

26 Documents

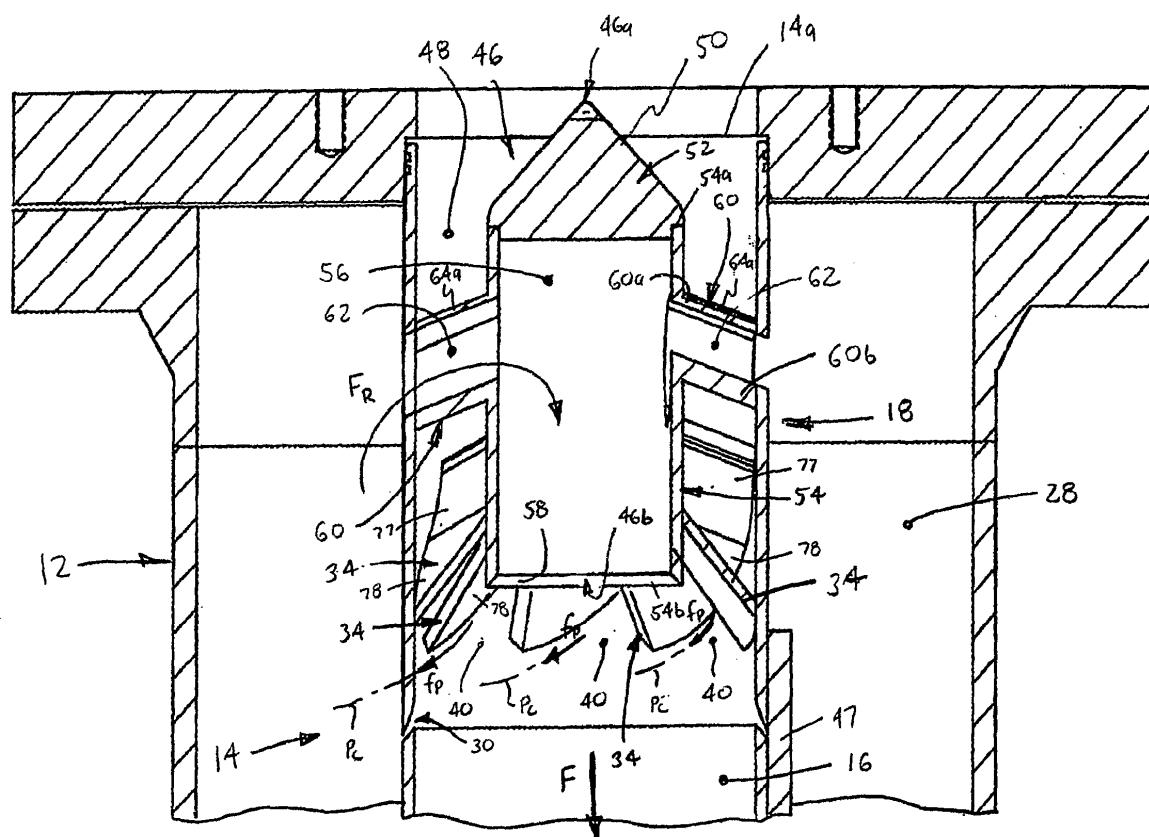
Publication numbers	Title	Current assignees
EP2066422 A2	Improved static fluid separator device	DRESSER RAND
EP-849433 A2	Downhole fluid separation unit	CAMCO
EP2059317 A2	Three-phase cyclonic separator with a debris trap	EATON
EP-395647 A1	Hydrocyclone overflow transport.	BAKER HUGHES
EP3426406 A1	Fluid separation apparatus and system	NATIONAL OILWELL VARCO
FR1332477 A	Cyclone separator	CLARKE
US2931508 A	Single phase hydraulic separator	WHIRLPOOL
EP-313197 A2	Separator	SERCK BAKER
CN106111360 A	Compound cyclone separator	CHANGSHU INSTITUTE OF TECHNOLOGY
EP2429715 A1	An assembly with multiple hydrocyclones, method for assembling multiple hydrocyclones and support structure for multiple hydrocyclones	OVIVO LUXEMBOURG
CN108325764 A	Cyclone separator short-circuit current measuring system and measuring method thereof	WUHAN INSTITUTE OF TECHNOLOGY
EP1063017 A2	Seperating device, seperation unit for such a seperating device, and seperating method.	HOVEX
CN109332019 A	Cyclone separator for starch washing	ZHANG BINGYANG
EP2052659 A2	Cyclonic separation apparatus	HOOVER UNIVERSAL
EP1938732 A1	Cyclonic separation apparatus	HOOVER UNIVERSAL
EP2125240 A1	Hydro cyclone device and hydro cyclone installation	BLUM HOLGER
EP2648820 A1	Device for separating media	RT FILTERTECHNIK
WO2009152678 A1	A cyclone separator	SINO GAS & OIL TECHNOLOGY
EP-979345 A2	Oil separation and pumping systems	BAKER HUGHES
EP2822694 A1	Centrifugal separator	THYSSENKRUPP INDUSTRIAL SOLUTIONS
FR2515528 A1	METHOD AND APPARATUS FOR SEPARATING A MEDIUM INTO COMPONENTS OF DIFFERENT MASSES OF PARTICLES	NOBAR
EP2127752 A2	Fluidic structures for membraneless particle separation	PALO ALTO RESEARCH CENTER
EP3436659 A1	Separation device for separating a fluid	BIG SWING
EP2950692 A1	Dirt separator for a vacuum cleaner	DYSON TECHNOLOGY
EP1066115 A2	Cyclonic separation apparatus	DYSON TECHNOLOGY

Publication numbers	Title	Current assignees
US20100175869 A1	Downhole separator	SEPACO

Family 1/26 - FAMPAT - ©Questel

Title

(EP2415507)

Improved static **fluid separator** device**Images****Publication numbers with kind code & date**

BRPI0717253	B1	2018-05-08	BR200717253
CA2663868	C	2015-11-10	CA2663868
US8746464	B2	2014-06-10	US8746464
BRPI0717253	A2	2013-10-08	BR200717253
EP2066422	B1	2012-06-27	EP2066422
EP2415507	A1	2012-02-08	EP2415507
EP2066422	A4	2011-03-30	EP2066422
US20100072121	A1	2010-03-25	US20100072121
EP2066422	A2	2009-06-10	EP2066422
MX2009003255	A	2009-04-07	MX2009003255
WO2008/039491	A3	2008-05-15	WO200839491
CA2663868	A1	2008-04-03	CA2663868
WO2008/039491	A2	2008-04-03	WO200839491

**Abstract**

(EP2415507)

A **fluid separator** includes a casing and a tubular main body disposed in the casing and having a central axis, inlet and outlet ends spaced along the axis, inner and outer circumferential surfaces; and drain passage(s) extending radially between the inner and outer surfaces. A collection chamber is defined between the outer surface and the casing and the inner surface defines a central flow passage, such that liquid contacting the inner surface flows through the drain passage(s) and into the collection chamber. Axially spaced apart first and second drain passages have an axial width,

wherein the width of the first drain passage is greater than the width of the second drain passage.

Inventors

MAIER WILLIAM C

Latest standardized assignees - inventors removed

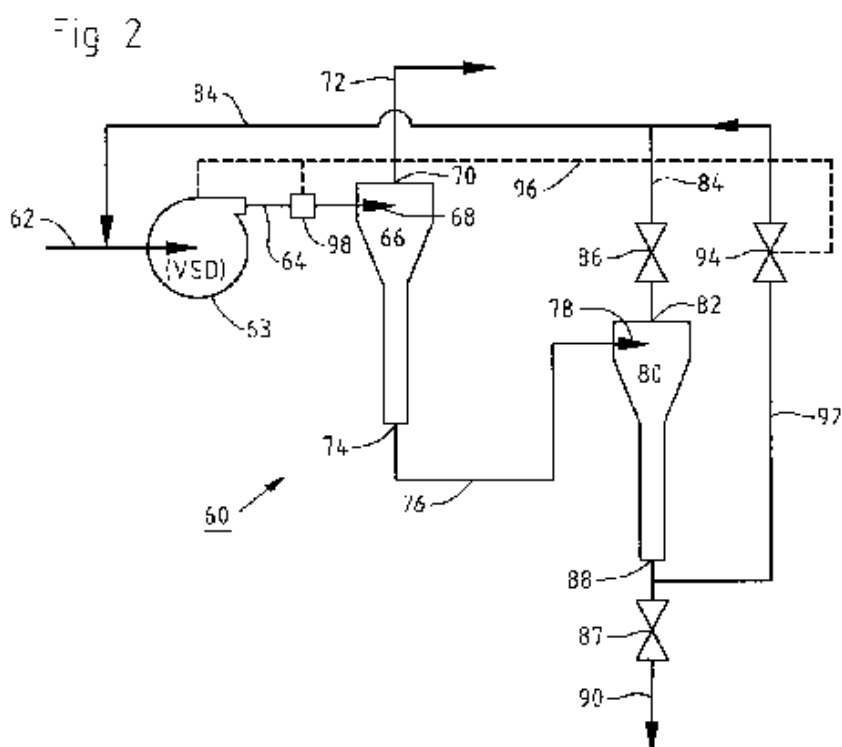
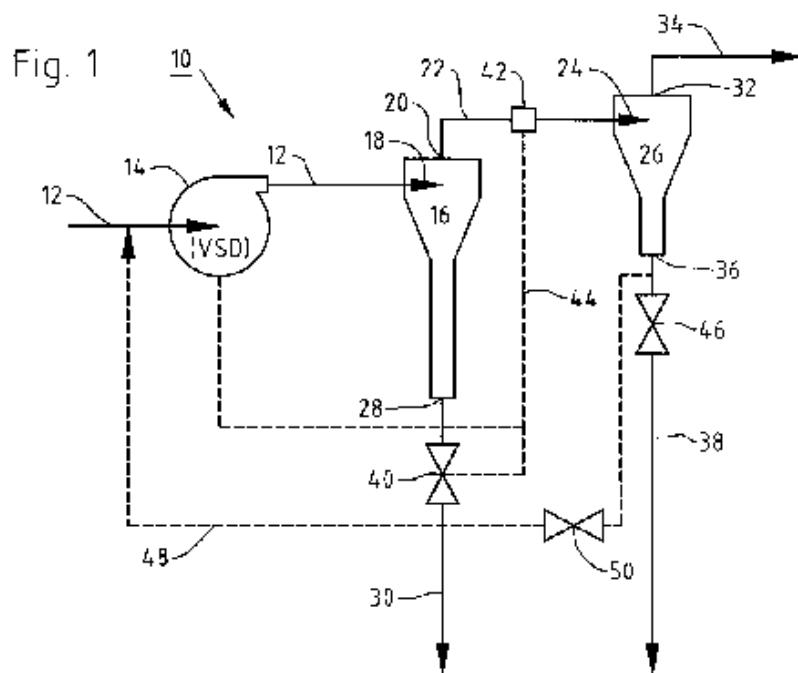
DRESSER RAND

Family 2/26 - FAMPAT - ©Questel

Title

(EP-849433)

Downhole fluid separation unit

Images

Publication numbers with kind code & date

CA2210669	C	2006-10-03	CA2210669				
NO313769	B1	2002-11-25	NO-313769				
DE69715796	D1	2002-10-31	DE69715796				
EP0849433	B1	2002-09-25	EP-849433				
US5961841	A	1999-10-05	US5961841				
EP0849433	A3	1999-03-24	EP-849433				
EP0849433	A2	1998-06-24	EP-849433				
NO973272	L	1998-06-22	NO-973272				
CA2210669	A1	1998-06-19	CA2210669				
NO973272	D0	1997-07-15	NO9703272				

Abstract

(EP0849433)

A downhole fluid separation system comprises a **fluid separator** (16) having a fluid inlet (18), a first fluid outlet (20), and a second fluid outlet (28), with a sensing device (42) 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 (18) of the **fluid separator** in response to a signal provided by the sensing means (42). 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**.

