assignee(s): STEFAN CHIRTU

Inventor(s): (std): CHIRTU STEFAN

Inventor(s): STEFAN CHIRTU ; A COMPLETER

Agent(s): GIE INNOVATION COMPETENCE GROUP; LEHMANN MARIA ISABEL; BREVINNOV; OCCHIUTI AND ROHLICEK LLP; COLOMBO MICHEL 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 IR 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 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

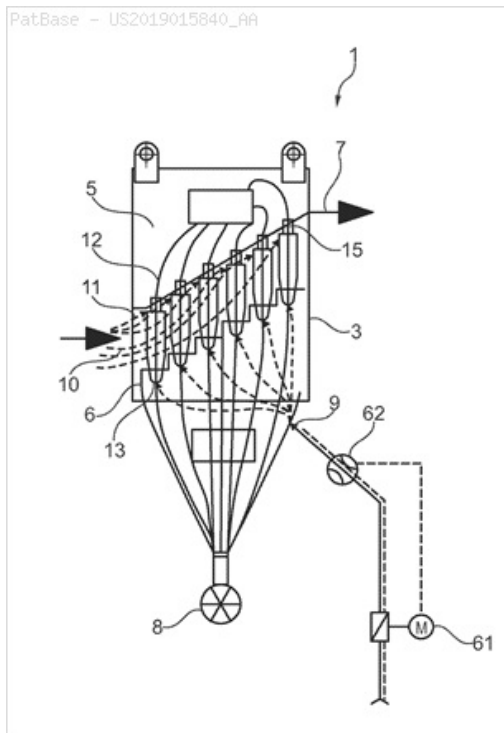
34) Family number: 68877486 (US2019015840A) © PatBase

Title: METHOD FOR OPERATING A MULTI-CYCLONE FOR THE SEPARATION OF FINE AND VERY FINE GRAIN AS WELL AS A MULTI-CYCLONE

Abstract: The invention relates to a multi-cyclone and to a method for operating such a multi-cyclone for separating fine material and very fine material. In this context, a multi-cyclone according to the invention has multiple individual cyclones which are of essentially identical construction and which are housed in a housing that has an upper and a lower chamber. Via a supply into the lower chamber it is possible to introduce in a targeted manner cyclone regulating air which can be used to set the quantity, the fineness and/or the purity of the material separated by means of the multi-cyclone.

Classifications:

International (IPC 8-9): B02C15/00 B02C23/14 B04C11/00 B04C5/12 B04C5/14 B04C5/185 B04C5/28 (Advanced/Invention)
CPC: B04C5/12 B04C5/14 B02C2015/002 B02C23/14 B02C15/007 B04C5/185 B04C5/28 B04C11/00 B04C2009/002
US: 1/1 241/19

**Family:**

Publication number	Publication date	Application number	Application date
CA3007583 AA	20180606	CA20173007583	20170908
CN109641217 A	20190416	CN201780008607	20170908
EA201800353 A1	20181130	EA20180000353	20170908
EP3292912 A1	20180314	EP20160188007	20160909
ID201812455 A	20181123	ID2018P0005586	20170908
IN201817021154 A	20190315	IN201817021154	20180606
SG11201804823R A1	20180730	SG20181104823	20170908
US2019015840 AA	20190117	US20170067373	20170908
WO18046640 A1	20180315	WO2017EP72546	20170908

Priority:

EP20160188007 20160909 WO2017EP72546 20170908

Probable Assignee: LOESCHE GMBH**Assignee(s):** (std): LOESCHE GMBH**Assignee(s):** RUHKAMP WINFRIED ; WULFERT HOLGER ; BATZ ANDRE**Inventor(s):** (std): BATZ ANDRE ; RUHKAMP WINFRIED ; BAETZ ANDRE ; WULFERT HOLGER**Inventor(s):** BAETZ ANDR**Agent(s):** MLT AIKINS LLP; WUNDERLICH RAINER; LANNY SETIAWAN MBA MGMT MA LPC MA LMFT; HEIM FLORIAN 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 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

35) Family number: 55303489 (US2013319952A)

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Title: DEOILING HYDROCYCLONE

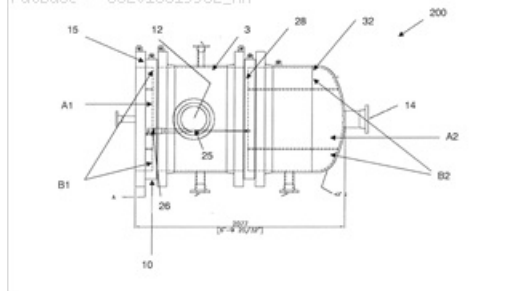
Abstract: A method of controlling a hydrocyclone system for separating a fluid mixture wherein the system includes a separator vessel for receiving the fluid mixture and performing a primary separation of the more dense and the less dense fluid phase thereby forming an interface within the separator, and a hydrocyclone apparatus having a first and second hydrocyclone compartments to separate the phases. The method includes alternating the flow rate through the hydrocyclone apparatus, alternating the interface or fluid mixture level in the separator vessel between a first level and a second level; and alternating the second hydrocyclone compartment between an open state in flow communication with the first hydrocyclone compartment and a closed state in isolation from the first compartment.

Classifications:**International (IPC 8-9):** B01D21/26 B04C11/00 B04C5/28 B04C7/00

C02F1/38 (Advanced/Invention);

C02F101/32 (Advanced/Non-invention)

CPC: B04C5/28 B04C11/00 B01D17/0217 B01D17/12**US:** 210/512.1 210/512.2 210/739 210/741 210/787

**Family:**

Publication number	Publication date	Application number	Application date
US2013319952 AA	20131205	US20120486970	20120601
WO13180988 A1	20131205	WO2013US41611	20130517

Priority:

US20120486970 20120601

Probable Assignee: NATIONAL OILWELL VARCO LP**Assignee(s):** (std): NAT OILWELL VARCO LP ; WOLF MARK E**Assignee(s):** NATIONAL OILWELL VARCO LP**Inventor(s):** (std): WOLF MARK E**Agent(s):** FANUCCI ALLAN A 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 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

36) Family number: 15326559 (US5154826A)

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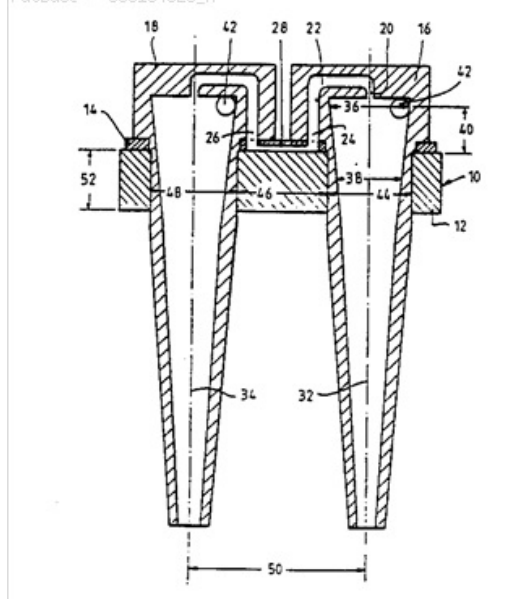
Title: HYDROCYCLONE OVERFLOW TRANSPORT

Abstract: PCT No. PCT/AU88/00359 Sec. 371 Date Mar. 14, 1990 Sec. 102(e) Date Mar. 14, 1990 PCT Filed Sep. 15, 1987 PCT Pub. No. WO89/02312 PCT Pub. Date Mar. 23, 1989. Fluid separator apparatus comprising at least one cyclone (16A) for separating a fraction of less dense component(s) from predominantly fluid mixtures having at least one predominantly liquid component, said cyclone/s being provided with means defining at least one feed inlet (64), means defining at least one overflow outlet (72) for discharge of overflow comprising predominantly less dense component(s) of fluid mixtures, means defining at least one underflow outlet (66) for discharge of underflow comprising predominantly denser component(s) of said fluid mixtures, overflow conduit means (74) to receive and conduct said overflow away from said cyclone, said overflow conduit means (74) being connected securably to said overflow outlet means (72) of said cyclone (16A), support means (54) for supporting said cyclone/s in the form of a plate of pre-selected dimensions adapted to securably but releasably receive the body/bodies of said cyclone/s (16A) and receiving and transport means (78) to receive and transport said overflow away from said overflow conduit means (74) said receiving and transport means (78) being connected securably but releasably to said overflow conduit means. Additionally, said support means may form part of or be located on or within a pressure retaining vessel enclosing at least part of said cyclone/s.

Classifications:**International (IPC 8-9):** B01D19/00 B04C11/00 B04C5/12

B04C5/28 (Advanced/Invention);

B01D19/00 B04C11/00 B04C5/00 (Core/Invention)

International (IPC 1-7): B04C5/12 B04C5/28**CPC:** B01D19/0057 B04C5/12 B04C5/28 B04C11/00**European:** B01D19/00P4B B04C11/00 B04C5/12 B04C5/28**US:** 209/144 209/211 209/728 210/335 210/512.1 210/512.2 210/787 55/459.1**Family:**

Publication number	Publication date	Application number	Application date
AT96057 E	19931115	AT19880908107T	19880915
AU198825213 A1	19890417	AU19880025213	19880915
AU615689 B2	19911010	AU19880025213	19880915
CA1329371 A1	19940510	CA19880577365	19880914
DE3885106 D1	19931125	DE19883885106	19880915

EP0395647 A1	19901107	EP19880908107	19880915
EP0395647 A4	19910313	EP19880908107	19880915
EP0395647 B1	19931020	EP19880908107	19880915
JP3500143 T2	19910117	JP19880507821T	19880915
MX171001 B	19930924	MX19880013045	19880915
NO175292 B	19940620	NO19900001205	19900314
NO175292 C	19940928	NO19900001205	19900314
NO901205 A	19900314	NO19900001205	19900314
NO901205 A0	19900314	NO19900001205	19900314
NO901205 L	19900314	NO19900001205	19900314
US5154826 A	19921013	US19900490693	19900314
WO8902312 A1	19890323	WO1988AU00359	19880915

Priority:

AU1987PI04357 19870915 CA19880577365 19880914 WO1988AU00359 19880915
EP19880908107 19880915

Probable Assignee: BAKER HUGHES LTD

Assignee(s): (std): DELAWOOD PTY LTD ; MERPRO MONSTASSA LIMITED ; MERPRO MONSTASSA LTD ; MERPRO MONTASSA LIMITED ; MERPRO MONTASSA LTD

Assignee(s): PRENDERGAST GAVAN JAMES JOSEPH ; WEBB DAVID ANDREW ; BAKER HUGHES LTD ; MERPRO MONTASSA LTD MONTROSE ANGUS GB

Inventor(s): (std): DAVID ANDREW WEBB ; GAVAN JAMES JOSEPH PRENDERGAST ; PRENDERGAST GAVAN JAMES JOSEPH ; PRENDERGAST GAVIN JAMES JOSEPH ; WEBB DAVID ANDREW ; WEBB DAVID A ; PRENDERGAST GAVIN J J ; PRENDERGAST GAVAN J J

Inventor(s): PRENDERGAST GAVAN JAMES JOSEPH MOUNT WAVERLEY... ; WEBB DAVID ANDREW NORTHCOTE VIC 3070 AU ; PRENDERGAST GAVAN JAMES JOSEPH MOUNT WAVERLEY VIC ; PRENDERGAST GAVAN JAMES JOSEPH MOUNT WAVERLEY VIC 3149 AU

Agent(s): CALLINANS; FISHER ADAMS KELLY CALLINANS; SPRUSON AND FERGUSON; GOWLING LAFLEUR HENDERSON LLP

Designated states: AT AU BB BE BG BJ BR CF CG CH CM DE DK FI FR GA GB HU IT JP KP KR LI LK LU MG ML MR MW NL NO RO SD SE SN SU TD TG US

37) Family number: 4412565 (US5507955A)

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Title: Method of operating hydrocyclone systems by adding water to maintain flow rates

Abstract: PCT No. PCT/GB91/00309 Sec. 371 Date Mar. 16, 1993 Sec. 102(e) Date Mar. 16, 1993 PCT Filed Feb. 28, 1991 PCT Pub. No. WO91/12893 PCT Pub. Date Sep. 5, 1991. In a method of operating a bank of parallel hydrocyclone separators for deoiling water, each separator has a mixture inlet, an overflow oil outlet and an underflow water outlet. The flow through at least one separator is sensed, either directly, or indirectly by sensing the pressure difference across the separator. If the flow approaches a threshold below which there is insufficient flow for satisfactory operation, an additional supply of water is fed to the mixture inlet to the separators.