Inventors

BOWERS BILL E

Latest standardized assignees - inventors removed

CAMCO

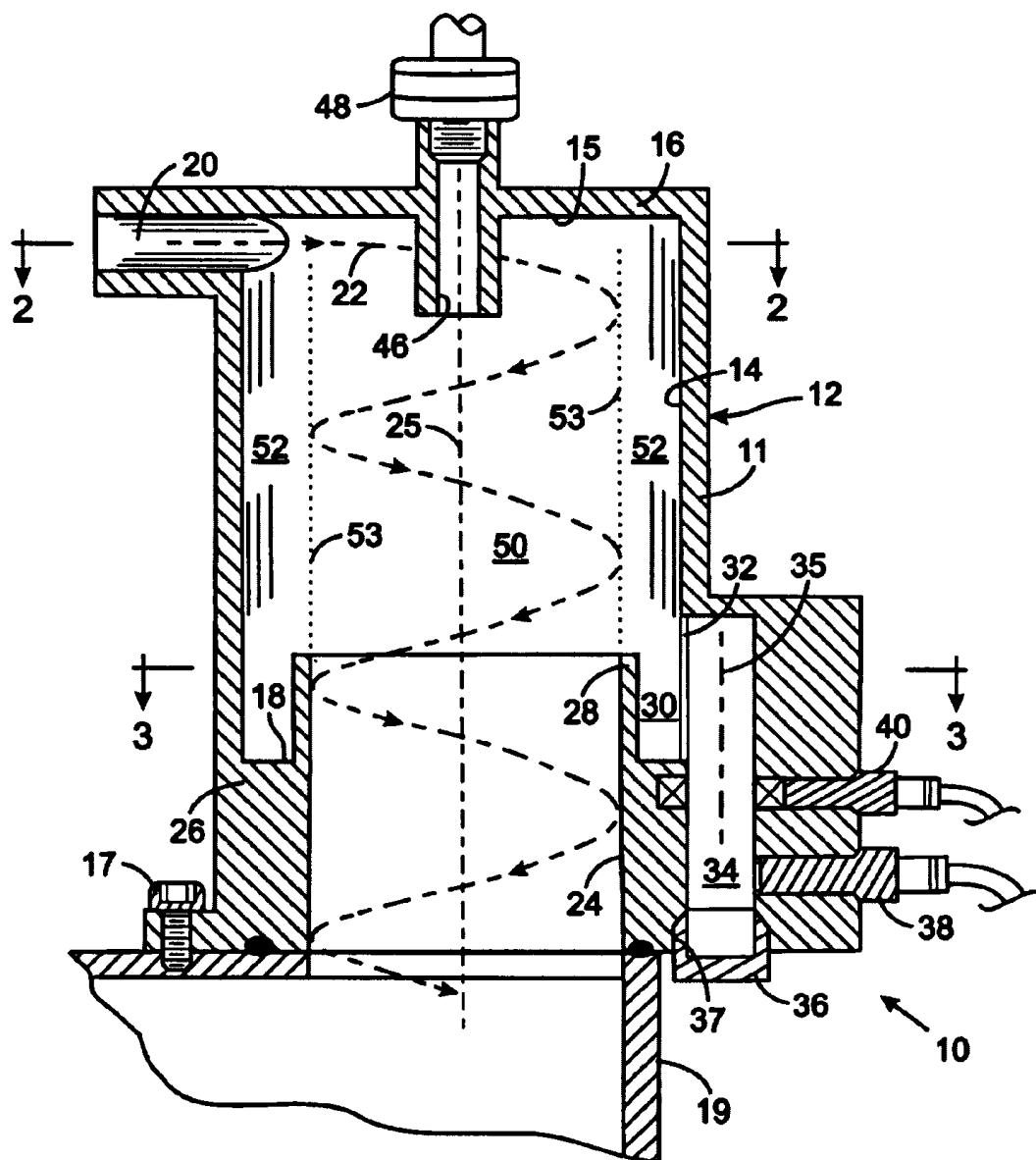
Family 3/26 - FAMPAT - ©Questel

Title

(EP2059317)

Three-phase cyclonic separator with a debris trap

Images



Publication numbers with kind code & date

EP2059317	B1	2019-08-21	EP2059317
CA2662573	C	2013-03-19	CA2662573
CN101511442	B	2012-07-18	CN101511442B
CN101511442	A	2009-08-19	CN101511442
EP2059317	A2	2009-05-20	EP2059317
WO2008/029262	A3	2008-05-29	WO200829262
CA2662573	A1	2008-03-13	CA2662573
WO2008/029262	A2	2008-03-13	WO200829262
US7288139	B1	2007-10-30	US7288139



Abstract

(EP2059317)

An apparatus (10) separates liquid, gas and solid components of a mixture in a fluid system. An inlet (20) for receiving the mixture opens into a separation chamber (14) tangentially. with a cylindrical side wall (11) and a gas outlet (45) has an opening in a first end wall (16) adjacent the inlet (20) to allow gas to exit the separator (10). A fluid outlet (24) is located in an opposing second end wall (26). A debris passage (32) extends through the cylindrical side wall (11) and oriented so that the radial velocity of the particles within the separation chamber (14) directs the particles through the debris passage (32). The debris passage (32) leads to a particle collection chamber (34) in which the particles accumulate. Unlike prior

separators that relied on the tangential velocity of the particles, the present apparatus utilizes the greater radial, velocity to drive the particles from the separation chamber into the particle collection chamber.

Inventors

SHOWALTER STEPHEN

Latest standardized assignees - inventors removed

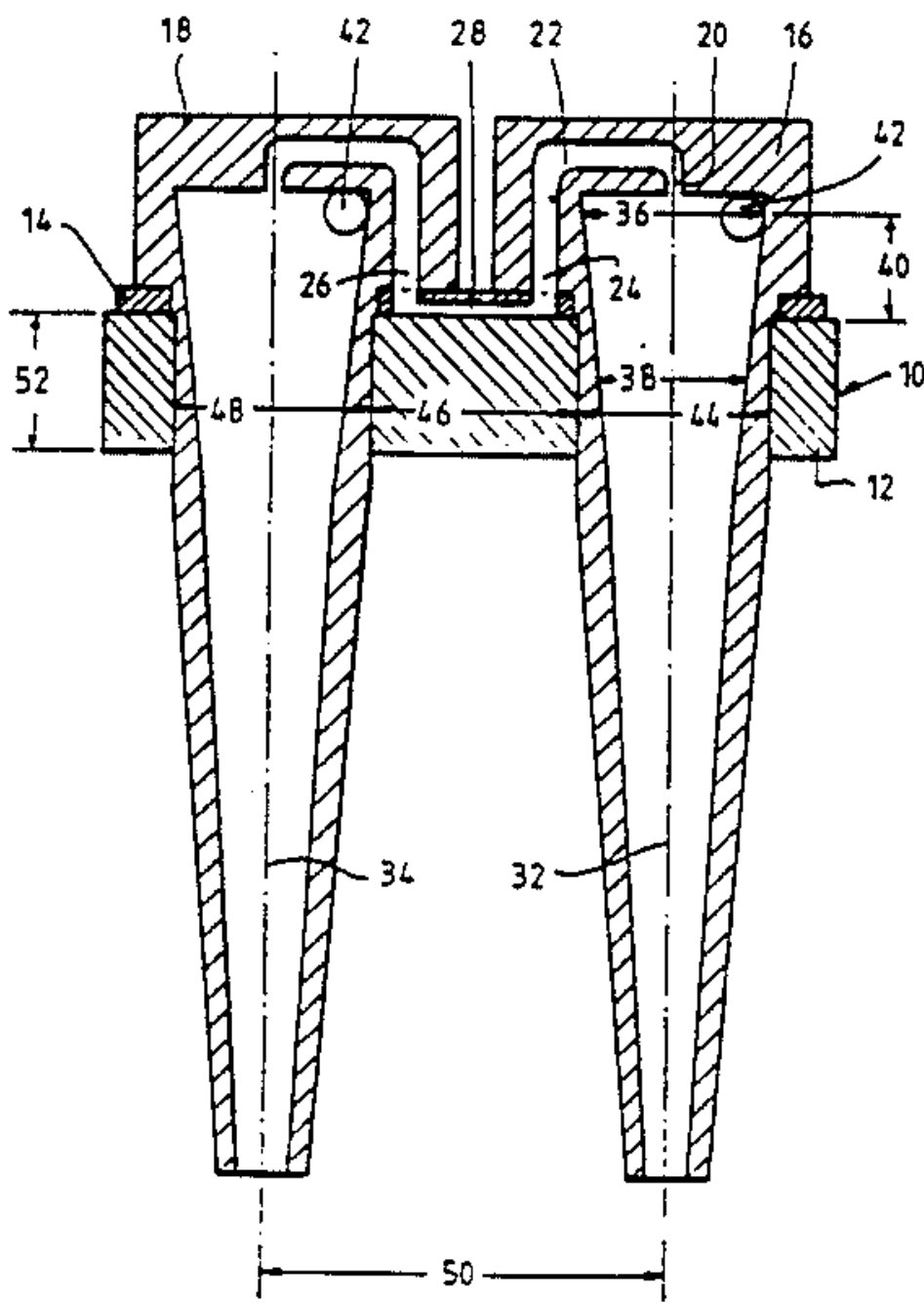
EATON

Family 4/26 - FAMPAT - ©Questel

Title

(EP-395647)

Hydrocyclone overflow transport.

Images

NO175292	B	1994-06-20	NO-175292
CA1329371	C	1994-05-10	CA1329371
DE3885106	D1	1993-11-25	DE3885106
AT96057	T	1993-11-15	ATE096057
EP0395647	B1	1993-10-20	EP-395647
MX171001	B	1993-09-24	MX-171001
US5154826	A	1992-10-13	US5154826
AU615689	B2	1991-10-10	AU-615689
EP0395647	A4	1991-03-13	EP-395647
JPH03500143	A	1991-01-17	JP03500143
EP0395647	A1	1990-11-07	EP-395647
NO901205	D0	1990-03-14	NO9001205
NO901205	L	1990-03-14	NO-901205
AU2521388	A	1989-04-17	AU8825213
WO89/02312	A1	1989-03-23	WO8902312



Abstract

(EP0395647)

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.

Inventors

PRENDERGAST GAVAN JAMES JOSEPH

WEBB DAVID ANDREW

Latest standardized assignees - inventors removed

BAKER HUGHES

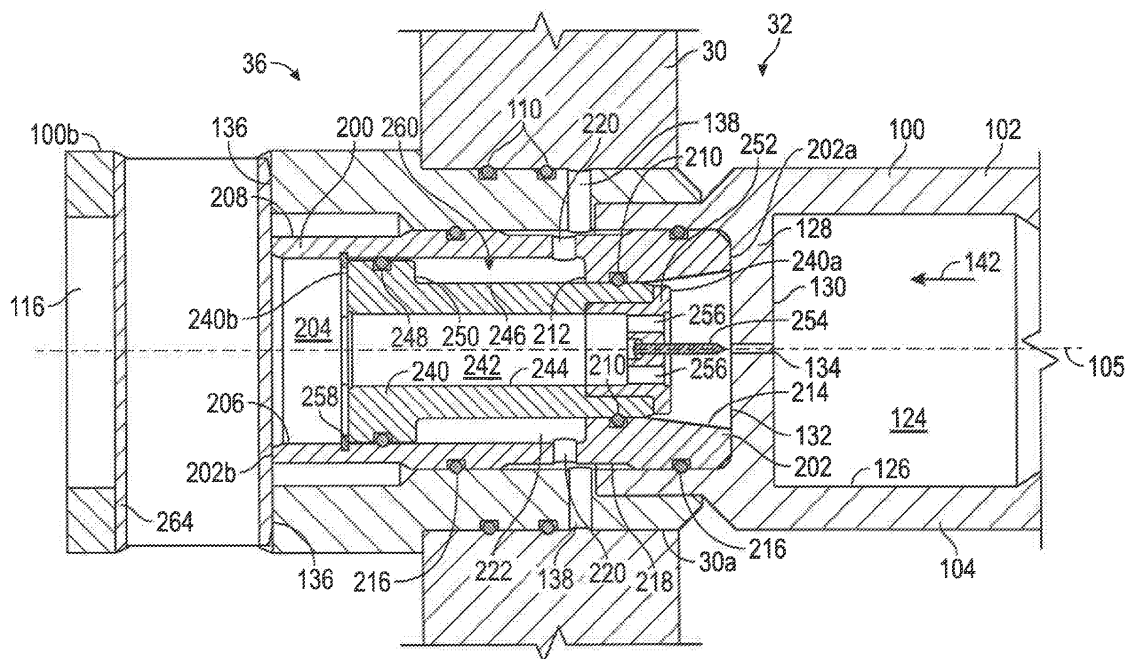
Family 5/26 - FAMPAT - ©Questel

Title

(EP3426406)

Fluid separation apparatus and system

Images



Publication numbers with kind code & date

US20190262844	A1	2019-08-29	US20190262844
EP3426406	A1	2019-01-16	EP3426406
BR112018068260	A2	2019-01-15	BR112018068260
CO2018010729	A2	2018-10-22	CO2018010729
BR112018068260	A1	2018-10-16	BR112018068260
CA3017362	A1	2017-09-14	CA3017362
WO2017/156468	A1	2017-09-14	WO2017156468



Abstract

(EP3426406)

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).

Inventors

WEAVER RANDALL FERRAIN
WOLF MARK ERNEST
EGGLESTON CLIFTON DEE

Latest standardized assignees - inventors removed

NATIONAL OILWELL VARCO

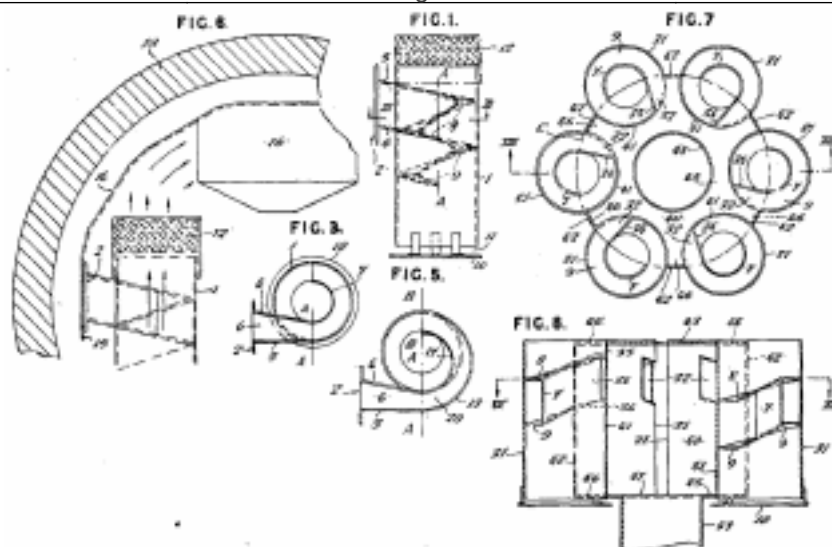
Family 6/26 - FAMPAT - ©Questel

Title

(FR1332477)

Cyclone separator

Images



Publication numbers with kind code & date

GB937549	A	1963-09-25	GB-937549
FR1332477	A	1963-07-12	FR1332477



Abstract

(GB937549)

937,549. Cyclone separators. CLARKE, CHAPMAN & CO. Ltd. Aug. 21, 1962 [Aug. 29, 1961; April 11, 1962], Nos. 31106/61 and 13985/62. Class 23. In a cyclone separator for separating solid or liquid particles from a gas stream and comprising a cylindrical casing 1, Fig. 1, into which the particle-laden gas is introduced tangentially, Fig. 3, or spirally, Fig. 5, and from which the cleaned gas and the separated particles are discharged respectively at the top and bottom, the entry duct 2, which is of rectangular section, is helically disposed about the axis of the casing and is fully enclosed, from the radius at which its inner wall 4 (Fig. 5) or outer wall 3 (Fig. 3) merges tangentially into the casing, for substantially 180 degrees about the casing axis, its upper and lower walls 5, 6 thereafter continuing helically within the casing. In Fig. 3 the inner wall 4 extends inside the casing for 180 degrees from the plane A-A at which the outer wall merges tangentially with the casing 1. In Fig. 5 the inner wall 4 is tangential to the casing at plane A-A and continues as a spiral portion 17 within the casing to the opposite plane B-B whereas the outer wall 3 extends between the two planes as an external spiral portion which merges tangentially with the casing at the plane B-B. In both figures, the upper and lower walls 5, 6, after their first 180 degrees portion from the plane A-A, form inside the cavity an inwardly open helical channel the base of which is constituted by the casing. When treating wet steam, the upper part of the casing may be provided with a pad of wire mesh fabric 12 which retains the last traces of water remaining in the steam. A plate or disc 10 is suspended from the lower end of the casing for supporting a water vortex inside the casing independently of the level of the water outside it so that the separated water issues through the gap 11 tangentially and nearly horizontally thereby preventing water external to the casing from entering the bottom of the casing and minimizing re-entrainment of steam in the separated water. In Fig. 6, the inlet branches 2 of a number of separators 1 disposed in one or two horizontal ranks are respectively connected to one vertical portion 15 or opposite vertical portions of a polygonal baffle 14 longitudinally extending inside a steamwater drum 13 of a steam generator. Steamwater mixture entering the drum from evaporator tubes led into the drum wall is thus caused to flow through the separators, the separated water returning to the water in the drum and the saturated steam passes out towards dryers 16 before being directed to the superheater section of the generator. In Figs. 7 and 8, a number of separators, are spaced around an inlet duct 48 to form a unitary assembly. The inlet duct 32 of each separator does not protrude beyond its casing 31, its outer wall being constituted only by the casing wall. The duct 48 opens into the top or, as shown, the bottom of an enclosure 40 bounded by the portions 41 of the casings 31, vertical plates 42 between the casings (these being omitted if the casings are in mutual contact) and upper and lower plates 43, 45. The assembly may be used in conjunction with a nuclear reactor for producing steam. Specification 937,549 is referred to.

Inventors

MORNS JAMES GREENWELL

Latest standardized assignees - inventors removed

CLARKE

Family 7/26 - FAMPAT - ©Questel

Title

(US2931508)