Classifications:

International (IPC 8-9): B01D17/02 B01D17/038 B04C11/00 B04C5/28 E21B43/34 (Advanced/Invention);

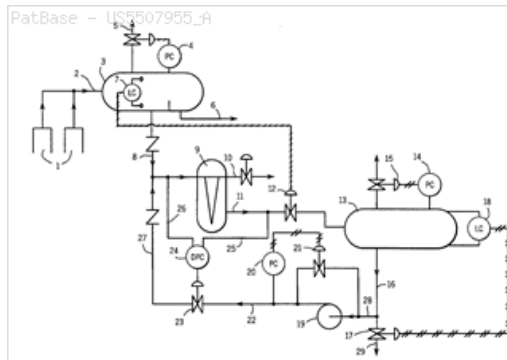
B01D17/02 B04C11/00 B04C5/00 E21B43/34 (Core/Invention)

International (IPC 1-7): B01D17/02 B01D17/038 B04C11/00 E21B43/34

CPC: B01D17/0217 B04C5/28 B04C11/00 E21B43/34

European: B01D17/02H B04C11/00 B04C5/28 E21B43/34

US: 210/512.2 210/739 210/741 210/788 210/805



Family:

Publication number	Publication date	Application number	Application date
AT129438 E	19951115	AT19910905136T	19910228
DE69114125 D1	19951130	DE19916014125	19910228
DE69114125 T2	19960620	DE19916014125T	19910228
DK0516715 T3	19960205	DK19910905136T	19910228
EP0516715 A1	19921209	EP19910905136	19910228
EP0516715 B1	19951025	EP19910905136	19910228
GB9004714 A0	19900425	GB19900004714	19900302
NO303208 B1	19980615	NO19920003344	19920827
NO923344 A	19920827	NO19920003344	19920827
NO923344 A0	19920827	NO19920003344	19920827
NO923344 L	19920827	NO19920003344	19920827
US5507955 A	19960416	US19930923912	19930316
WO9112893 A1	19910905	WO1991GB00309	19910228

Priority:

GB19900004714 19900302 WO1991GB00309 19910228

Probable Assignee: BAKER HUGHES LTD

Assignee(s): (std): BAKER HUGHES LTD ; MERPRO MONTASSA LTD ; STATEFOCUS LTD

Assignee(s): STATEFOCUS LIMITED ; MERPRO MONTASSA LTD MONTROSE ANGUS GB ; MERPO MONTASSA LTD ; MERPRO MONTASSA LIMITED

Inventor(s): (std): WEBB DAVID ; WEBB DAVID A ; WEBB DAVID ANDREW

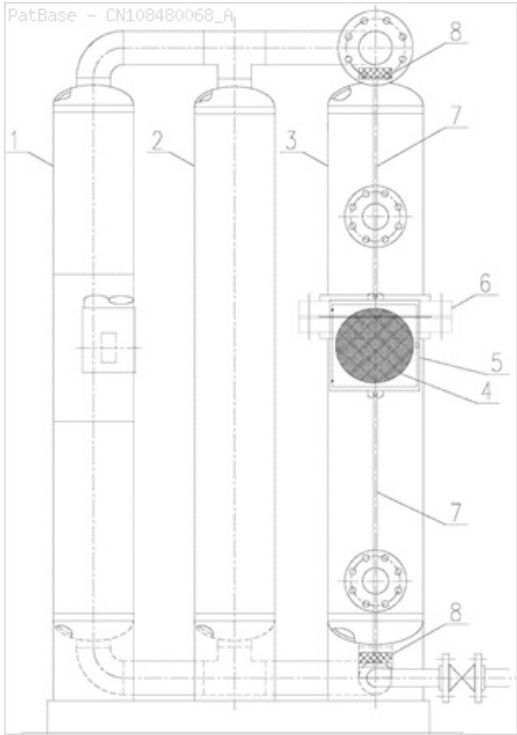
Inventor(s): WEBB DAVID ANDREW CLIFTON BRISTOL AVON BS8 4DL GB
Designated states: AT BE CH DE DK ES FR GB GR IT LI LU NL NO SE US

38) Family number: 70989591 (CN108480068A) © PatBase

Title: GAS-LIQUID CYLINDRICAL CYCLONE CAPABLE OF ACHIEVING ADJUSTABLE TYPE FLOATER AUTOMATIC LIQUID LEVEL CONTROL

Abstract: The invention discloses a gas-liquid cylindrical cyclone capable of achieving adjustable type floater automatic liquid level control. The gas-liquid cylindrical cyclone comprises a first pipe column,a second pipe column, a third pipe column and an adjustable type floater automatic liquid level control device, wherein the first pipe column, the second pipe column and the third pipe column are arranged in parallel and communicate with one another. The adjustable type floater automatic liquid level control device comprises a floating ball box, an adjustable type floating ball and control valves,wherein the floating ball box is arranged in the third pipe column; the adjustable type floating ball is arranged in the floating ball box; and the control valves are arranged inside an air outlet pipe and a liquid outlet pipe correspondingly. The upper end and the lower end of the floating ball box are connected to the control valves located inside the air outlet pipe and the liquid outlet pipethrough valve rods correspondingly. By means of the gas-liquid cylindrical cyclone, the efficient gas-liquid separation technology is achieved; liquid separation precision is good; work stability is good; the discharging flow of gas and liquid can be controlled automatically, and the ratio of discharged oil to water can be directly observed through a liquid level meter; and meanwhile, the floatingball is in an adjustable type, and multiple types of working conditions different in gas-liquid mass ratio can be met.

Classifications:
International (IPC 8-9): B04C11/00 B04C5/28 (Advanced/Invention)
CPC: B04C5/28 B04C11/00



Family:

Publication number	Publication date	Application number	Application date
CN108480068 A	20180904	CN201810065847	20180123

Priority:

CN201810065847 20180123

Probable Assignee: BOMESC OFFSHORE ENGINEERING CO LTD

Assignee(s): (std) BOMESC OFFSHORE ENGINEERING CO LTD

Assignee(s): BO MAIKE MARINE ENGINEERING CO LTD

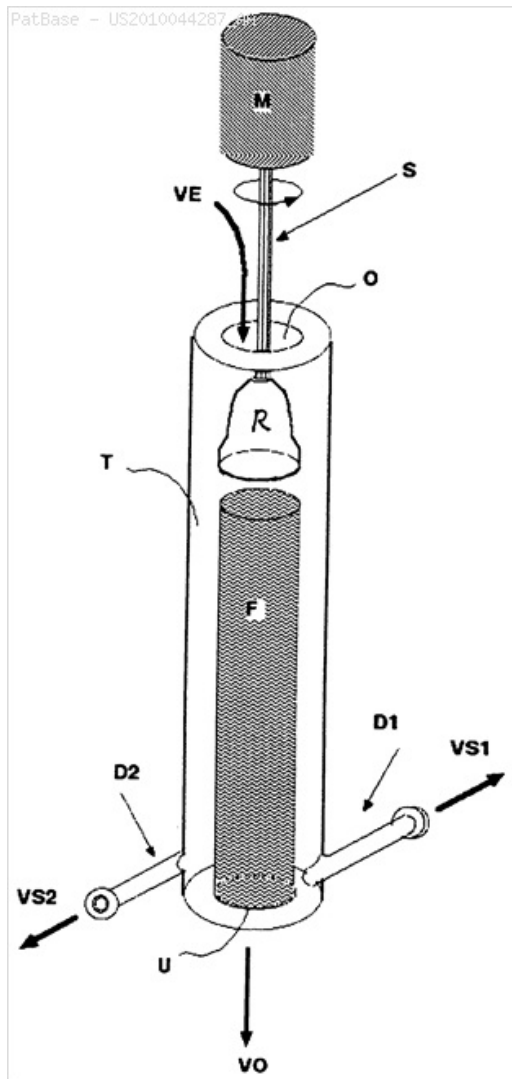
Inventor(s): (std) ZHANG XIANG ; XIAO YIMENG ; WANG NA ; TIAN YANNI ; SHI LEI ; LI YUNPENG

39) Family number: 34952615 (US2010044287A) © PatBase

Title: HYDRO CYCLONE DEVICE AND HYDRO CYCLONE INSTALLATION

Abstract: A hydro cyclone device comprises a vertical separator tube (T) having an upper opening for the liquid supply and its upper front side (O) and an opening for the clear water drainage at its lower front side (U), at least a port (O) for concentrated suspension and the lower end of the separator tube (T) as well as a filter element (F) hydraulically connected to the clear water drainage and arranged centred in the separator tube (T). In the separator tube (T) between the upper opening (O) for the liquid supply and the filter element (F), a rotational element (R) is arranged axially centred with respect to the separator tube and rotationally supported which filter element is adapted to be driven an variable rotational speed. Hydro cyclone installation comprises a plurality of such hydro cyclone devices being hydraulically connected in parallel.

Classifications:
International (IPC 8-9): B01D21/26 B01D29/60 B01D29/88 B01D36/00 B04B5/12 B04C11/00 B04C3/04 B04C5/00 B04C5/28 B04C9/00 (Advanced/Invention); B04B5/00 B04C11/00 B04C3/00 B04C5/00 B04C9/00 (Core/Invention)
CPC: B04C2009/004 B04C2009/007 B04C9/00 B04C5/28 B04C11/00
European: B04C11/00 B04C5/28 B04C9/00 L04C9/00E L04C9/00G
US: 210/306 210/306S 210/97 210/97P

**Family:**

Publication number	Publication date	Application number	Application date
CN101657263 A	20100224	CN200780051690	20071128
DE202007002541 U1	20070705	DE200720002541U	20070221
EP2125240 A1	20091202	EP20070856298	20071128
JP2010519028 T2	20100603	JP20090550658T	20071128
KR20100014863 A	20100211	KR20097017894	20071128
US2010044287 AA	20100225	US20070528072	20071128
WO08101532 A1	20080828	WO2007EP10333	20071128

Priority:

DE200720002541U 20070221 WO2007EP10333 20071128

Probable Assignee: BLUM HOLGER CH**Assignee(s):** (std): BLUM HOLGER ; BLUM HOLGER CH**Inventor(s):** (std): HOLGER BLUM ; BLUM HOLGER**Agent(s):** KIRSCHNER KLAUS DIETER; NIXON PEABODY LLP; KIRSCHNER KLAUS D

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

40) Family number: 8465625 (NL8602941A)

© PatBase

Title: CYCLONE TO REMOVE DUST FROM GAS - HAS TANGENTIAL, PREF. RECTANGULAR SECTION, INLET TO CYLINDRICAL HOUSING WALL WITH SMOOTH TRANSITION TO CONICAL WALL

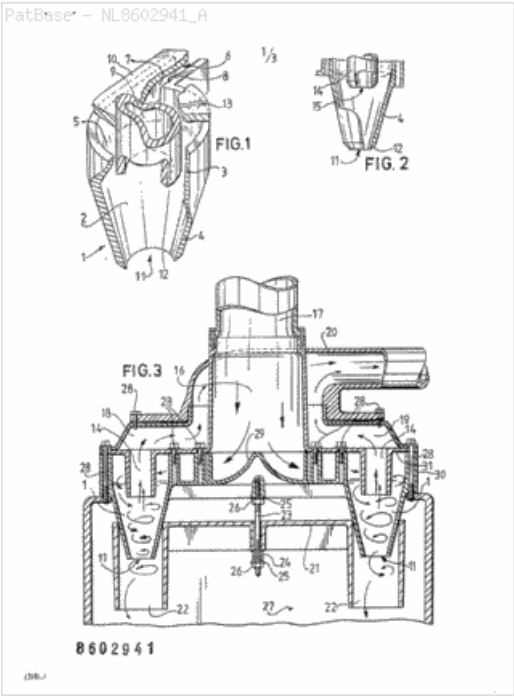
Abstract: The cyclone for removing dust from dust-carrying gas comprises a housing with a cylindrical and a (downwardly converging truncated) conical portion. The tangential gas inlet duct has at least one but preferably two (opposite) side walls parallel to a plane tangential to the cylindrical portion, thus duct preferably having a rectangular section. The inner surface of the inner duct side wall pref. forms an acute-angled edge with the inner surface of the portion. The two portions preferably connect via a smoothly curved transition.

Classifications:**International (IPC 8-9):** B04C11/00 B04C5/04 B04C5/081

B04C5/28 (Advanced/Invention);

B04C11/00 B04C5/00 (Core/Invention)

International (IPC 1-7): B01D45/16 B04C5/04 B04C5/28**CPC:** B04C5/04 B04C5/081 B04C5/28 B04C11/00



Family:

Publication number	Publication date	Application number	Application date
 NL8602941 A	19880616	NL19860002941	19861119

Priority:

NL19860002941 19861119

Probable Assignee: ANTONIUS FRANSISCUS MARIA VAN
Assignee(s): (std): ANTONIUS FRANSISCUS MARIA VAN
Assignee(s): ANTONIUS FRANSISCUS MARIA VAN DE WATER TE NUENEN

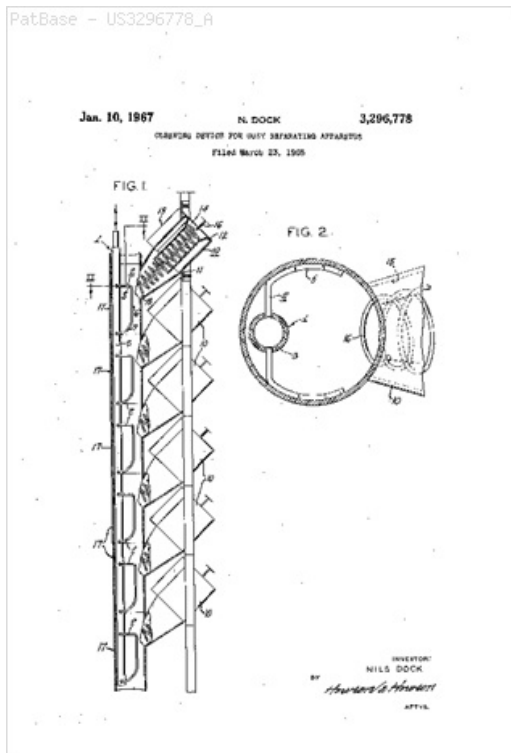
41) Family number: 30961649 (US3296778A) © PatBase

Title: Cleaning device for dust separating apparatus

Abstract: 1,090,947. Cleaning cyclone separators. SVENSKA FLAKTFABRIKEN A.B. March 30, 1965 [March 31, 1964], No. 13517/65. Heading B2P. In a dust separator, Fig. 3, cyclones 12 are mounted in superposed relationship in spaced vertical rows in a gas-conveying channel 17 with their clean-gas outlets 18 connected to apertures in a partition 6 extending across the channel and with their dust outlets 19 directed towards the dust-laden gas inlet side of the channel. The dust outlets 19 are provided with axially displaceable spiral-like cleaning devices 20 and are connected to a vertical outlet duct 4 provided for each row of cyclones. Each duct, composed of a number of elements each connected to a cyclone, is provided with a cleaning device 1 axially displaceable in the duct and consisting of scrapers 2. Figs. 1 and 2, the number of which corresponds to the number of cyclones in each vertical row. The scrapers are made as pairs of wire bows secured to a vertical rod 3. Each bow has an upper horizontal arch-shaped portion corresponding to the radius of the outlet duct 4 and merging into a vertical portion, the lower end of which is arch shaped and similarly corresponds to the radius of the outlet duct 4. The devices 1 are reciprocated by means of links 14 pivotally secured at 13 to the upper ends of the devices and operable by means of a solenoid 15 under the control of a timer 16.