Single phase hydraulic separator

Images

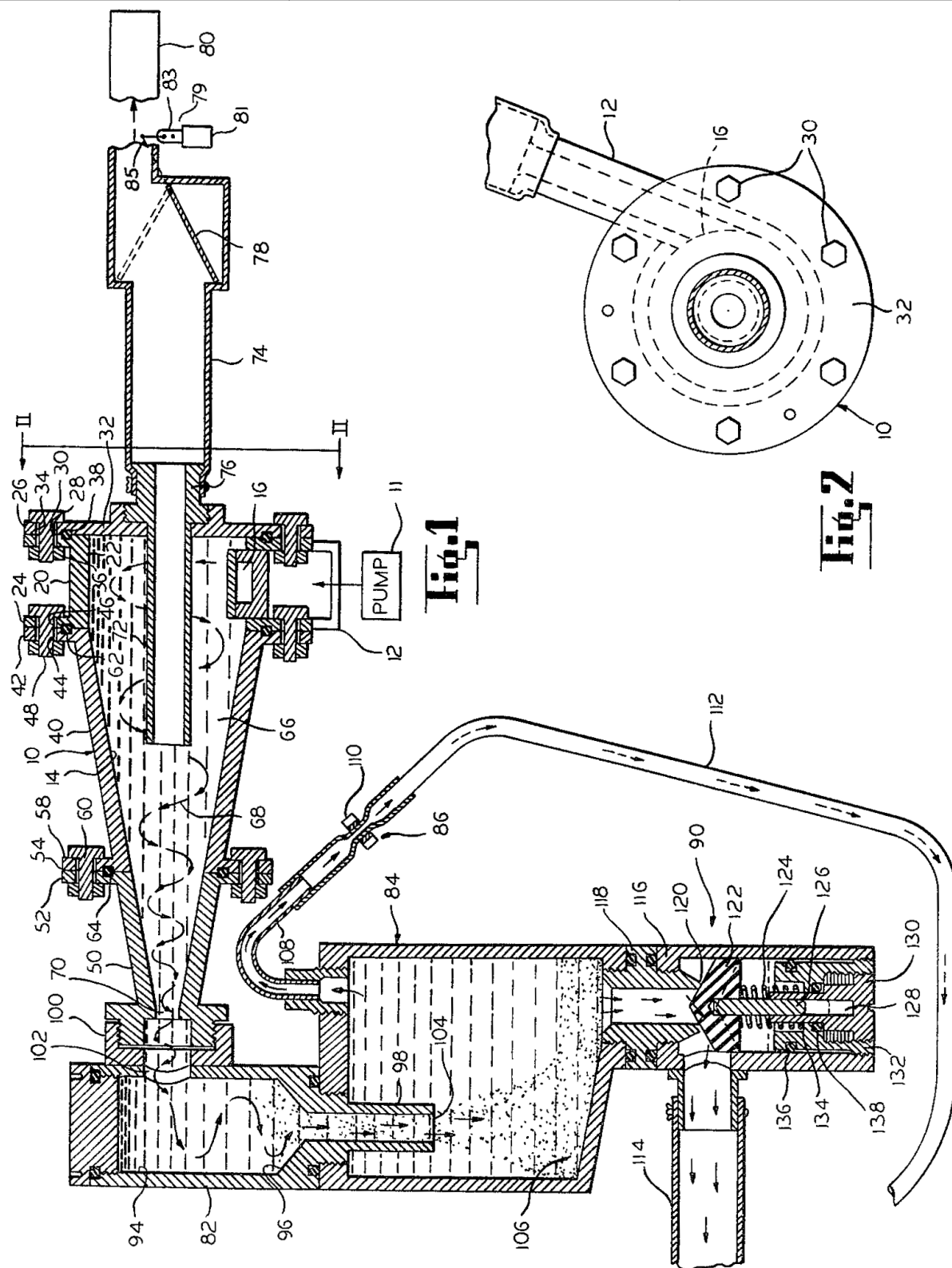


Fig. 1

Fig. 2

INVENTORS
HAROLD H. MORRIS
SAMUEL E. STONE

BY

Hill, Sherman, Meroni, Cross & Simpson
ATTORNEYS

Publication numbers with kind code & date

US2931508

A 1960-04-05 US2931508



Inventors

MORRIS HAROLD H

STONE SAMUEL E

Latest standardized assignees - inventors removed

WHIRLPOOL

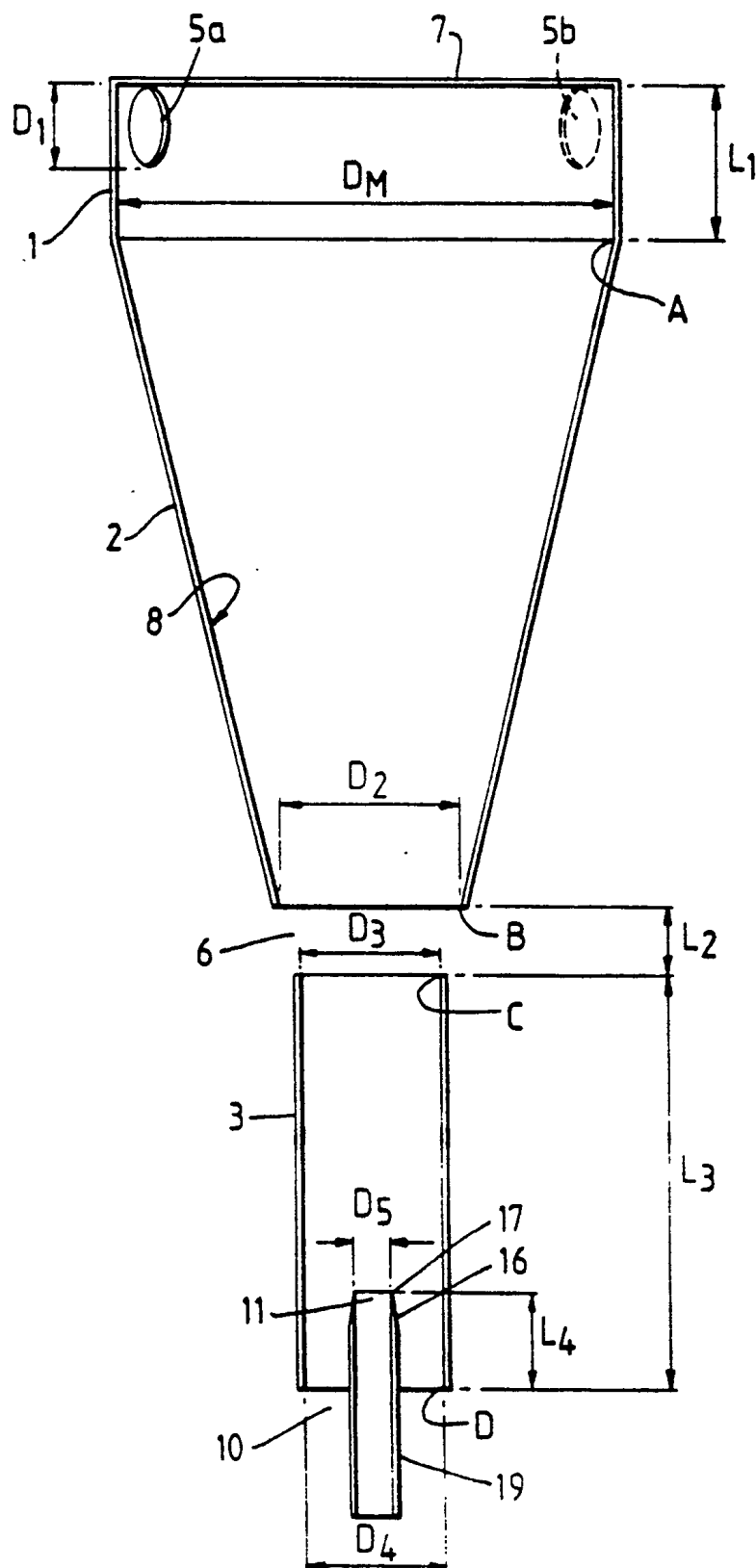
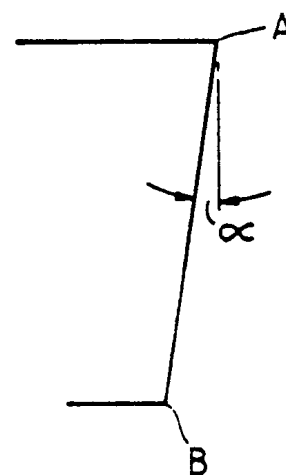
Family 8/26 - FAMPAT - ©Questel

Title

(EP-313197)

Separator

Images

Fig.1.*Fig.2.*

Publication numbers with kind code & date

DK175444	B1	2004-10-25	DK-175444
NO304139	B1	1998-11-02	NO-304139
EP0313197	B1	1995-12-27	EP-313197
CN1026298	C	1994-10-26	CN1026298C
CA1328629	C	1994-04-19	CA1328629
EG18592	A	1993-10-30	EG--18592
IL87632	B	1992-09-06	IL--87632
IN171235	B	1992-08-22	IN-171235
AU620045	B2	1992-02-13	AU-620045
GB2231287	B	1991-09-04	GB2231287
US5008014	A	1991-04-16	US5008014
GB2231287	A	1990-11-14	GB2231287
GB9004892	D0	1990-05-23	GB9004892
NO901005	L	1990-04-30	NO-901005
DK55590	A	1990-04-26	DK9000555
DK55590	D0	1990-03-02	DK9000555
NO901005	D0	1990-03-02	NO9001005
EP0313197	A3	1989-07-26	EP-313197
WO89/02313	A3	1989-06-15	WO8902313
CN1032751	A	1989-05-10	CN1032751
EP0313197	A2	1989-04-26	EP-313197
AU2304988	A	1989-04-17	AU8823049
WO89/02313	A2	1989-03-23	WO8902313
IL87632	A	1989-01-31	IL--87632

**Abstract**

(EP0313197)

A separator for separating a relatively small volume e.g. up to 20% of a less dense liquid from a larger volume of a more dense liquid, for example for separating small volumes of crude oil from produced water from an oil-well, in the form of an elongated tube of reducing cross-sectional area. The separator has at least one tangentially-disposed inlet (5,105) for the mixture of liquids, adjacent the wide end of the separator, an outlet (10, 121) for the more dense compartment at the narrow end, and an axially disposed outlet (11,122) for the less dense component. A further outlet (6, 113) for the more dense component may be provided intermediate the two ends. The two outlets (10, 121 or 6, 113) for the more dense component are provided with pressure control means (85, 93) for controlling the pressure of the more dense component.

Inventors

LLOYD DAVID DOUGLAD

MICHALUK PETER GREGORY

Latest standardized assignees - inventors removed

SERCK BAKER

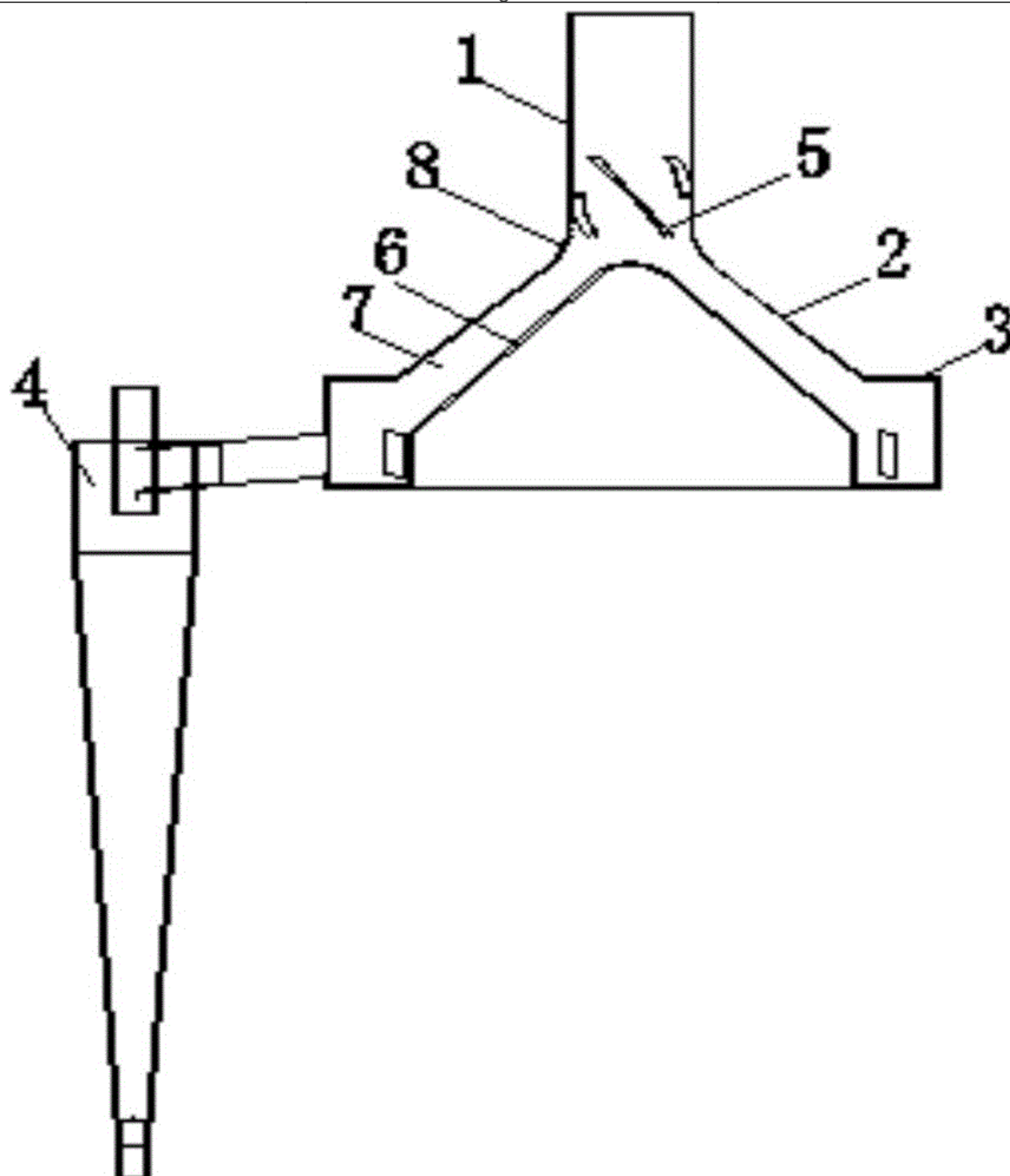
Family 9/26 - FAMPAT - ©Questel

Title

(CN106111360)