Classifications:

International (IPC 8-9): B04C11/00 B04C3/04 B04C5/22
B04C5/28 (Advanced/Invention);
B04C11/00 B04C3/00 B04C5/00 (Core/Invention)
International (IPC 1-7): B01D47/16 B04C3/04 B04C5/22 B04C5/28
CPC: B04C3/04 B04C5/22 B04C5/28 B04C11/00
European: B04C11/00 B04C3/04 B04C5/22 B04C5/28
US: 15/104.31 55/296 55/349 55/430 55/459.1

**Family:**

Publication number	Publication date	Application number	Application date
FR1442340 A	19660617	FR19650005242	19650211
GB1090947 A	19671115	GB19650013517	19650330
GB1090978 A	19671115	GB19650003125	19650125
NL6503057 A	19651014	NL19650003057	19650310
US3296778 A	19670110	US19650442111	19650323

Priority:

SE19640003897 19640331 US19640359039 19640413 FR19650005242 19650211

Probable Assignee: SVENSKA FLAECTFABRIKEN AB

Assignee(s): (std): DORR OLIVER INC ; SVENSKA FLAECTFABRIKEN AB

Assignee(s): SVENSKA FLAECTFABRIKEN AB

Inventor(s): (std): NILS DOCK

Inventor(s): DOCK NILS

42) Family number: 30042655 (US2003221398A)

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Title: SWITCHABLE CYCLONE FOR SEPARATING PARTICLES OR DROPLETS FROM A FLUID STREAM

Abstract: A cyclone arrangement for separating particles or droplets from a fluid stream, including at least two cyclones (1, 2, 3; 21, 22, 23), which have a tangential intake opening (4, 5, 6; 24, 25) for the fluid stream and set the fluid stream into rotation so that due to the resulting centrifugal force, particles or droplets to be separated from the fluid stream may be discharged from the cyclone separator through discharge openings (10, 11, 12). A plurality of cyclones are connected in parallel, and the intake openings (4, 5, 6) of the cyclones are closed or opened by a common slider (17; 24), which also has an opening (15, 16, 17; 24, 25) in the vicinity of each cyclone intake opening for passage of the fluid stream. The position and size of each slider opening is designed such that in various slider settings, the fluid stream will reach a different number of cyclone intake openings.

Classifications:

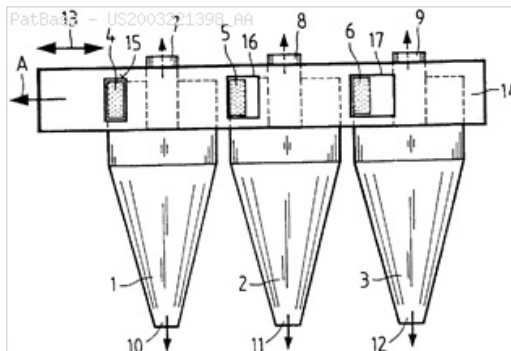
International (ipc 8-9): B01D45/12 B04C11/00 B04C5/04 B04C5/24 B04C5/28 F01M13/04 H01M8/04 H01M8/04119 (Advanced/Invention); F01M13/00 F01M13/04 (Advanced/Non-invention); B01D45/12 B04C11/00 B04C5/00 F01M13/00 H01M8/04 (Core/Invention); F01M13/00 (Core/Non-invention); B04C (Subclass/Invention)

International (ipc 1-7): B01D45/12 B04C5/04 B04C5/24 B04C5/28 B66F3/26 F01M13/04 H01M8/04

CPC: B01D45/12 B04C5/04 B04C5/28 B04C11/00 F01M2013/0072 F01M2013/0427 H01M8/04156

European: B01D45/12 B04C11/00 B04C5/04 B04C5/28 H01M8/04C2E2 R01M13/00F4D4 R01M13/04E2 Y02E60/50

US: 209/711 209/717 210/512.1 55/346 55/459.1

**Family:**

Publication number	Publication date	Application number	Application date
DE10205981 A1	20030821	DE20021005981	20020214
DE10205981 B4	20140109	DE20021005981	20020214
FR2835764 A1	20030815	FR20030001738	20030213
FR2835764 B1	20060609	FR20030001738	20030213

ITRM20030061 A0	20030212	IT2003RM00061	20030212
ITRM20030061 A1	20030815	IT2003RM00061	20030212
SE200300145 A	20030815	SE20030000145	20030122
SE200300145 A0	20030122	SE20030000145	20030122
SE200300145 L	20030815	SE20030000145	20030122
SE525229 C2	20041228	SE20030000145	20030122
US2003221398 AA	20031204	US20030365605	20030213
US6942709 BB	20050913	US20030365605	20030213

Priority:

DE20021005981 20020214

Probable Assignee: FILERWERK MANN AND HUMMEL GMBH

Assignee(s): (std): MANN AND HUMMEL FILTER ; MANN AND HUMMEL GMBH

Assignee(s): FILERWERK MANN AND HUMMEL GMBH ; FILTERWERK MANN AND HUMMEL GMBH ; FILTERWERK MANN HUMMEL GMBH

Inventor(s): (std): DURST MICHAEL ; TRAUTMANN PIUS ; TRAUTMANN PIUS DR ; DURST MICHAEL DR ; PIUS TRAUTMANN ; MICHAEL DURST

Agent(s): CABINET HERRBURGER; CROWELL AND MORING LLP

43) Family number: 2610670 (US5026486A)

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Title: Method for controlling apex flow in an array of parallel hydrocyclones for cleaning aqueous fiber suspensions

Abstract: A method and control system are provided for controlling apex flow in an array of parallel hydrocyclones, used for cleaning aqueous cellulose fiber suspensions, and arranged in a housing with a common inject chamber, base chamber and apex fraction chamber common to all hydrocyclones in the array, featuring the control of apex flow of cellulose fiber suspension by monitoring and maintaining apex flow at a selected value, increasing apex flow through the array whenever apex flow diminishes due to plugging of a hydrocyclone in the array, to aid in avoiding plugging of other hydrocyclones in the array.

Classifications:

International (ipc 8-9): B04C11/00 B04C5/28

D21D5/24 (Advanced/Invention);

B04C11/00 B04C5/00 D21D5/00 (Core/Invention)

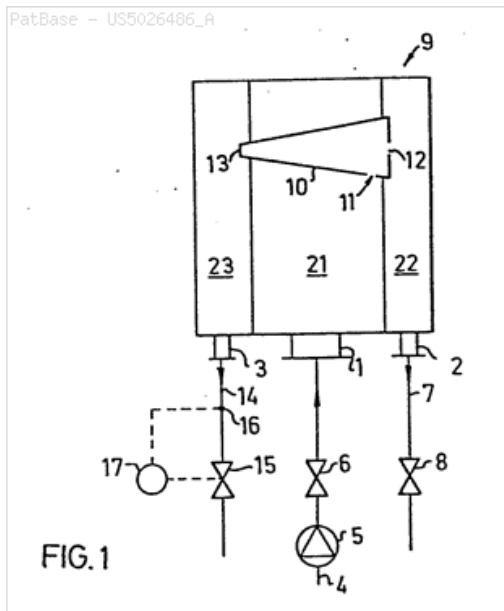
International (ipc 1-7): B01D45/02 B01D45/04 B04C11/00

B04C5/28 D21D5/24 D21F1/68 G05D9/00

CPC: B04C5/28 B04C11/00 D21D5/24

European: B04C11/00 B04C5/28 D21D5/24

US: 162/258 162/263 209/144 209/211 209/726 209/728 210/512.1 210/787



Family:

Publication number	Publication date	Application number	Application date
AT56638 E	19901015	AT19850850126T	19850415
BRPI8501966 A	19851224	BR1985PI01966	19850425
CA1287018 A1	19910730	CA19850479589	19850419
DE3579735 D1	19901025	DE19853579735	19850415
EP0160629 A2	19851106	EP19850850126	19850415
EP0160629 A3	19880406	EP19850850126	19850415
EP0160629 B1	19900919	EP19850850126	19850415
ES542562 A0	19860716	ES19850542562	19850425
ES8609550 A1	19860716	ES19850542562	19850425
FI80739 B	19900330	FI19850001644	19850425
FI80739 C	19900710	FI19850001644	19850425
FI851644 A	19851027	FI19850001644	19850425
FI851644 A0	19850425	FI19850001644	19850425
FI851644 L	19851027	FI19850001644	19850425
JP1869363 C3	19940906	JP19850090784	19850426
JP5082267 B4	19931118	JP19850090784	19850426
JP60235662 A2	19851122	JP19850090784	19850426
NO163240 B	19900115	NO19850001666	19850425
NO163240 C	19900425	NO19850001666	19850425
NO851666 A	19851028	NO19850001666	19850425
NO851666 L	19851028	NO19850001666	19850425
PT80352 A	19850501	PT19850080352	19850424
PT80352 B	19870529	PT19850080352	19850424
SE441155 B	19850916	SE19840002296	19840426

SE441155 C	19920123	SE19840002296	19840426
SE8402296 A	19850916	SE19840002296D	19840426
SE8402296 A0	19840426	SE19840002296	19840426
US5026486 A	19910625	US19860912758	19860926

Priority:

SE19840002296 19840426 US19850691975 19850116 EP19850850126 19850415
EP19850850126 19850415 CA19850479589 19850419

Probable Assignee: WIKDAHL NILS ANDERS LENNART

Assignee(s): (std): NIRUSU ANDERUSU RENNARUTO UIKU ; WIKDAHL NILS ANDERS LENNART

Assignee(s): WIKDAHL NILS ANDERS LENNART DJURSHOLM SE ; NILS ANDERS LENNART WIKDAHL ; NIRUSU ANDERUSU RENNARUTO UIKUDAARU ; WIKDAHL NILS A L ; WIKDAHL NILS AL

Inventor(s): (std): WIKDAHL NILS ANDERS LENNART ; NIRUSU ANDERUSU RENNARUTO UIKU ; WIKDAHL NILS A L

Inventor(s): NIRUSU ANDERUSU RENNARUTO UIKUDAARU ; WIKDAHL NILS ANDERS LENNART DJURSHOLM SE ; WIKDAHL NILS AL ; NILS ANDERS LENNART WIKDAHL

Agent(s): RIDOUT AND MAYBEE LLP

Designated states: AT BE CH DE FR GB IT LI NL

44) Family number: 63579702 (US2016271545A)

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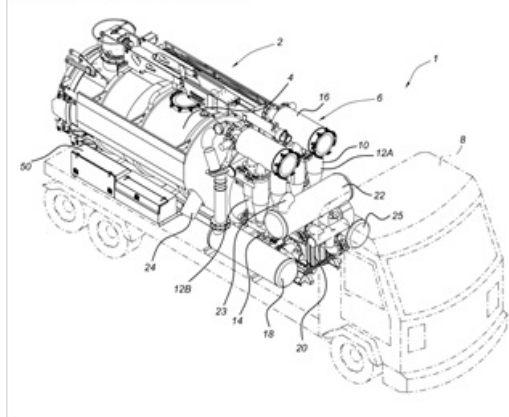
Title: VACUUM INSTALLATION

Abstract: A vacuum installation includes a vacuum chamber having an inlet for aspirating a quantity of liquid or particulate material. A cyclone separation unit including a plurality of cyclones, communicating in parallel with the interior of the vacuum chamber is connected to a vacuum pump to draw air from the vacuum chamber through the cyclones and induce a separating vortex flow within the cyclones. A controller is arranged to control the vacuum pump to provide a chosen flow rate and to selectively deactivate one or more of the cyclones according to the chosen flow rate.