Compound cyclone separator

Images

**Publication numbers with kind code & date**[CN106111360](#)

A 2016-11-16 CN106111360

**Abstract**

(CN106111360)

The invention discloses a compound cyclone separator which comprises a straight tube. A guide vane is arranged in the straight tube which is connected with an open tube. The open tube is in a horn shape. A rectifier is arranged below the open tube, and the rectifier is in a cone shape. A V-shaped cavity is formed between the open tube and the rectifier and communicates with the straight tube. An annular tube is connected to the bottom of the cavity. A plurality of cyclone separator bodies are evenly connected to the outer circumference of the annular tube. The cyclone separator bodies are connected with the annular tube through connection tubes. The compound cyclone separator is convenient to install, simple in structure and low in machining cost; the processing capacity of the cyclone separator is greatly improved; and the pressure loss of liquid in a distributor and the cyclone separator is small, flow distribution is uniform, and the integral operating performance is remarkably improved.

Inventors

CHEN QIDONG

SUN YUEGAO

HUA ZHENGXIAO

GUAN JIANFENG

Latest standardized assignees - inventors removed

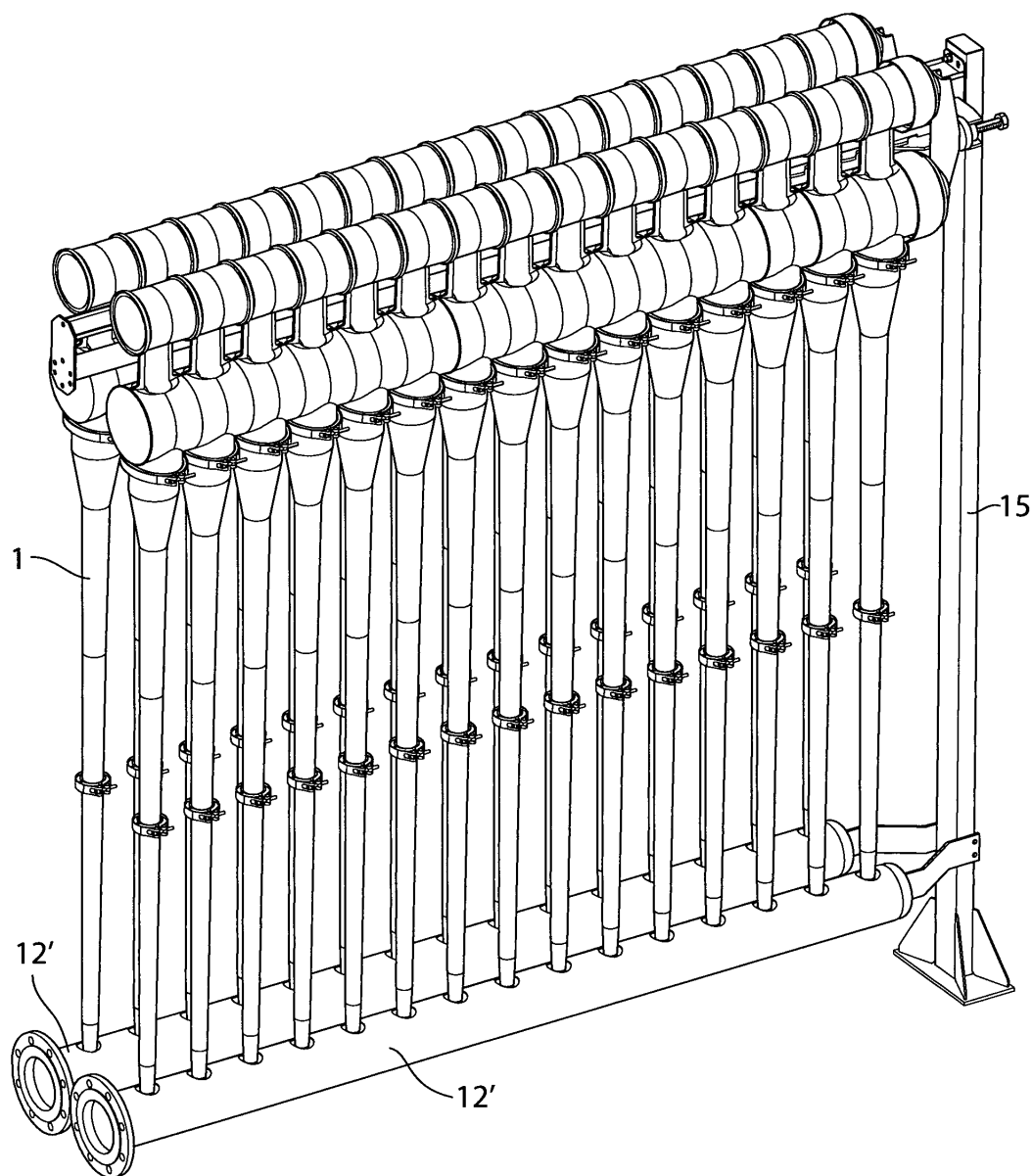
CHANGSHU INSTITUTE OF TECHNOLOGY

Family 10/26 - FAMPAT - ©Questel

Title

(EP2429715)

An assembly with multiple hydrocyclones, method for assembling multiple hydrocyclones and support structure for multiple hydrocyclones

Images**Publication numbers with kind code & date**

EP2429715	A4	2017-05-10	EP2429715
CA2761267	C	2016-08-09	CA2761267
BRPI0924831	A2	2016-01-26	BR200924831
US9242253	B2	2016-01-26	US9242253



US20150034543	A1	2015-02-05	US20150034543				
US8889014	B2	2014-11-18	US8889014				
CN102458668	B	2014-07-16	CN102458668B				
RU2508951	C2	2014-03-10	RU2508951				
RU2011147151	A	2013-06-20	RU2011147151				
IN8625/DELNP/2011	A	2013-01-11	IN2011DN08625				
BRPI0924831	A1	2012-11-13	BR200924831				
CN102458668	A	2012-05-16	CN102458668				
EP2429715	A1	2012-03-21	EP2429715				
US20120055863	A1	2012-03-08	US20120055863				
CA2761267	A1	2010-11-11	CA2761267				
WO2010/128899	A1	2010-11-11	WO2010128899				

Abstract

(EP2429715)

An assembly with hydrocyclones comprising: multiple hydrocyclones having a inlet chamber with two side openings positioned on opposite sides of the inlet chamber and a overflow chamber having two side openings positioned on opposite sides of the overflow chamber. The hydrocyclones are arranged at a support structure, comprising a support bar for support of the hydrocyclones. The hydrocyclones being arranged side by side with their side openings adjacent each other thus forming an inlet pipe by means of the inlet chambers and an overflow pipe by means of the overflow chambers. The inlet chambers and the overflow chambers being adapted to be pressed against each other respectively. The hydrocyclones being arranged in pairs with one of the two hydrocyclones arranged on one side of the support bar and the other on the opposite sides thereof. A method assembling multiple hydrocyclones, wherein hydrocyclones are hung on a support bar at a base end or a head portion and are pressed together, is provided, and a support structure for an assembly of hydrocyclones, comprising a support bar, an end bar and one or two underflow pipes.

Inventors

ERIKSSON BENGT

BACKMAN JAN

GABRIELSSON KARL

BACKVIK RAIF

Latest standardized assignees - inventors removed

OVIVO LUXEMBOURG

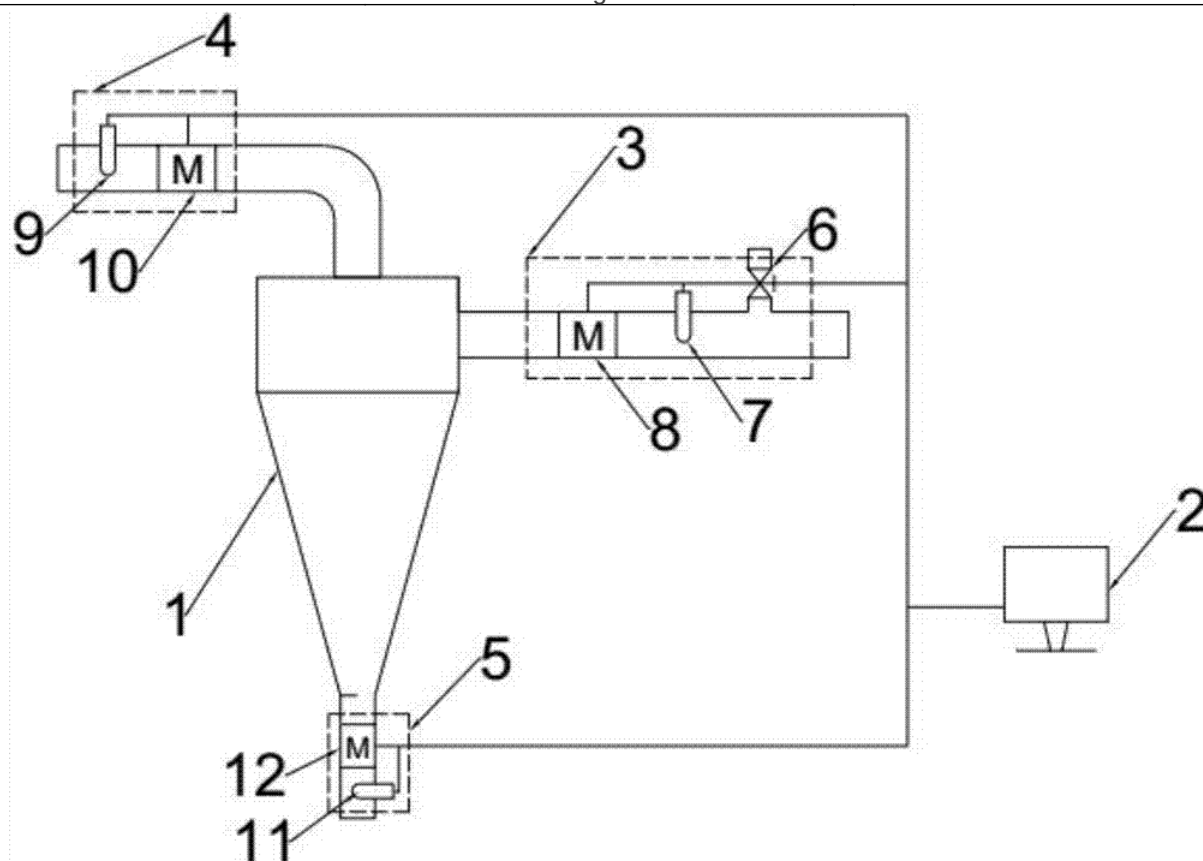
Family 11/26 - FAMPAT - ©Questel

Title

(CN108325764)