Classifications:

International (IPC 8-9): A47L11/24 A47L9/08 A47L9/16 A47L9/28 B01D45/08 B01D45/12 B01D45/16 B01D46/00 B01D50/00 B04C11/00 B04C3/04 B04C5/28 B04C9/00 B60P3/00 E01H1/08 (Advanced/Invention); E01H1/08 (Advanced/Non-invention)
CPC: B01D46/0068 B01D45/16 B01D46/0019 B01D50/002 B04C3/04 A47L9/1641 A47L9/2842 A47L9/1683 B04C11/00 B04C2009/002 B04C2009/008 B04C5/28 B04C9/00 B04C2009/005 E01H1/0827
US: 1/1 95/23

PatBase - US2016271545_AA



Family:

Publication number	Publication date	Application number	Application date
CA2924199 AA	20160917	CA20162924199	20160317
EP3069792 A1	20160921	EP20160160655	20160316
NL2014477 A1	20161010	NL20152014477	20150317
NL2014477 B1	20170117	NL20152014477	20150317
US2016271545 AA	20160922	US20160072553	20160317
US2018311603 AA	20181101	US20180029732	20180709
US10016713 BB	20180710	US20160072553	20160317

Priority:

NL20152014477 20150317 US20160072553 20160317 US20180029732 20180709

Probable Assignee: KOKS GROUP BV

Assignee(s): (std): KOKS GROUP BV

Assignee(s): SPIERDIJK NIC

Inventor(s): (std): SPIERDIJK NIC ; NIC SPIERDIJK

Agent(s): GOWLING WLG CANADA LLP; NEDERLANDSCH OCTROOIBUREAU; YOUNG AND THOMPSON

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

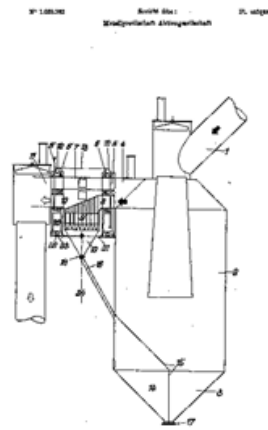
45) Family number: 20318712 (FR1058382A)

© PatBase

Title: Procédé de montage de depoussiereurs dans une tuyauterie? de gueulard ou a gazindustriels similaires

Classifications:

International (IPC 8-9): B04C11/00 B04C5/28 C21B7/22 (Advanced/Invention); B04C11/00 B04C5/00 C21B7/00 (Core/Invention)
International (IPC 1-7): B04C11/00 B04C5/28
CPC: B04C5/28 B04C11/00 C21B7/22
European: B04C11/00 B04C5/28 C21B7/22

**Family:**

Publication number	Publication date	Application number	Application date
BE515309 A	00000000		00000000
DE972656 A	19590827	DE1951M011631	19511109
FR1058382 A	19540316		19520616
LU31477 A	00000000		00000000

Priority:

19511108 DE1951M011631 19511109

Probable Assignee: METALLGESELLSCHAFT AG**Assignee(s):** (std): METALLGESELLSCHAFT AG**Assignee(s):** METALLGESELLSCHAFT AKTIENGESELLSCHAFT**Inventor(s):** (std): SCHINDLING JOSEF**46) Family number: 33551725 (DE102005017328B4)**

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Title: Flüssigkeitsabscheidevorrichtung

Abstract: The assembly to separate a fluid or fluid mist from a gas flow, especially water from an internal combustion motor exhaust, has at least one valve (1) at the entry and/or exit. The valve is opened and closed by magnetic forces to control the gas flow through it. The valve body (3) has a magnetic element (11) to be moved by at least one magnet (12a, 12b) at the base body (2) for controlled positioning. A spring (10) applies additional forces on the valve body.

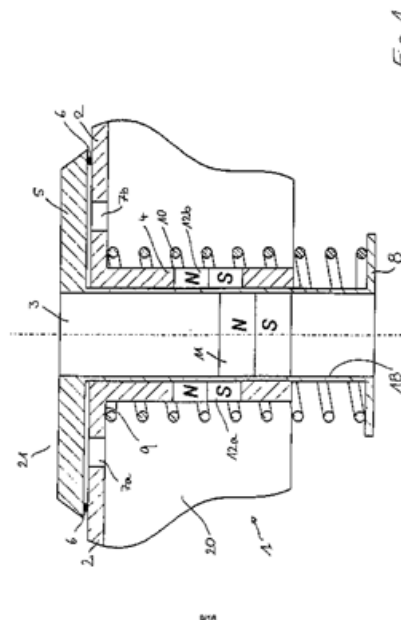
Classifications:

International (IPC 8-9): B01D35/15 B01D35/157 B01D45/12 B04C11/00 B04C5/28 F01M13/04 F16K31/06 (Advanced/Invention); B01D35/14 B01D45/12 B04C11/00 B04C5/00 F01M13/00 F16K31/06 (Core/Invention)

CPC: B01D45/12 B04C5/28 B04C11/00 F01M2013/0022 F16K31/084

European: B01D45/12 B04C11/00 B04C5/28 F16K31/08K R01M13/00B4

PatBase - DE102005017328_R1

DE 10 2005 017 328 A1 2008.10.26
Anhängende Zeichnungen

Family:

Publication number	Publication date	Application number	Application date
DE102005017328 A1	20061026	DE200510017328	20050414
DE102005017328 B4	20081204	DE200510017328	20050414

Priority:

DE200510017328 20050414

Probable Assignee: REINZ DICHTUNG GMBH**Assignee(s):** (std): REINZ DICHTUNG GMBH**Assignee(s):** REINZ DICHTUNGS GMBH**Inventor(s):** (std): WAGNER JUERGEN ; PRASKA ARMIN ; LEMKE KAI UWE ; GRAFL DIETER**47) Family number: 51882735 (EP2495049A1)**

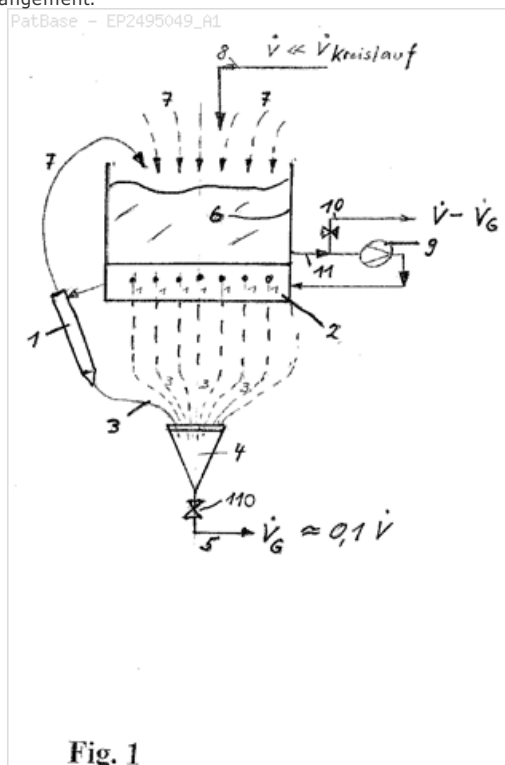
© PatBase

Title: MULTI-HYDROCYCLONE ASSEMBLY

Abstract: The multi hydrocyclone arrangement comprises spatially adjacent small hydrocyclones (1), which are supplied from a pressure chamber (2), where an underflow of the small hydrocyclones is connected with a common underflow chamber (4) and an upperflow of the small hydrocyclones is lead to a collecting container (6). A primary object flow passes in the collecting container, where the pressure chamber is fed from the collecting container. A hydrocyclone pump (9) is connected with a supply line and, as a bypass, connected with a controlled outlet of a fine particle suspension. The multi hydrocyclone arrangement comprises spatially adjacent small hydrocyclones (1), which are supplied from a pressure chamber (2), where an underflow of the small hydrocyclones is connected with a common underflow chamber (4) and an upperflow of the small hydrocyclones is lead to a collecting container (6). A primary object flow passes in the collecting container, where the pressure chamber is fed from the collecting container. A hydrocyclone pump (9) is connected with a supply line and, as a bypass, connected with a controlled outlet of a fine particle suspension, where the common underflow chamber is formed in a closed manner. A trigger is provided, at the exit of the underflow chamber, with a valve for quasi-continuous or discontinuous discharge of the suspension. A hydrocyclone displacer such as a membrane pump is provided for heating pumps that are free of suspension. The hydrocyclone pump is associated with a pulsation absorber. An independent claim is included for a method for operating a multi hydrocyclone arrangement.

Classifications:**International (IPC 8-9):** B04C11/00 B04C5/14 B04C5/24

B04C5/28 (Advanced/Invention)

CPC: B04C5/14 B04C5/28 B04C11/00**European:** B04C11/00 B04C5/14 B04C5/28**Family:**

Publication number	Publication date	Application number	Application date
DE102011103417 A1	20120906	DE201110103417	20110606
EP2495049 A1	20120905	EP20120155982	20120217

Priority:

DE201110012783 20110302 DE201110103417 20110606

Probable Assignee: AKW APP AND VERFAHREN GMBH**Assignee(s):** (std): AKW APP AND VERFAHREN GMBH**Assignee(s):** AKW APPARATE AND VERFAHREN GMBH**Inventor(s):** (std): FRITSCH GEORG ; KANIUT PETER ; NEESE THOMAS PROF DR**Inventor(s):** NEESE THOMAS ; NEESE THOMAS PROF DR**Agent(s):** MEISSNER BOLTE AND PARTNER**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

Title: NOVEL REINFORCING VORTEX FORMULA SELECTION POWDER DEVICE

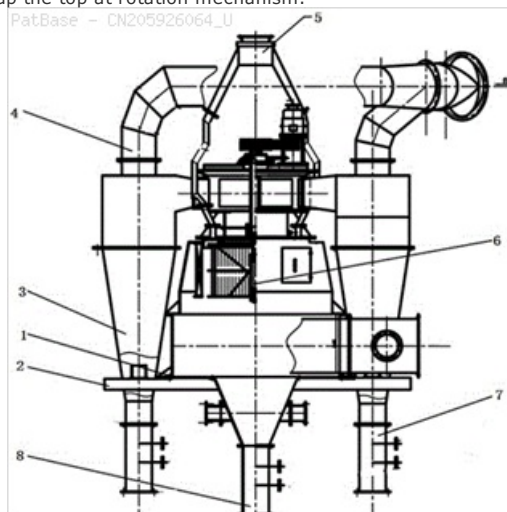
Abstract: The utility model discloses a novel reinforcing vortex formula selection powder device, including casing, supporting platform frame, a whirlwind section of thick bamboo, tuber pipe way, feed mechanism, rotation mechanism and the discharge gate of converging, the casing is fixed on the supporting platform frame, the discharge gate includes farine discharge gate and thick powder outlet, the farine discharge gate sets up around thick powder outlet, just rotation mechanism sets up and leads to in the thick powder outlet upper end and with thick powder outlet and farine discharge gate homogeneous phase, the farine discharge gate passes through a whirlwind section of thick bamboo and links to each other with rotation mechanism, and is equipped with collection tuber pipe way on this whirlwind section of thick bamboo, the tuber pipe that converges is said and is linked to each other with the air intake, feed mechanism sets up the top at rotation mechanism.

Classifications:

International (IPC 8-9): B02C23/20 B04C11/00

B04C5/28 (Advanced/Invention)

CPC: B04C5/28 B02C23/20 B04C11/00



Family:

Publication number	Publication date	Application number	Application date
■ CN106040451 A	20161026	CN201610653332	20160811
■ CN205926064 U	20170208	CN201620864166U	20160811

Priority:

CN201610653332 20160811 CN201620864166U 20160811

Probable Assignee: TAICANG KAIFUSHI MACHINERY CO LTD

Assignee(s): (std): TAICANG KAI FU SHI MACHINE CO LTD ; TAICANG KAIFUSHI MACHINERY CO LTD

Assignee(s): TAICANG KAI FU SHI MACHINE CO ; TAICANG KAIFUSHI MACHINERY CO

Inventor(s): (std): GAO FENG

Title: A degas apparatus for the cooling system of an engine

Abstract: A degas apparatus for the cooling system of an engine is disclosed comprising of a degas tank 14 having a housing 12 defining a degas chamber 13 having a tangentially arranged inlet 11, 15 towards an upper end of the degas chamber 13 and a tangentially arranged outlet 17 located towards a lower end of the degas chamber 13. The degas chamber 13 is a least partially conical in shape so that the diameter of the degas chamber adjacent the inlet 11 is greater than the diameter of the degas chamber adjacent to the outlet 17. In a preferred embodiment several smaller degas chambers D1, D2, D3, Dn are connected together to form the degas apparatus. The chambers may be connected in gradually decreasing size in series or may be arranged in parallel. Each degas chamber may include conical portions of differing angle.

Classifications:

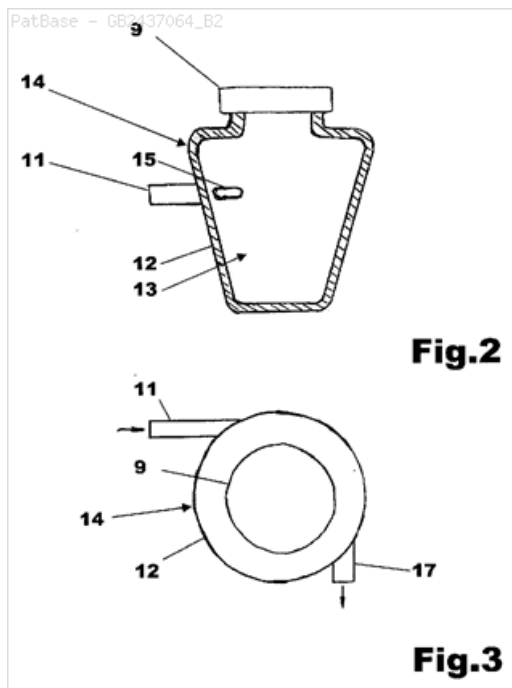
International (IPC 8-9): B01D19/00 F01P11/02 (Advanced/Invention)

CPC: F01P11/028 B01D19/0052 B04C5/081 B04C5/12 B04C5/28

B04C11/00 B01D19/0057

European: B01D19/00P4 B01D19/00P4B B04C11/00 B04C5/081

B04C5/12 B04C5/28 F01P11/02C



Family:

Publication number	Publication date	Application number	Application date
GB200607447 A0	20060524	GB20060007447	20060413
GB2437064 A1	20071017	GB20060007447	20060413
GB2437064 B2	20110413	GB20060007447	20060413

Priority:

GB20060007447 20060413

Probable Assignee: FORD GLOBAL TECH LLC

Assignee(s): (std): FORD GLOBAL TECH LLC

Assignee(s): FORD GLOBAL TECHNOLOGIES LLC

Inventor(s): (std): CAINE JON EDWARD ; CLISSOLD ROY ; DRIS ANTONIS ; MOFFAT JOHN

Inventor(s): ROY CLISSOLD ; ANTONIS DRIS ; JOHN MOFFAT ; JON EDWARD CAINE

50) Family number: 2043768 (GB2116079A)

© PatBase

Title: Hydrocyclone with multiple fastening device

Abstract: In a hydrocyclone, a fastening device simultaneously connects in a pressure-tight manner the hydrocyclone inlet conduit (3) to a feed pipe (4) and the hydrocyclone head (6) to the hydrocyclone body (5). The hydrocyclone head is provided with an annular flexible sealing lip which, under the action of an axially applied pressure, engages against the inner wall of the hydrocyclone body and thus automatically forms a seal therewith. The fastening device consists of a pressure element (1) which is arranged opposite the feed pipe (4) and is spatially rigidly connected to the latter and to the holding elements (7). When the pressure element (1) is actuated and bears against an abutment (2) on the body (5), the feed pipe (4) is fluid-tightly drawn against the inlet conduit (3) and simultaneously by the head (6) is pressed against the body (5) by the holding elements (7).

Classifications:

International (IPC 8-9): B04C11/00 B04C5/00

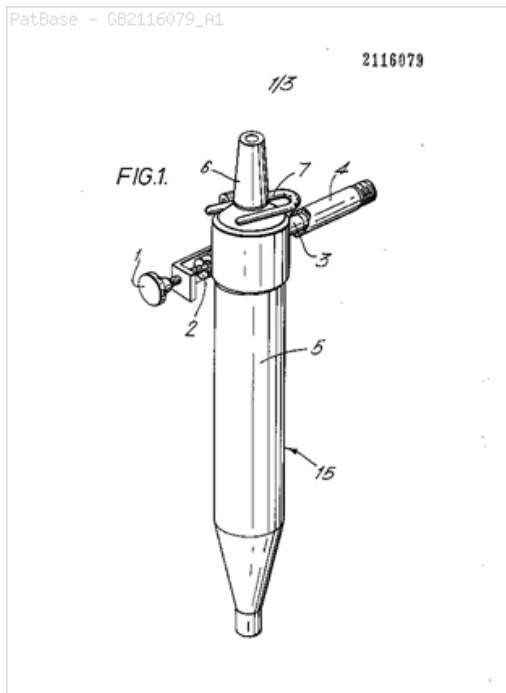
B04C5/28 (Advanced/Invention);

B04C11/00 B04C5/00 (Core/Invention)

International (IPC 1-7): B04C5/00 B04C5/24 B04C5/28

CPC: B04C5/00 B04C5/28 B04C11/00

European: B04C11/00 B04C5/00 B04C5/28

**Family:**

Publication number	Publication date	Application number	Application date
DD209078 A3	19840418	DD19810236022	19811221
DE3244700 A1	19831006	DE19823244700	19821203
GB2116079 A1	19830921	GB19820036239	19821221
GB2116079 B2	19851023	GB19820036239	19821221

Priority:

DD19810236022 19811221 DD19820244427 19821101

Probable Assignee: ADW DDR**Assignee(s):** (std): ADW DDR ; ADW DER DDR ; AKAD WISSENSCHAFTEN DDR**Assignee(s):** AKADEMIE DER WISSENSCHAFTEN DER DDR ; ADW DER DDR DD**Inventor(s):** (std): NEESSE THOMAS ; THOMAS GUENTER ; THOMAS GUNTER ; NEESE THOMAS ; DALLMANN WOLFGANG ; NEESSE THOMAS DR SC TECHN ; DALLMANN WOLFGANG DIPL ING DR**Inventor(s):** DALLMANN WOLFGANG DD ; NEESE THOMAS DD ; GUNTER THOMAS ; THOMAS GUENTER DD ; DALLMANN WOLFGANG DIPL ING DR ING ; THOMAS NEESE ; WOLFGANG DALLMANN**51) Family number: 10183819** (US5961841A)

© PatBase

Title: Downhole fluid separation system

Abstract: A downhole fluid separation system comprises a fluid separator having a fluid inlet, a first fluid outlet, and a second fluid outlet, with a sensing device for sensing at least one parameter of a first component of a fluid mixture introduced into the fluid inlet of the fluid separator. The ratio of the first component to a second component of the fluid mixture is adjusted as such fluid mixture is introduced into the fluid inlet of the fluid separator in response to a signal provided by the sensing means. By adjusting the component ratio before the fluid is introduced into the fluid separator in response to a signal from a downhole sensing device, acceptable separation efficiency can be achieved over a broad range of fluid component ratios for a given fluid separator.

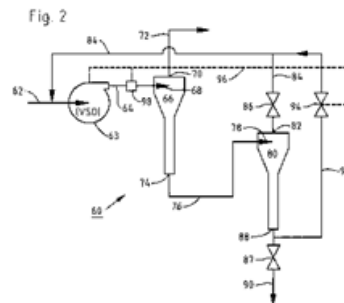
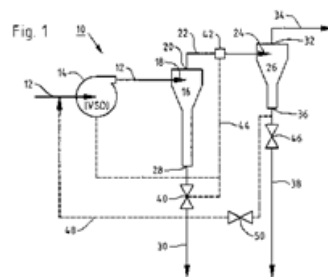
Classifications:

International (IPC 8-9): B01D17/02 B01D17/038 B01D17/12
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B01D17/00 B01D17/02 B04C11/00 B04C5/00 E21B43/34
G05D11/00 (Core/Invention)

International (IPC 1-7): B01D B01D17/02 B01D17/038 B01D17/12
B04C11/00 B04C5/26 E21B43/38 G05D11/02

CPC: B01D17/0217 B04C5/28 B04C11/00 E21B43/38**European:** B01D17/02H B04C11/00 B04C5/28 E21B43/38

US: 166/265 166/53 210/170.01 210/195.1 210/512.2 210/739
210/747 210/747.1 210/788 210/805 210/96.1

**Family:**

Publication number	Publication date	Application number	Application date
CA2210669 AA	19980619	CA19972210669	19970716
CA2210669 C	20061003	CA19972210669	19970716
DE69715796 D1	20021031	DE19976015796	19970710
EP0849433 A2	19980624	EP19970305112	19970710
EP0849433 A3	19990324	EP19970305112	19970710
EP0849433 B1	20020925	EP19970305112	19970710
NO313769 B1	20021125	NO19970003272	19970715
NO973272 A	19980622	NO19970003272	19970715
NO973272 A0	19970715	NO19970003272	19970715
NO973272 L	19980622	NO19970003272	19970715
US5961841 A	19991005	US19960769560	19961219

Priority:

US19960769560 19961219 CA19972210669 19970716

Probable Assignee: CAMCO INT INC**Assignee(s):** (std): CAMCO INT**Assignee(s):** CAMCO INT INC ; CAMCO INTERNATIONAL INC ; CAMCO INTERNATIONAL INC HOUSTON ; BOWERS BILL E**Inventor(s):** (std): BOWERS BILL E**Agent(s):** MARKS AND CLERK**Designated states:** AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE**52) Family number: 59608827 (US2016341024A)**

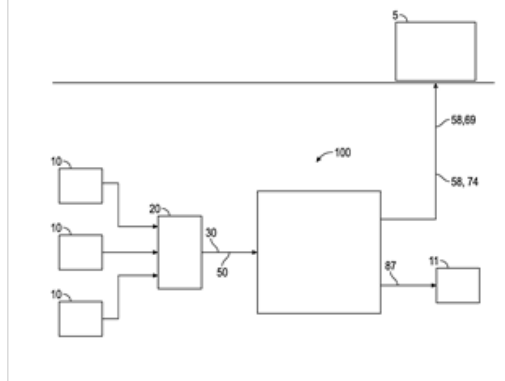
© PatBase

Title: SYSTEMS AND METHODS FOR SUBSEA FLUID PHASE SEPARATION

Abstract: Systems and methods for subsea fluid phase separation. A two phase embodiment of the subsea fluid separation system separates a multiphase flow into gas and liquid phases. A three phase embodiment of the subsea fluid separation system separates multiphase flow into gas, oil, and water phases. The subsea fluid separation systems include a wellhead desander system to remove solids from the multiphase flow, a vertical gas-liquid separation module having associated valves disposed in series with a horizontal gas-liquid separation module having associated valves, one or more pumps to provide fluid flow to the vertical and horizontal separators, and a control system to control operation of the valves and pumps. The three phase embodiment further includes oil-water separators and multi-stage hydrocyclones for produced water treatment in a subsea environment.

Classifications:

International (IPC 8-9): B01D17/02 B01D17/038 B01D17/06
 B01D17/12 B01D19/00 B01D21/00 B01D21/26 B01D21/30
 B04C11/00 B04C5/04 B04C5/14 B04C5/28 E21B43/36
 E21B43/40 (Advanced/Invention)
CPC: B01D17/06 B01D19/0036 B04C5/14 B04C5/28 B01D21/0006
 B01D19/0057 B04C5/04 B01D21/267 B01D17/0217 B04C11/00
 B01D21/302 B01D17/12 E21B43/40 E21B43/36 B01D17/0208
US: 1/1 166/267

**Family:**

Publication number	Publication date	Application number	Application date
AU2014368881 AA	20160602	AU20140368881	20141222
BR112016014173 A2	20170808	BR20161114173	20141222
NO20160841 A	20160519	NO20160000841	20160519
US2016341024 AA	20161124	US20140106691	20141222
WO15095886 A1	20150625	WO2014US71976	20141222

Priority:

US20130919473P 20131220 US20140928810P 20140117 US20140106691 20141222
 WO2014US71976 20141222

Probable Assignee: ONESUBSEA IP UK LTD

Assignee(s): (std): BYESEA JOHN ; ONESUBSEA IP UK LTD ; UNNAM JAGADEESH

Inventor(s): (std): BYESEA JOHN ; UNNAM JAGADEESH

Inventor(s): JAGADEESH UNNAM ; JOHN BYESEA

Agent(s): WRAYS PTY LTD; MOSCICKI MATTHEW R

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 IR 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 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

53) Family number: 66946867 (US2019262844A)

© PatBase

Title: FLUID SEPARATION APPARATUS AND SYSTEM

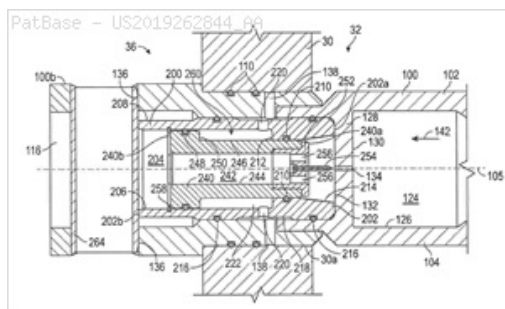
Abstract: A fluid separation apparatus includes a hydrocyclone (100) having an orifice (134) therein, a housing (202) disposed in the hydrocyclone and having a bore (204), a piston (240) disposed in the bore (204) of the housing (202), and a first annular seal (248) disposed between the housing (202) and the piston (240) and configured to restrict fluid communication between the housing (202) and the piston (240), wherein the piston (240) includes a passage (242) extending through the piston (240) and having a pin (254) coupled to a first end (240a) of the piston, the piston (240) being actuatable to move between a first position (260) where the pin (254) is clear of the orifice (134) of the hydrocyclone, and a second position where the pin (254) is disposed in the orifice (134), wherein the piston (240) is configured such that as the piston is actuated from the first position to the second position, fluid is permitted to flow into the passage (242) of the piston (240) from the bore (204) of the housing (202).

Classifications:

International (IPC 8-9): B01D17/02 B01D17/12 B04C11/00 B04C5/22 B04C5/28 (Advanced/Invention)

International (IPC 1-7): B04C11/00 B04C5/22 B04C5/28

CPC: B01D17/12 B01D17/0217 B04C5/22 B04C5/28 B04C11/00

**Family:**

Publication number	Publication date	Application number	Application date
BR112018068260 A2	20190115	BR20181168260	20170310
CA3017362 AA	20180910	CA20173017362	20170310
CO20180010729 A2	20181022	CO20180010729	20181004
EP3426406 A1	20190116	EP20170714943	20170310
US2019262844 AA	20190829	US20170084074	20170310
WO17156468 A1	20170914	WO2017US21928	20170310

Priority:

US20160307120P 20160311 US20170084074 20170310 WO2017US21928 20170310

Probable Assignee: NAT OILWELL VARCO LP

Assignee(s): (std): NAT OILWELL VARCO LP

Assignee(s): NATIONAL OILWELL VARCO L P ; NATIONAL OILWELL VARCO LP ; WEAVER RANDALL FERRAIN ; WOLF MARK ERNEST ; EGGLESTON CLIFTON DEE

Inventor(s): (std): WOLF MARK ERNEST ; WEAVER RANDALL FERRAIN ; EGGLESTON CLIFTON DEE ; RANDALL FERRAIN WEAVER ; MARK ERNEST WOLF ; CLIFTON DEE EGGLESTON

Agent(s): DEETH WILLIAMS WALL LLP; BECK GREENER; HOOPER JAMES A ET AL

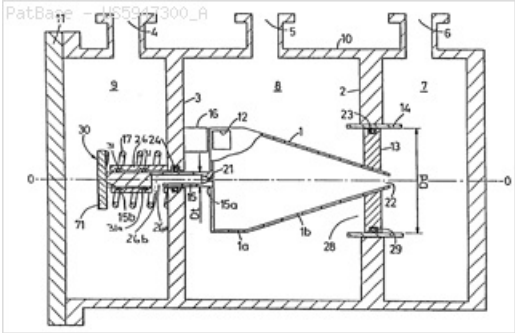
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54) Family number: 20329870 (US5947300A) © PatBase

Title: Cyclone separator having switchable inlet

Abstract: PCT No. PCT/GB94/01419 Sec. 371 Date Dec. 21, 1995 Sec. 102(e) Date Dec. 21, 1995 PCT Filed Jun. 30, 1994 PCT Pub. No. WO95/01224 PCT Pub. Date Jan. 12, 1995A separation apparatus for separating a mixture of materials including a cyclone having an inlet capable of being switched into either one of two conditions, such as fully closed and fully or pre-set partially open, by movement of at least part of the cyclone. A plurality of cyclones may be provided enclosed in a pressure vessel.