Cyclone separator short-circuit current measuring system and measuring method thereof

Images



Publication numbers with kind code & date

[CN108325764](#) A 2018-07-27 CN108325764



Abstract

(CN108325764)

The invention relates to a cyclone separator short-circuit current measuring system and a measuring method thereof. The cyclone separator short-circuit current measuring system comprises a cyclone separator, an intelligent control end, an entrance detecting and controlling module, an overflow opening detecting and controlling module and an underflow opening detecting and controlling module. The entrance detecting and controlling module comprises an electrolyte solution inlet, a conductivity determinator A, and an electromagnetic flowmeter A. The overflow opening detecting and controlling module comprises a conductivity determinator B and an electromagnetic flowmeter B. The underflow opening detecting and controlling module comprises a conductivity determinator C and an electromagnetic flowmeter C. When the cyclone separator is in work, the time and split ratio of short-circuit current in the cyclone separator can be obtained rapidly by adding an electrolyte solution to the cyclone separator from the electrolyte solution inlet. The cyclone separator short-circuit current measuring system is simple in structure, existence time of the short-circuit current in the cyclone separator can be quickly measured, and working conditions are quickly adjusted according to measuring results to reduce short-circuit current time, so that the separation efficiency of the cyclone separator is improved.

Inventors

LIN WEI

WANG JIQIANG

ZHENG XIAOTAO

XU JIANMIN

YU JIUYANG

WANG CHENGGANG

Latest standardized assignees - inventors removed

WUHAN INSTITUTE OF TECHNOLOGY

Family 12/26 - FAMPAT - ©Questel

Title

(EP1063017)

Separating device, separation unit for such a separating device, and separating method.

Images

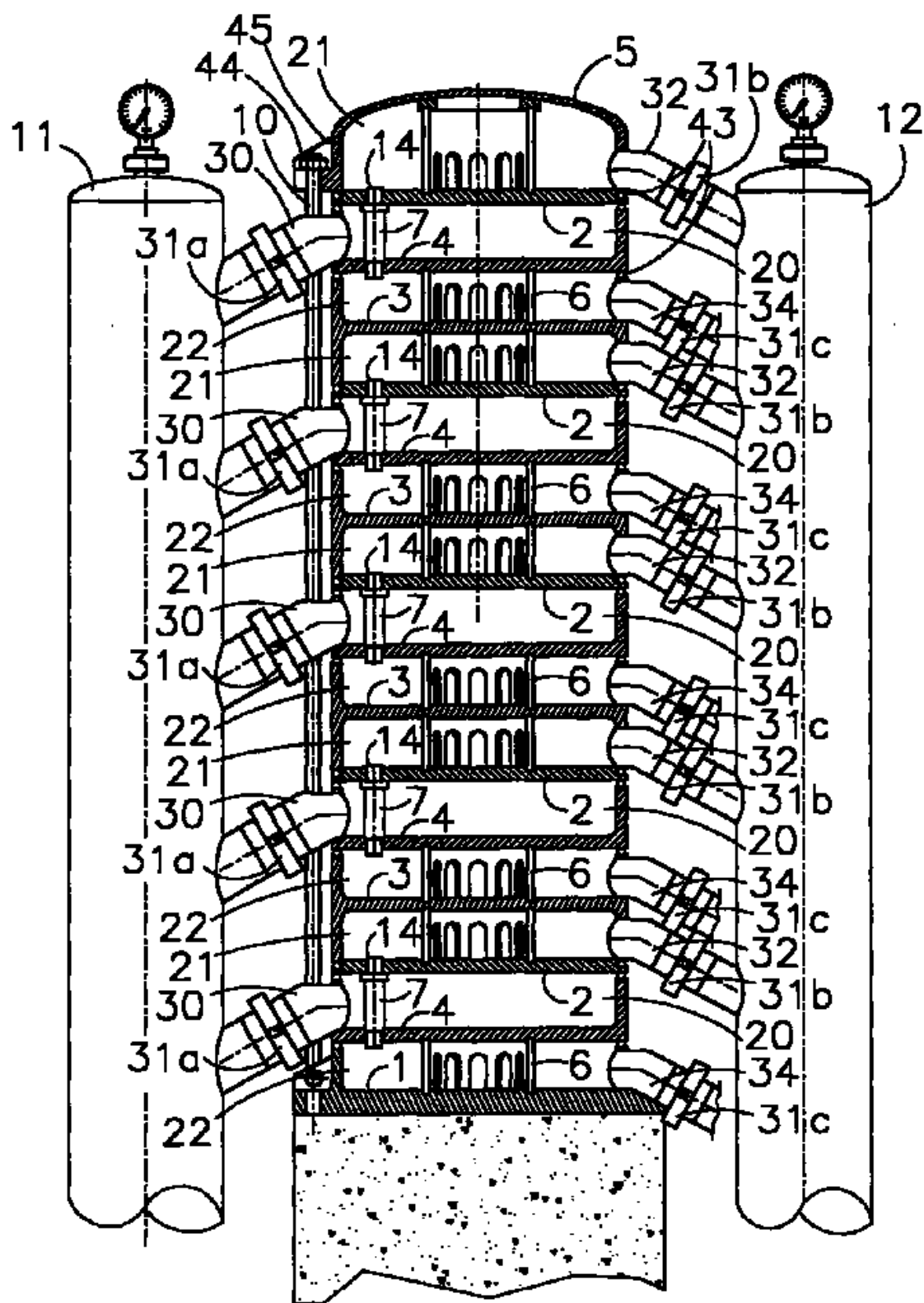


Fig 1

Publication numbers with kind code & date

EP1063017

A3 2001-04-04 EP1063017

BR0002709

A 2001-01-30 BR200002709



JP2001025685	A	2001-01-30	JP2001025685				
CN1278460	A	2001-01-03	CN1278460				
EP1063017	A2	2000-12-27	EP1063017				
NL1012401	C1	2000-12-22	NL1012401				
NL1014410	C1	2000-12-22	NL1014410				
CA2311747	A1	2000-12-21	CA2311747				
BRPI0002709	A1	2000-11-28	BR200002709				

Abstract

(EP1063017)

A device for separating particles from a fluid comprises a number of separation units. Each separation unit comprises a number of elongate cyclones (7) which are arranged parallel to and next to one another. Each cyclone is provided with a feed (14e), an overflow discharge (40) and an underflow discharge (41). Each separation unit furthermore comprises a first chamber (21), into which the overflow discharges of the cyclones open out, a second chamber (20), in which the cyclones are arranged, which second chamber contains the feeds of the cyclones, and a third chamber (22), into which the underflow discharges of the cyclones open out. The chambers are substantially cylindrical and are stacked as seen in the longitudinal direction of the cyclones. The separation units are also stacked as seen in the longitudinal direction of the cyclones. <IMAGE>

Inventors

LUEPKERS WILHELM FOCKO

TIMMER WILLEM

Latest standardized assignees - inventors removed

HOVEX

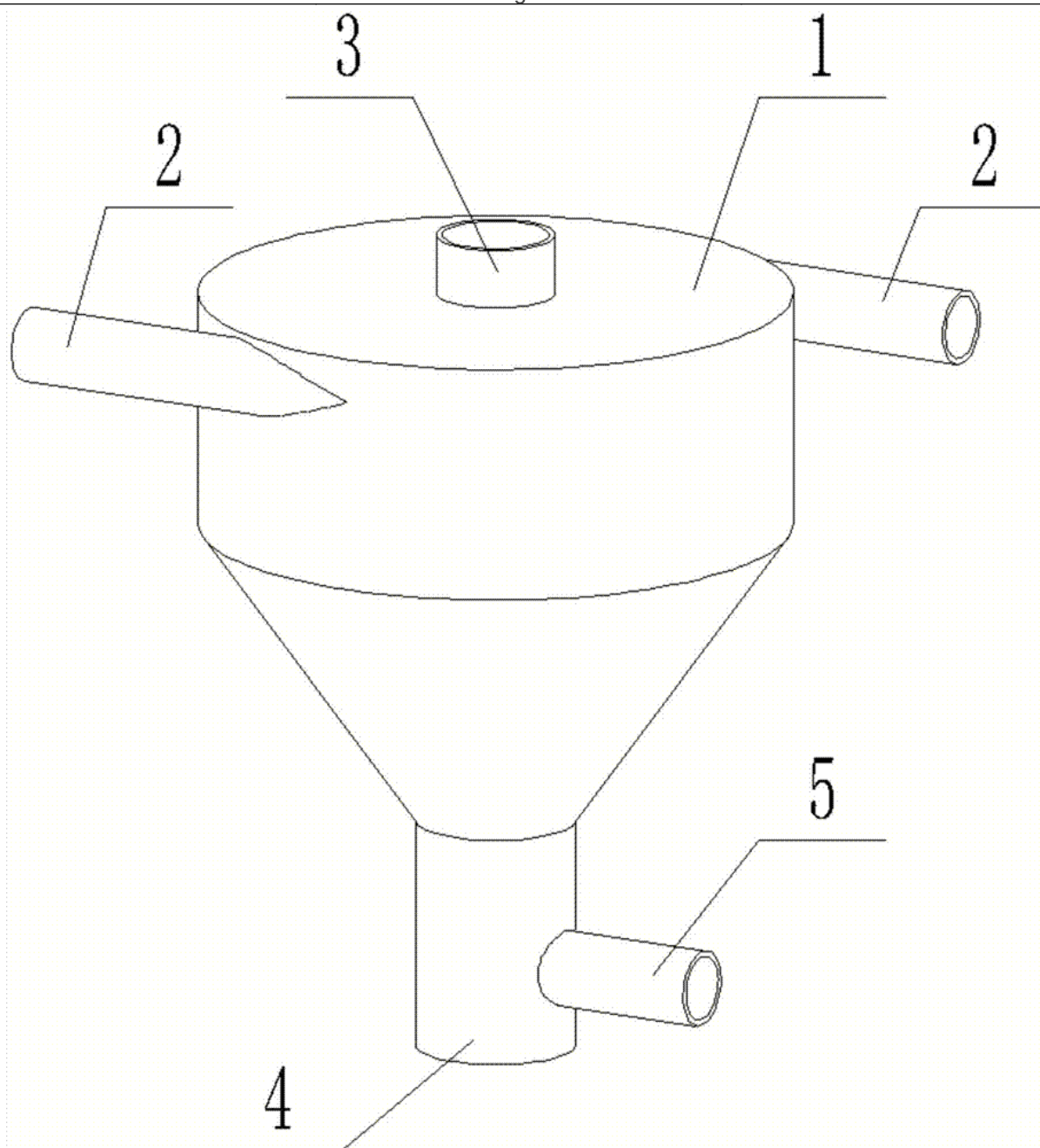
Family 13/26 - FAMPAT - ©Questel

Title

(CN109332019)