Classifications:
International (IPC 8-9): B04C11/00 B04C5/02 B04C5/13 B04C5/24 B04C5/28 (Advanced/Invention); B04C11/00 B04C5/00 (Core/Invention)
International (IPC 1-7): B04C11/00 B04C5/04 B04C5/13
CPC: B04C5/02 B04C5/13 B04C5/24 B04C5/28 B04C11/00 F01M13/0011
European: B04C11/00 B04C5/02 B04C5/13 B04C5/24 B04C5/28 R01M13/00B
US: 209/717 209/726 209/729 209/734 210/512.2



Family:

Publication number	Publication date	Application number	Application date
AU199470065 A1	19950124	AU19940070065	19940630
AU686619 B2	19980212	AU19940070065	19940630
DE69420416 D1	19991007	DE19946020416	19940630
EP0710153 A1	19960508	EP19940918976	19940630
EP0710153 B1	19990901	EP19940918976	19940630
GB2279276 A1	19950104	GB19940013137	19940630
GB2279276 B2	19970604	GB19940013137	19940630
GB9313614 A0	19930818	GB19930013614	19930701
GB9413137 A0	19940824	GB19940013137	19940630
MY114766 A	20030131	MY19940001723	19940701
NO311873 B1	20020211	NO19950005353	19951229
NO955353 A	19960221	NO19950005353	19951229
NO955353 A0	19951229	NO19950005353	19951229
NO955353 L	19960221	NO19950005353	19951229
US5947300 A	19990907	US19950564158	19951221
WO9501224 A1	19950112	WO1994GB01419	19940630

Priority:
GB19930013614 19930701 GB19940013137 19940630 WO1994GB01419 19940630

Probable Assignee: AXSIA SERCK BAKER LTD

Assignee(s): (std): LANGE NEVILLE ERNEST ; SERCK BAKER LIMITED ; SERCK BAKER LTD ; AXSIA SERCK BAKER LTD

Assignee(s): LANGE NEVILLE E ; AXSIA SERCK BAKER LIMITED ; SERCK BAKER LTD WIMBORNE DORSET

Inventor(s): (std): LANGE NEVILLE ; LANGE NEVILLE ERNEST ; NEVILLE ERNEST LANGE ; LANGE NEVILLE E

Agent(s): GRIFFITH HACK

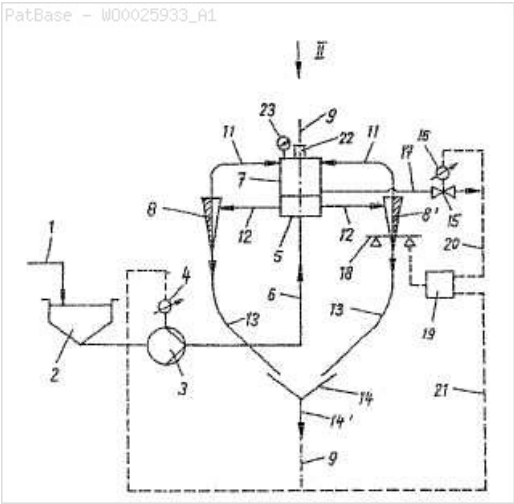
Designated states: AM AT AU BB BE BF BG BJ BR BY CA CF CG CH CI CM CN CZ DE DK ES FI FR GA GB GE GN GR HU IE IT JP KE KG KP KR KZ LK LU LV MC MD MG ML MN MR MW NE NL NO NZ PL PT RO RU SD SE SI SK SN TD TG TJ TT UA US UZ VN

55) Family number: 15358904 (WO0025933A1) © PatBase

Title: HYDROCYCLONE ARRANGEMENT, AND A CORRESPONDING METHOD

Abstract: The invention relates to a hydrocyclone arrangement comprising an inflow (6) of the feed pulp (1), an overflow (11) and an underflow (13), whereby the inflow (6) is fed into a holding chamber (5) by a pump (3). The overflow (11) is led into a collecting chamber (7), and a free outflow is provided for the underflow (13). According to the invention, a plurality of hydrocyclones (8) which preferably have identical dimensions are provided and these are arranged in a spatially close manner such that the overflows (11) of these hydrocyclones (8) open into a common overflow collecting chamber (7), whereby the overflow collecting chamber (7) is configured as a pressure pot and, via an overflow collecting line, interacts with an adjustable control valve (15) and with a control device belonging thereto which is provided for adjusting the volumetric grit, namely the ratio of the volumetric flows of the overflow (11) and underflow (13).

Classifications:
International (IPC 8-9): B04C11/00 B04C5/28 (Advanced/Invention); B04C11/00 B04C5/00 (Core/Invention)
International (IPC 1-7): B03B5/32 B03B5/34 B04C11/00 B04C5/04 B04C5/08 B04C5/14 B04C5/24 B04C5/28
CPC: B04C5/28 B04C11/00 B04C5/14



Family:

Publication number	Publication date	Application number	Application date
AT233603 E	20030315	AT19990971356T	19991027
AU200013770 A1	20000522	AU20000013770	19991027
AU200013770 A5	20000522	AU20000013770	19991027
DE19849870 A1	20000511	DE19981049870	19981029
DE19849870 C2	20021031	DE19981049870	19981029
DE19963284 A1	20010628	DE19991063284	19991227
DE59904482 D1	20030410	DE19995004482	19991027
EP1124642 A1	20010822	EP19990971356	19991027
EP1124642 B1	20030305	EP19990971356	19991027
WO0025933 A1	20000511	WO1999EP08133	19991027

Priority:

DE19981049870 19981029 WO1999EP08133 19991027 DE19995004482 19991027
DE19991063284 19991227

Probable Assignee: AKW APPARATE VERFAHREN

Assignee(s): (std): AKW APP AND VERFAHREN GMBH AND CO ; AKW APP U VERFAHREN GMBH AND C ; AKW APP UND VERFAHREN GMBH AND C ; AKW APPARATE AND VERFAHREN GMBH ; AKW APPARATE VERFAHREN ; NEESSE THOMAS ; DONHAUSER FRIEDRICH

Assignee(s): AKW APPARATE AND VERFAHREN GMBH AND CO KG ; AKW APPARATE UND VERFAHREN GMBH AND CO KG

Inventor(s): (std): NEESSE THOMAS ; DONHAUSER FRIEDRICH ; NEESE THOMAS

Inventor(s): FRIEDRICH DONHAUSER ; THOMAS NEESSE

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

56) Family number: 2146913 (US4670023A)

© PatBase

Title: GAS GENERATOR INSTALLATION

Abstract: A coal gasifier has a fluidized bed reactor. The gasifier has a series of cyclones connected to an outlet of the gasifier to clean the gas generated by the fluidized bed reactor to isolate particulate matter. The cyclones are turned on and off individually to compensate for the variations in the gas output of the fluidized bed reactor.

Classifications:

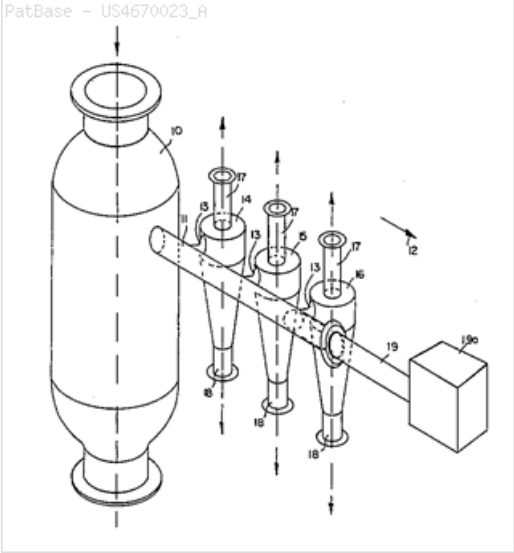
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International (ipc 1-7): B04C5/28 C10J3/20 C10J3/48 C10J3/56 C10J3/68 C10J3/84 C10K1/02 F23G5/12

CPC: C10J3/78 C10J2300/093 C10J3/463 C10J3/48 B04C5/28 B04C11/00 C10J3/06 C10J3/20 C10J3/56 C10J3/84

European: B04C11/00 B04C5/28 C10J3/06 C10J3/20 C10J3/46B C10J3/48 C10J3/56 C10J3/84

US: 110/216 110/229 422/147 48/210 48/77 55/344 55/346 60/39.12 60/39.182



Family:

Publication number	Publication date	Application number	Application date
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AU198539132 A1	19850905	AU19850039132	19850226
AU198539133 A1	19850905	AU19850039133	19850226
AU571310 B2	19880414	AU19850039133	19850226
DE3430532 A1	19850829	DE19843430532	19840818
DE3430533 A1	19850905	DE19843430533	19840818
EP0153624 A2	19850904	EP19850101256	19850207
EP0153624 A3	19860813	EP19850101256	19850207
EP0159473 A2	19851030	EP19850101257	19850207
EP0159473 A3	19860820	EP19850101257	19850207
US4670023 A	19870602	US19850706545	19850228
US4674418 A	19870623	US19850706546	19850228
ZA8501484 A	19851127	ZA19850001484	19850227
ZA8501485 A	19851127	ZA19850001485	19850227

Priority:

DE19843407157 19840228 DE19843430532 19840818 DE19843430533 19840818

Probable Assignee: RAG FOUNDATION

Assignee(s): (std): RAG FOUNDATION ; RUHRKOHLE AG

Assignee(s): RUHRKOHLE AKTIENGESELLSCHAFT ; RUHRKOHLE A G

Inventor(s): (std): SCHAEFER WOLFGANG ; SCHAEFER WOLFGANG DR ING ; SCHAER WOLFGANG ; SCHAER WOLFGANG DR ING ; RICHTER ARTHUR ING GRAD ; RICHTER ARTUR ING GRAD

Inventor(s): RICHTER ARTHUR ING ; RICHTER ARTUR ING ; WOLFGANG SCHAEFER ; WOLFGANG SCHAER

Agent(s): PHILLIPS ORMONDE FITZPATRICK

Designated states: BE DE FR GB NL

57) Family number: 56265914 (US2014305311A)

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Title: MULTI-CYCLONE COLLECTOR

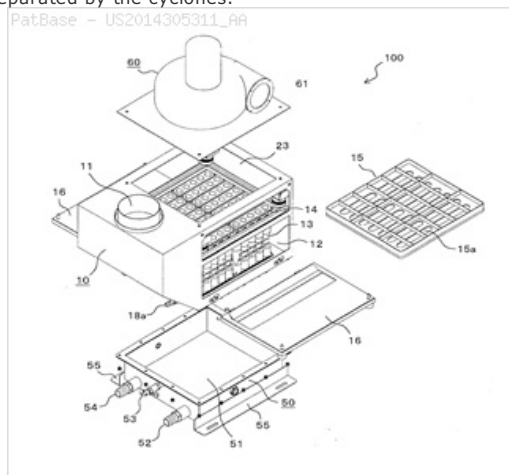
Abstract: A multi-cyclone collector includes a suction port for sucking an air flow including contaminating particles, a cyclone accommodation chamber allowing the air flow sucked through the suction port to be guided thereto, a plurality of cyclones each accommodated in the cyclone accommodation chamber, for transforming the air flow taken in to a downward swirl flow, separating the contaminating particles, then reversing the swirl flow to the upward swirl flow and releasing the upward swirl flow as a purified air flow, a cyclone exit chamber provided above the cyclone accommodation chamber, that allows the purified air flow from the cyclones to be guided thereto, and a drain discharge chamber provided below the cyclone accommodation chamber, for collecting the contaminating particles separated by the cyclones.

Classifications:

International (IPC 8-9): B01D45/12 B01D45/18 B04C11/00 B04C5/14 B04C5/18 B04C5/185 B04C5/23 B04C5/24 B04C5/28 B23Q11/00 (Advanced/Invention); B04C11/00 B04C5/28 (Core/Invention)

CPC: B04C11/00 B04C5/14 B04C5/23 B04C5/28 B01D45/12

US: 55/346 55/347 55/348 55/349 55/424 55/429 55/459.1 95/24 95/271 96/228 96/414 96/423



Family:

Publication number	Publication date	Application number	Application date
CN103889584 A	20140625	CN201380001785	20130920
CN103889584 B	20151230	CN201380001785	20130920
DE602013051177 D1	20190314	DE201360051177T	20130920
EP2851126 A1	20150325	EP20130847110	20130920
EP2851126 A4	20160210	EP20130847110	20130920
EP2851126 B1	20190220	EP20130847110	20130920
ES2717948 T3	20190626	ES20130847110T	20130920
JP2014061201 A1	20160905	JP20130551460T	20130920
JP6214043 B1	20171018	JP20130551460T	20130920
KR20140091654 A	20140722	KR20137029965	20130920
KR20160065994 A	20160609	KR20167013922	20130920
TH146610 A	20160304	TH20131006787	20130920
TW201422311 A	20140616	TW20130136739	20131011
TWI517904 B	20160121	TW20130136739	20131011
US2014305311 AA	20141016	US20130127109	20130920
US8945290 BB	20150203	US20130127109	20130920
WO14061201 A1	20140424	WO2013JP05549	20130920

Priority:

JP20120228480 20121015 EP20130847110 20130920 WO2013JP05549 20130920

Probable Assignee: HORKOS CORP

Assignee(s): (std): HORKOS CORP

Assignee(s): HORKOS CORP FUKUYAMA SHI
Inventor(s): (std): NAKAMURA YUSUKE
Agent(s): KRAMER BARSKE SCHMIDTCHEN PATENTANWALTE PARTG MBB; KRAMER BARSKE SCHMIDTCHEN PATENTANWALTE PARTG MBB; VALLEJO JUAN PEDRO; OKUMURA HIDEYUKI; OSHA LIANG LLP
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 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

58) Family number: 9015916 (US5096587A)

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Title: Hydrocyclone conduit

Abstract: Hydrocyclone separators of the type used to separate contaminants from pulp suspensions in paper mills are connected to feed, accept, and reject conduits using a conduit apparatus in which both feed and accept portions are preferably bent from smooth plate material. The feed and accept portions preferably include generally flat surfaces through which holes are drilled for making connections to the feed and accept nozzles of the hydrocyclones. The smooth plate material eliminates the tendency of pulp to build up on the conduit walls and in the nozzles, thereby avoiding the problems that can occur when such build ups break loose. The nozzles of the hydrocyclones are preferably attached by placing a resilient sealing member around the circumference of the nozzle, and inserting the nozzle into an aperture formed in a generally flat wall of the conduit until the sealing member engages the inside wall of the aperture.

Classifications:

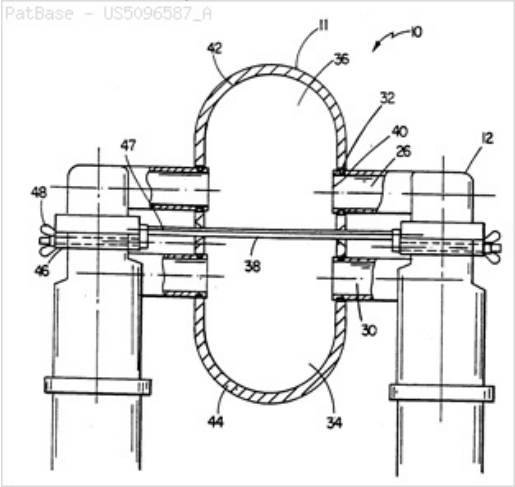
International (IPC 8-9): B04C11/00 B04C5/24 B04C5/28 B23P15/00 D21D5/24 D21F1/68 (Advanced/Invention)

International (IPC 1-7): B01D21/26 B04C11/00 B04C5/24 B04C5/28 B23P15/00 D21F1/68

CPC: Y10S209/931 B04C11/00 B04C5/28 D21D5/24

European: B04C11/00 B04C5/28 D21D5/24

US: 138/115 209/144 209/211 209/728 209/931 210/335 210/512.1 210/512.2 55/459.1



Family:

Publication number	Publication date	Application number	Application date
CA2048126 AA	19920201	CA19912048126	19910730
CA2089438 AA	19930814	CA19932089438	19930212
EP0563523 A2	19931006	EP19930101152	19930127
EP0563523 A3	19940413	EP19930101152	19930127
US5096587 A	19920317	US19900562208	19900731
US5221476 A	19930622	US19920835298	19920213

Priority:

US19900562208 19900731 CA19912048126 19910730 US19920835298 19920213
CA19932089438 19930212

Probable Assignee: SULZER PAPERTEC MIDDLETON INC

Assignee(s): (std): ESCHER WYSS GMBH ; BIRD ESCHER WYSS ; BIRD ESCHER WYSS INC

Assignee(s): BIRD ESCHER WYSS INC A DE CORP ; CHARETTE ERNEST J ; WYSS BIRD ESCHER ; SULZER PAPERTEC MANSFIELD INC ; VOITH SULZER PAPER TECHNOLOGY NORTH AMERICA INC ; SULZER PAPERTEC MIDDLETON INC ; SULZER ESCHER WYSS GMBH ; PAPETTI RICHARD R ; LIVSEY JAMES D ; WYSS BIRD ESCHER A CORP

Inventor(s): (std): CHARETTE ERNEST J ; LIVSEY JAMES D ; PAPETTI RICHARD R

Agent(s): SMART AND BIGGAR

Designated states: AT DE GB SE

59) Family number: 46801927 (AU2010200495A)

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Title: Sampling System

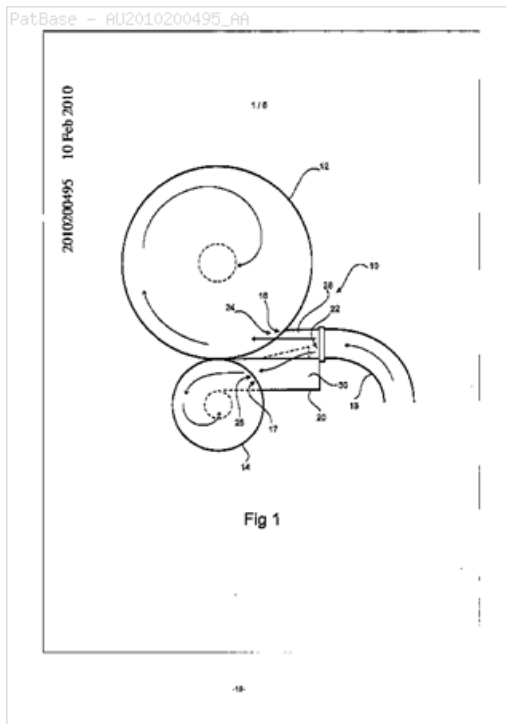
Abstract: A sampling system 10 comprises a diverter element 20 having an inlet 22 and 5 a first outlet 24 and a second outlet 26. The system also comprises a first cyclone 12 having a first intake 16 in communication with the first outlet 24 of the diverter element 20, and a second cyclone 14 having a second intake 17 in communication with the second outlet 26 of the diverter element 20. When drilled material entrained in an air flow enters the inlet 22 of the diverter 10 element 20, a proportion of the airflow and entrained material exits via the first outlet 24 into the first cyclone 12 and the remainder of the airflow and entrained material exits via the second outlet 26 into the second cyclone 14. Drawing suggested for publication with Abstract: Figure 1 1/5 12 10 24 22 305 26 20 1 17 14 Fig1

Classifications:

International (IPC 8-9): B01D50/00 B04C5/28 (Advanced/Invention); B01D50/00 B04C5/00 (Core/Invention)

CPC: B04C5/28 B04C11/00 G01N1/2211 G01N2001/1006

European: B04C11/00 B04C5/28 G01N1/22B5 S01N1/10A

**Family:**

Publication number	Publication date	Application number	Application date
AU2010200495 AA	20100826	AU20100200495	20100210
AU2010200495 BB	20130718	AU20100200495	20100210
AU2013206641 AA	20130718	AU20130206641	20130628

Priority:

AU20090900533 20090210 AU20100200495 20100210 AU20130206641 20130628

Probable Assignee: PAUL KENNEDY

Assignee(s): (std): KENNEDY PAUL ; PAUL KENNEDY

Assignee(s): KENNEDY PAUL JAMES

Inventor(s): (std): KENNEDY PAUL JAMES

Inventor(s): PAUL JAMES KENNEDY

Agent(s): JANET STEAD AND ASSOCIATES PATENT AND TRADE MARKS ATTORNEYS; WRAYS

60) Family number: 4666928 (DE3638327C1)

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Title: Device for sucking out and separating dust or the like from fluids

Abstract: Cyclonic separators for underground mining require constant cleaning in order to suck out dust, mud and water. This makes it impossible to use customary cyclonic separators underground. In order to be able to use cyclonic separation underground, a double cyclonic separator is proposed which is controlled in such a way that whilst one cyclonic separator is operating the other cyclonic separator opens the bottom flap and can thus be emptied, the changing over from operation to emptying taking place by means of an automatic control which is dependent on time, the filling level or partial vacuum.

Classifications:

International (IPC 8-9): B04C11/00 B04C5/08 B04C5/15 B04C5/28

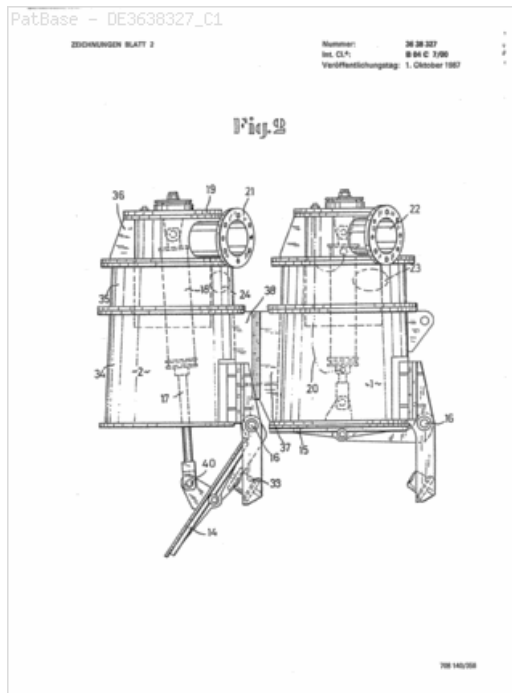
E21F5/00 (Advanced/Invention);

B04C11/00 B04C5/00 E21F5/00 (Core/Invention)

International (IPC 1-7): B04C5/15 B04C7/00 B08B15/00 E21F11/00

CPC: B04C5/08 B04C5/15 B04C5/28 B04C11/00 E21F5/00

European: B04C11/00 B04C5/08 B04C5/15 B04C5/28 E21F5/00



Family:

Publication number	Publication date	Application number	Application date
DE3638327 C1	19871001	DE19863638327	19861110

Priority:

DE19863638327 19861110

Probable Assignee: FOOKE GMBH
Assignee(s): (std): FOOKE GMBH
Assignee(s): FOOKE GMBH 4280 BORKEN DE
Inventor(s): (std): FOOKE HEINRICH
Inventor(s): FOOKE HEINRICH 4280 BORKEN DE

61) Family number: 8143957 (US4257788A)

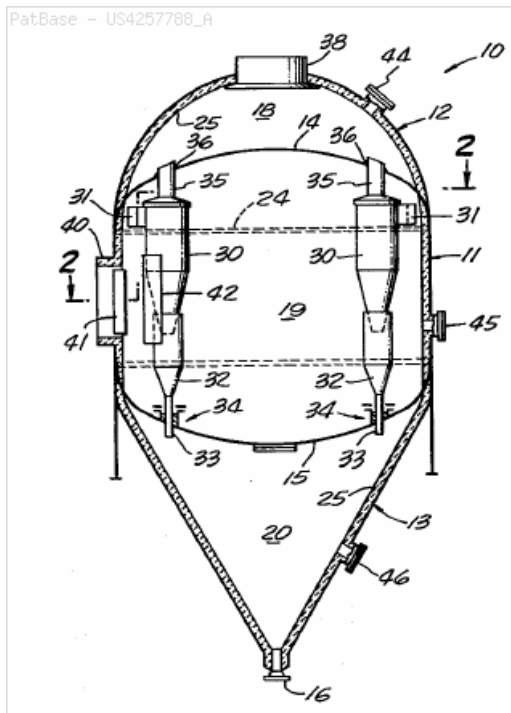
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Title: Power recovery hot gas separator

Abstract: A power recovery separator for processing huge volumes of high temperature pressurized dirty gas en route to a high temperature gas expander. The separator has a single housing sub-divided into overhead, inlet and underflow chambers by a pair of flanged and dished heads of erosion and heat resistant material having a higher coefficient of expansion than the housing material. A multiplicity of inertial separators are supported in parallel between the dished heads and secured to only one thereof. At least portions of the head flanges bear radially against the interior of the housing sidewalls and their rim edges are welded to the housing and, in consequence, expansion of the head serves, in part, to augment the bulge and, in part, to place the high strength housing wall in hoop tension without subjecting the welding to rupture stresses. All gas handling ducts are connected only to the housing wall thereby avoiding the need for any internal housing, any internal ducts, distribution screens or any expansion joints.

Classifications:

International (IPC 8-9): B01D45/12 B04C11/00
B04C5/28 (Advanced/Invention);
B01D45/12 B04C11/00 B04C5/00 (Core/Invention)
International (IPC 1-7): B01D45/12
CPC: B01D45/12 B04C5/28 B04C11/00
European: B01D45/12 B04C11/00 B04C5/28
US: 165/81 55/346 55/435

**Family:**

Publication number	Publication date	Application number	Application date
US4257788 A	19810324	US19790108808	19791231

Priority:

US19790030025 19790416 US19790108808 19791231

Probable Assignee:

NASSIR NICHOLAS

Assignee(s): (std):

NASSIR NICHOLAS

Inventor(s): (std):

NASSIR NICHOLAS

62) Family number: 66758968 (CN107096652A)

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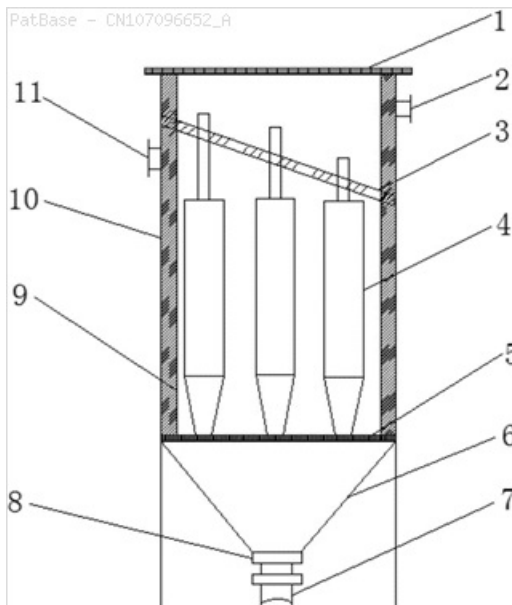
Title: CYCLONE DUST REMOVER CAPABLE OF REDUCING NOISE

Abstract: The invention discloses a cyclone dust remover capable of reducing noise. An upper sealing cover is arranged at the top of a shell; noise isolation plates are mounted on the inner walls of two sides of the shell; the noise isolation plates consist of closed cell foam layers, open cell foam layers and fiber noise absorbing layers; the closed cell foam layers are mounted at the upper parts of the fiber noise absorbing layers; the fiber noise absorbing layers are mounted at the upper parts of the open cell foam layers; three cyclone separators are mounted in the shell; and the cyclone separators are connected in parallel. The cyclone dust remover capable of reducing noise is simple in structure and high in practicability, and is provided with the noise isolation plates to achieve excellent noise isolation effect; the noise isolation plates are higher in strength; the dust removing efficiency is greatly improved through the three cyclone separators connected in parallel; and high-temperature resisting layers and corrosion resisting layers are arranged on the inner walls of the cyclone separators to preferably protect the dust remover so as to prolong the service life.