Cyclone separator for starch washing

Images

**Publication numbers with kind code & date**

CN109332019

A

2019-02-15

CN109332019

**Abstract**

(CN109332019)

The invention provides a cyclone separator for starch washing. The cyclone separator for starch washing comprises a cyclone separator cylinder, raw material inlets and a distribution plate, wherein the upper parts of the front end surface and the rear end surface of the cyclone separator cylinder are each fixedly connected with a group of raw material inlets; a group of overflow ports is fixedly connected to the top part of the cyclone separator cylinder; a group of heavy medium underflow ports is fixedly connected to the bottom part of the cyclone separator cylinder; and a group of reflux inlets is connected to the right sides of the heavy medium underflow ports. The distribution plate is arranged in the cyclone separator cylinder so as to distinguish bottom media, heavy media enter the next stage, and light media or non-obviously separated media are re-input into the raw material inlets through the reflux inlets so as to be washed, so that the purity of outlet parts of the heavy medium underflow ports is improved, a washing effect and a separating effect of a single cyclone separator are improved, the number of the cyclone separators in a washing and separating system group is reduced, the washing and separating process is simplified, and the space occupied by the equipment is reduced.

Inventors

ZHANG BINGYANG

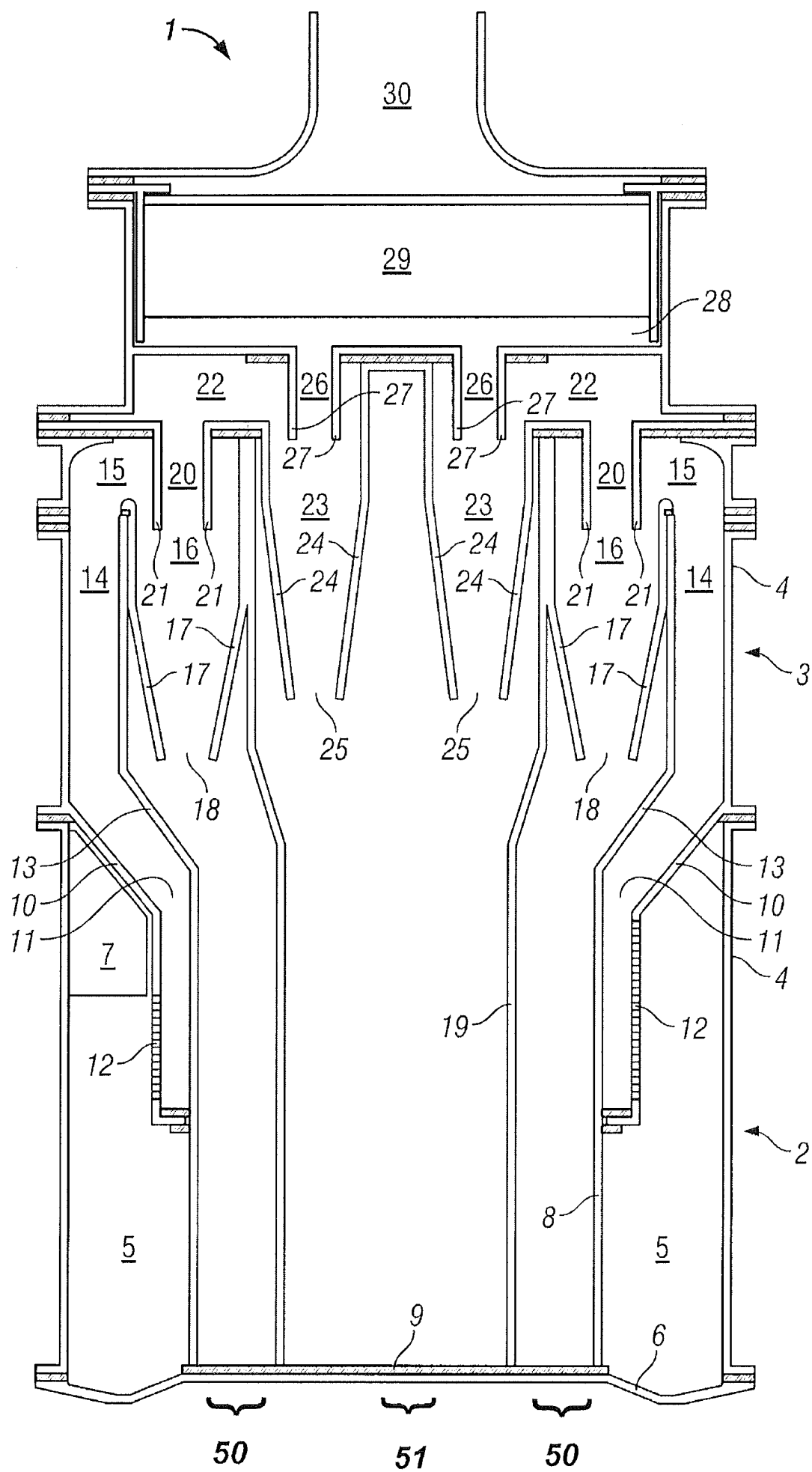
Family 14/26 - FAMPAT - ©Questel

Title

(EP2052659)

Cyclonic separation apparatus

Images



Publication numbers with kind code & date

CN101416849	B	2013-12-04	CN101416849B				
EP2052659	B1	2013-06-19	EP2052659				
AU2008230035	B2	2013-05-09	AU2008230035				
GB2453949	B	2012-03-28	GB2453949				
US7976597	B2	2011-07-12	US7976597				
EP2052659	A3	2010-08-04	EP2052659				
AU2008230035	A1	2009-05-07	AU2008230035				
CN101416849	A	2009-04-29	CN101416849				
EP2052659	A2	2009-04-29	EP2052659				
GB2453949	A	2009-04-29	GB2453949				
US20090100810	A1	2009-04-23	US20090100810				
GB0720699	D0	2007-12-05	GB200720699				

Abstract

(EP2052659)

A cyclonic separation apparatus comprises a plurality of series-connected separation stages 50,51, each comprising a plurality of cyclone separators 16/23 connected in parallel and disposed in a generally annular arrangement about a main vertical axis of the apparatus, with their respective longitudinal cyclone axes extending parallel to the main axis. The successive separation stages 50,51 in the direction of fluid flow are disposed radially inwardly of each other with respect to the main axis of the apparatus and are also vertically staggered upwardly, so that the outlet 20 of one separation stage 50 leads directly into the inlet 22 of the next downstream stage 51. The multi-stage, series connected cyclone separators of the apparatus provide a high separation efficiency, yet the annular arrangement of the stages 50,51 makes the apparatus compact and enables the apparatus to be utilised in a vacuum cleaner.

Inventors

SMITH DAVID BENJAMIN

Latest standardized assignees - inventors removed

HOOVER UNIVERSAL

Family 15/26 - FAMPAT - ©Questel

Title

(EP1938732)

Cyclonic separation apparatus

Images

material separated by the separation stages, is described. The first stage comprises a first cyclone separator and the second stage comprises a plurality of parallel connected second cyclone separators. The first and second separation stages are connected by at least one transfer duct which extends through the receptacle and transfers fluid that has been partly cleaned by the first separation stage, to the second separation stage.

Inventors

SMITH DAVID BENJAMIN

Latest standardized assignees - inventors removed

HOOVER UNIVERSAL

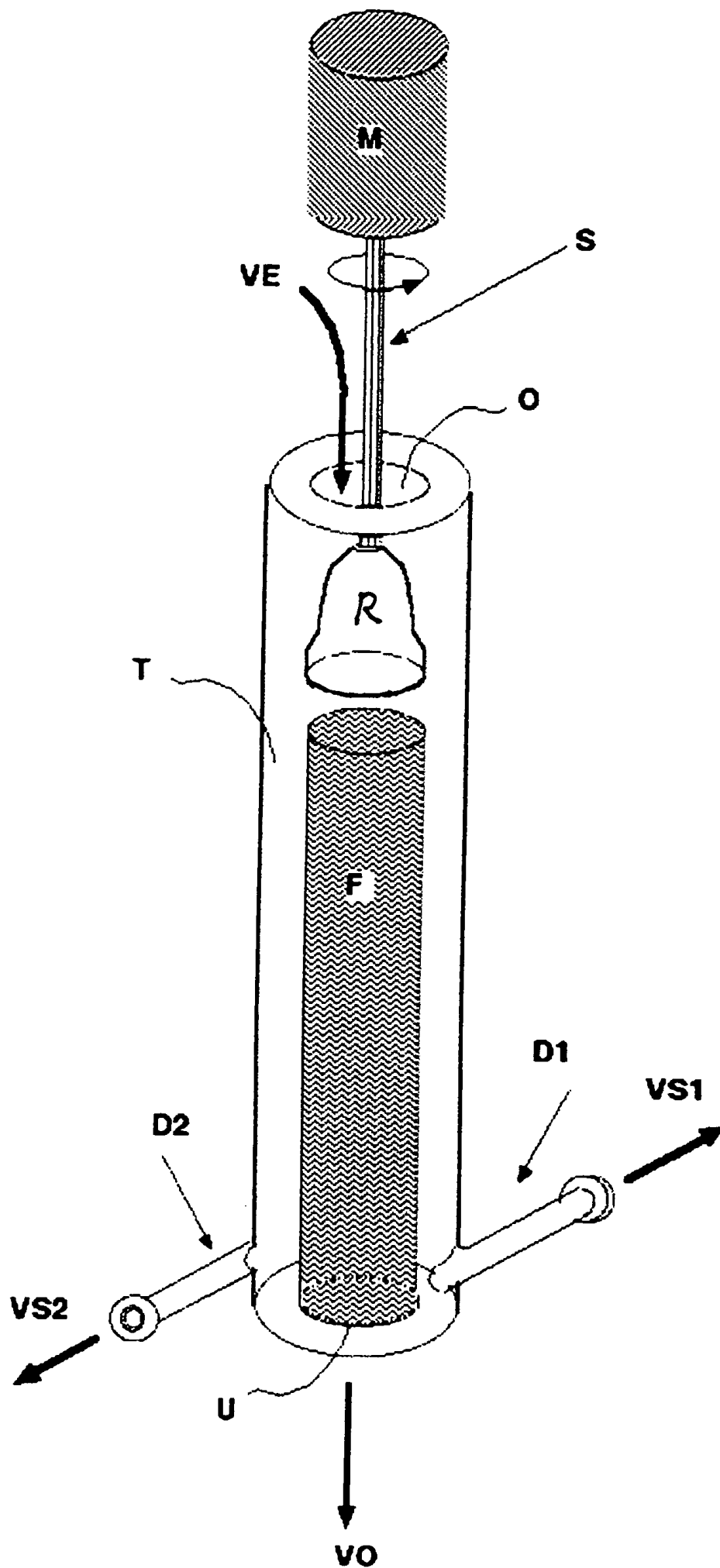
Family 16/26 - FAMPAT - ©Questel

Title

(EP2125240)

Hydro cyclone device and hydro cyclone installation

Images



Publication numbers with kind code & date

JP2010519028	A	2010-06-03	JP2010519028
US20100044287	A1	2010-02-25	US20100044287
CN101657263	A	2010-02-24	CN101657263
KR20100014863	A	2010-02-11	KR20100014863
EP2125240	A1	2009-12-02	EP2125240
WO2008/101532	A1	2008-08-28	WO2008101532
DE202007002541	U1	2007-07-05	DE202007002541

**Abstract**

(EP2125240)

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 tangential tube portion (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.