Classifications:

International (IPC 8-9): B04C11/00 B04C5/085
B04C5/28 (Advanced/Invention)

CPC: B04C5/28 B04C11/00 B04C5/085

**Family:**

Publication number	Publication date	Application number	Application date
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Priority:

CN201710523490 20170630

Probable Assignee:

QIAO XINGYOU

Assignee(s): (std):

QIAO XINGYOU

Assignee(s):

QIAOXING YOU

Inventor(s): (std):

QIAO XINGYOU

63) Family number: 33176969 (DE102005003149B8)

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Title: Oelabscheider zur Entoelung des Kurbelgehäuse-Entlueftungsgases und Verfahren

Abstract: Oil separator for deoiling crankcase vent gas in an internal combustion engine, comprising separation chambers (12, 14, 16), a gas inlet (32) connected to the crankcase, oil outlets (30) and gas outlets (24, 26, 28), comprises sensors (34) for measuring the loading of the separation chambers and valves (36) for controlling the flow of gas from the inlet in response to the sensors. An independent claim is also included for deoiling crankcase vent gas in an internal combustion engine by providing a sensor to measure the loading of an oil separator and closing a gas inlet of the separator on reaching a threshold loading.

Classifications:

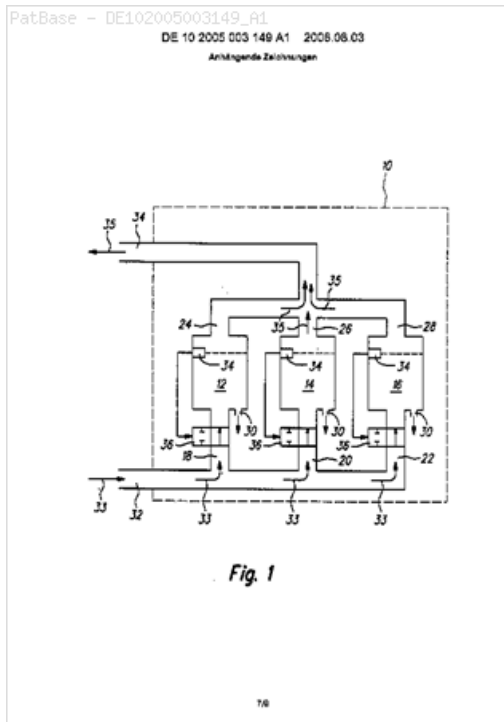
International (IPC 8-9): B01D35/15 B01D35/157 B01D45/16 B04C5/28 F01M13/04 (Advanced/Invention);

B01D35/14 B01D45/12 B04C5/00 F01M13/00 (Core/Invention)

CPC: B04C5/28 B04C11/00 F01M13/00 F01M2013/0044

F01M2013/0066

European: B04C11/00 B04C5/28 F01M13/00 R01M13/00F2 R01M13/00F4D2

**Family:**

Publication number	Publication date	Application number	Application date
DE102005003149 A1	20060803	DE200510003149	20050121
DE102005003149 B4	20071227	DE200510003149	20050121
DE102005003149 B8	20080410	DE200510003149	20050121

Priority:

DE200510003149 20050121

Probable Assignee: JOMA POLYTEC KUNSTSTOFFTECHNIK

Assignee(s): (std): BAYERISCHE MOTOREN WERKE AG ; JOMA POLYTEC KUNSTSTOFFTECHNIK

Assignee(s): JOMA POLYTEC KUNSTSTOFFTECHNIK GMBH

Inventor(s): (std): MAUTE ALEXANDER ; MAUTZ ALEXANDER ; WIMMER RUDOLF

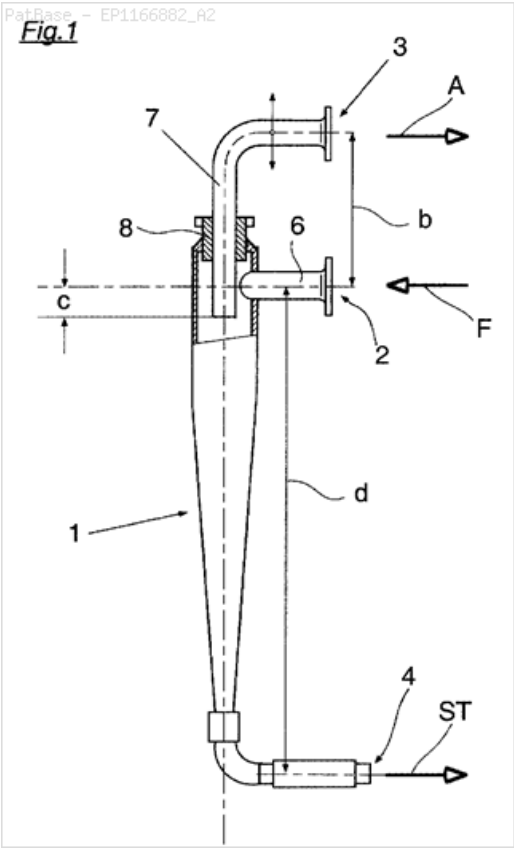
64) Family number: 17805971 (EP1166882A2)

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Title: Hydrocyclone

Abstract: The hydrocyclone, to separate a liquid (F) into fractions, has at least one inlet opening (2) for the liquid (F), at least one outlet (3) for lightweight matter and at least one outlet (4) for heavy matter. At least two openings are at rigid mountings fitted to the hydrocyclone (1), where at least two of the three openings can be positioned in relation to each other with adjusted settings. The gap (b) can be adjusted between the inlet opening (2) and the outlet (3) for lightweight matter, and the gap (d) can be adjusted between the inlet opening (2) and the outlet (4) for heavy matter. The gap can also be adjusted between the inlet opening (2) and the outlet for the removal of light dirt or air. The position of at least one center line through the openings can be adjusted axially at the hydrocyclone, to vary the dimensions of the structured gaps between the openings. In operation, the heavy matter drops to the bottom outlet opening (4) of the hydrocyclone. The gap adjustment is made through at least one threaded screw section (8), where the connection is fitted at the hydrocyclone (1). The threaded screw section (8) has a rotating threaded sleeve with an upper inner threading, and an axially offset lower inner threading, where one is a right thread and the other a left thread. The lower threading is screwed on to an outer threading at the hydrocyclone, and the upper threading is screwed to the outer threading of the pipe (7) which carries the lightweight matter to the outlet opening (3). Where there is an immersion pipe with the pipe for the outflow of lightweight matter, the outflow pipe slides in relation to the immersion pipe.

Classifications:
International (IPC 8-9): B01D17/038 B04C11/00 B04C5/081 B04C5/13 B04C5/14 B04C5/28 D21D5/24 (Advanced/Invention); B01D17/02 B04C11/00 B04C5/00 D21D5/00 (Core/Invention)
International (IPC 1-7): B01D17/038 B01D21/26 B03B5/32 B04C11/00 B04C5/081 B04C5/12 B04C5/13 B04C5/14 B04C5/28 D21D5/24
CPC: B04C5/081 B04C5/13 B04C5/14 B04C5/28 B04C11/00 B04C2005/133 D21D5/24
European: B04C11/00 B04C5/081 B04C5/13 B04C5/14 B04C5/28 D21D5/24 L04C5/13A



Family:

Publication number	Publication date	Application number	Application date
DE20010899 U1	20001005	DE20002010899U	20000620
EP1166882 A2	20020102	EP20010107361	20010326
EP1166882 A3	20030723	EP20010107361	20010326

Priority:

DE20002010899U 20000620

Probable Assignee: VOITH SULZER PAPIERTECH PATENT

Assignee(s): (std): VOITH PAPER PATENT GMBH ; VOITH SULZER PAPIERTECH PATENT

Assignee(s): VOITH SULZER PAPIERTECHNIK PATENT GMBH

Inventor(s): (std): HARTMANN ROLF ; NUBER MARTIN

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

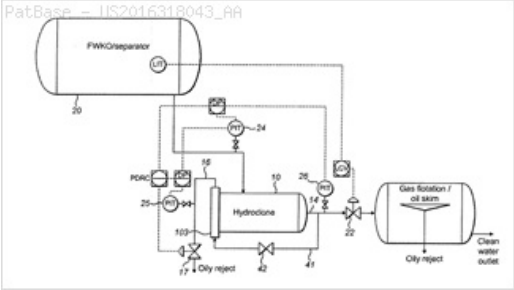
65) Family number: 59509979 (US2016318043A)

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Title: A FLUID TREATMENT SYSTEM, A FLUID PROCESSING APPARATUS AND A METHOD OF TREATING A MIXTURE

Abstract: A fluid treatment system, a fluid processing apparatus and a method of treating a mixture are provided in which a separator has two outlets for different components of mixed fluid.

Classifications:
International (IPC 8-9): B01D17/02 B01D17/12 B04C11/00 B04C5/23 B04C5/28 B04C5/30 C02F1/38 C02F1/40 (Advanced/Invention)
CPC: B04C5/30 C02F1/38 C02F1/40 C02F2101/32 B01D17/0217 B04C11/00 B01D17/12 B04C5/23 B04C5/28 B01D17/0208 C02F1/32
US: 1/1 210/739 210/787



Family:

Publication number	Publication date	Application number	Application date
BR112016013894 A2	20170808	BR20161113894	20141203
BR112016013903 A2	20170808	BR20161113903	20141203
DE602013017629 D1	20170406	DE201360017629T	20131216
DE602013026811 D1	20171102	DE201360026811T	20131216
EP2883586 A1	20150617	EP20130197553	20131216
EP2883586 B1	20170222	EP20130197553	20131216
EP2883587 A1	20150617	EP20130197554	20131216
EP2883587 B1	20170920	EP20130197554	20131216
US2016318043 AA	20161103	US20140105094	20141203

US2016361728 AA	20161215	US20140105026	20141203
WO15090966 A1	20150625	WO2014EP76406	20141203
WO15090967 A1	20150625	WO2014EP76408	20141203

Priority:

EP20130019755 20131216 EP20130197553 20131216 EP20130197554 20131216
WO2014EP76408 20141203 WO2014EP76406 20141203

Probable Assignee: NATIONAL OILWELL VARCO LP

Assignee(s): (std): HALEY STEPHEN ; NAT OILWELL CARCO ; NAT OILWELL VARCO LP

Assignee(s): NATIONAL OILWELL CARCO ; NATIONAL OILWELL VARCO LP ; NATIONAL OILWELL VARCO LP HOUSTON

Inventor(s): (std): WOLF MARK ; WOLF MARK E

Inventor(s): WOLF MARK KATY ; MARK WOLF

Agent(s): HALEY STEPHEN; GILL JENNINGS AND EVERY LLP

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 IR 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 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

66) Family number: 67146998 (WO17168861A1)

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Title: MAGNETIC CYCLONE DEVICE AND TREATMENT METHOD FOR SAME

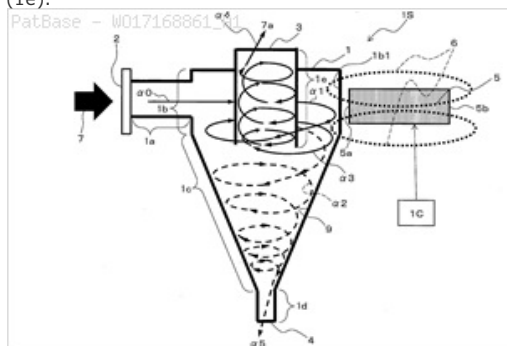
Abstract: This magnetic cyclone device (1S) comprises: a cyclone (1) that is a truncated cone with the vertex facing down and that has a cylindrical base (1b) having an inlet (2) on a side and a conical section (1c) formed continuous with the bottom of the cylindrical base (1b) and provided with a lower outlet (4) near the vertex; a cylindrical section (1e) that is disposed in the center of the cylindrical base (1b) and that is provided with an upper outlet (3); and a magnet (5) that is provided near the outer circumference of the cylindrical base (1b). Magnetic floc contained in a liquid to be treated (7) flowing into the cylindrical base (1b) from the inlet (2) is discharged from the lower outlet (4) after being attracted by the magnet (5) to the vicinity of an inner face (1b1) of the cylindrical base (1b), and the liquid to be treated from which the magnetic floc has been removed flows out from the upper outlet (3) of the cylindrical section (1e).

Classifications:

International (IPC 8-9): B01D21/28 B03C1/00 B04C11/00

B04C5/28 (Advanced/Invention)

CPC: B01D21/28 B03C1/00 B04C5/28 B04C11/00



Family:

Publication number	Publication date	Application number	Application date
JP2017176906 A2	20171005	JP20160063387	20160328
WO17168861 A1	20171005	WO2016JP87113	20161213

Priority:

JP20160063387 20160328

Probable Assignee: HITACHI LTD

Assignee(s): (std): HITACHI LTD

Inventor(s): (std): MOCHIZUKI AKIRA

Agent(s): ISONO INT PATENT OFFICE PC

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 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