Inventors

BLUM HOLGER

Latest standardized assignees - inventors removed

BLUM HOLGER

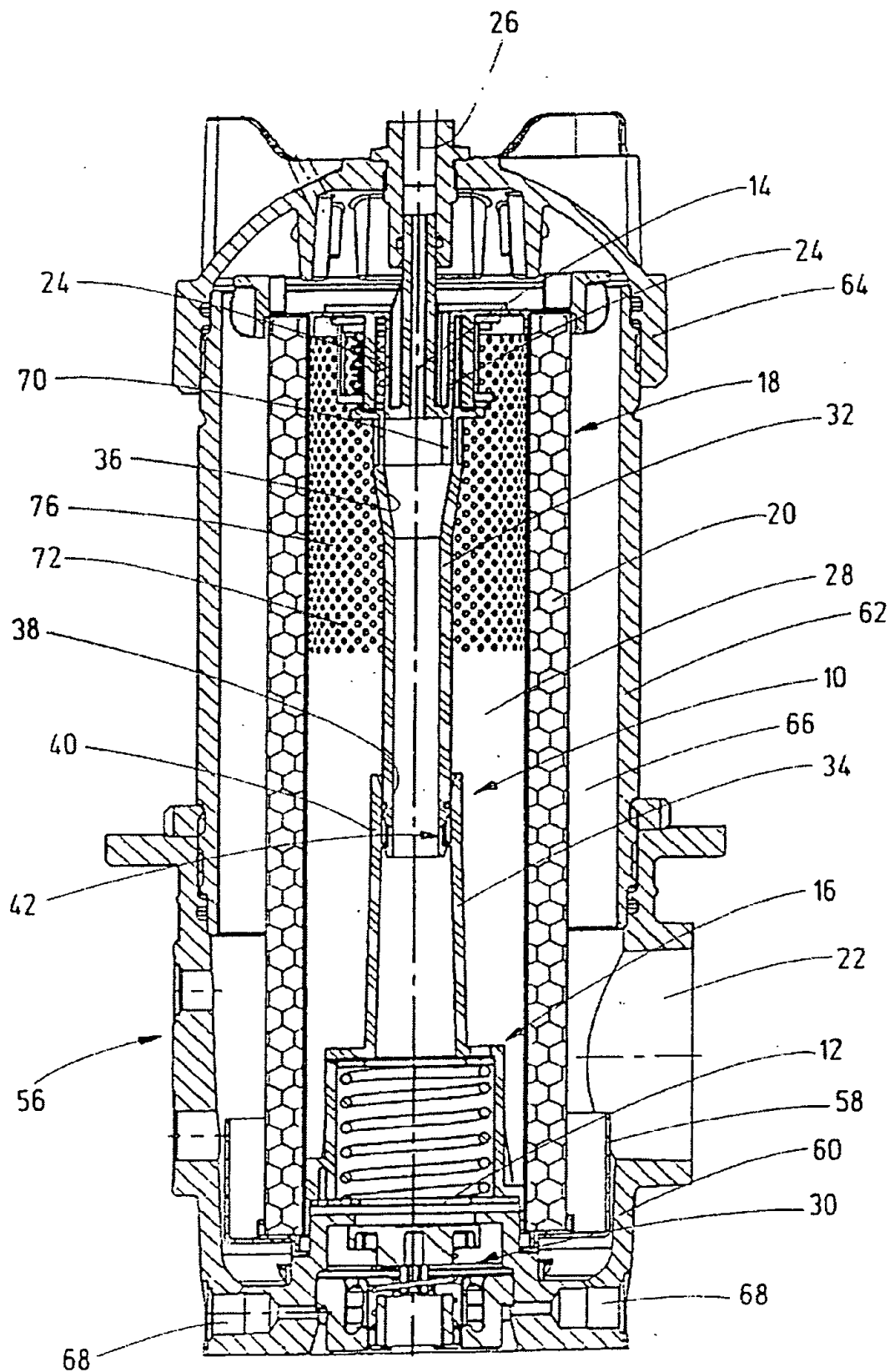
Family 17/26 - FAMPAT - ©Questel

Title

(EP2648820)

Device for separating media

Images



Publication numbers with kind code & date

JP2014502214	A	2014-01-30	JP2014502214
US20140000459	A1	2014-01-02	US20140000459
EP2648820	A1	2013-10-16	EP2648820
CN103269763	A	2013-08-28	CN103269763
WO2012/076085	A1	2012-06-14	WO201276085
DE102010053922	B3	2012-04-19	DE102010053922



Abstract

(EP2648820)

The invention relates to a device for separating media, in particular for removing gases, such as air, from a fluid, such as oil, comprising a separating apparatus (10), which causes the medium to rotate upon entering the separating apparatus for the purpose of carrying out the separation and which has one outlet point (14, 12) each for the gas and for the fluid, said outlet points being separated from each other, wherein the device for separating media is characterized in that the separating apparatus (10) has a bypass valve (16), which is arranged downstream of the fluid flow and upstream of the outlet point (12) for the fluid and through which at least part of the medium flows to the outlet point (12) for the fluid in order to bypass the region of the separating apparatus (10) designed to remove gas from the fluid, provided the medium in the vicinity of the bypass valve (16) exerts a pressure sufficient to open the bypass valve (16).

Inventors

WOZNIAK SVEN

ERBER VERONIKA

Latest standardized assignees - inventors removed

RT FILTERTECHNIK

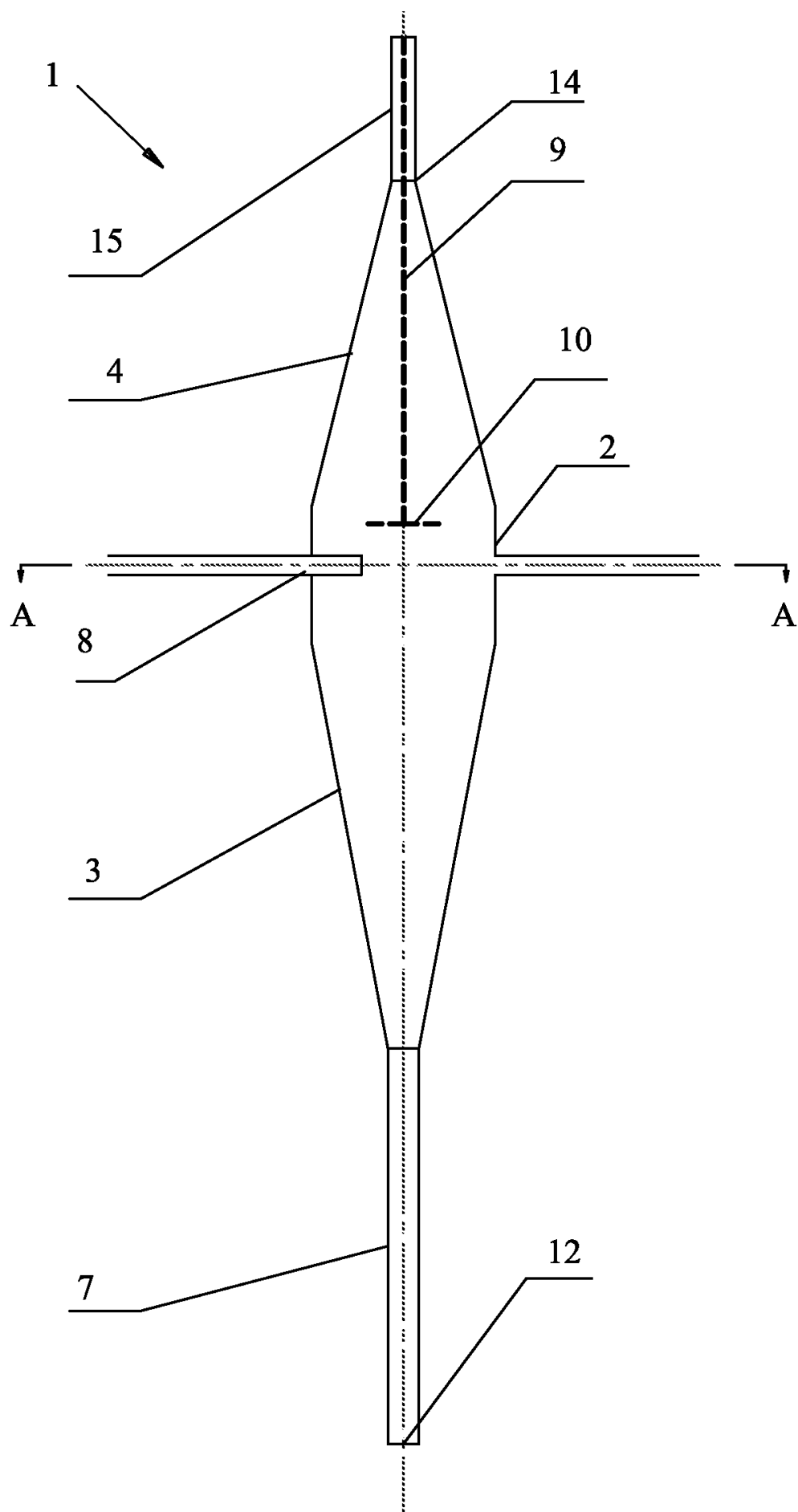
Family 18/26 - FAMPAT - ©Questel

Title

(WO2009152678)

A cyclone separator

Images



Publication numbers with kind code & date

US8333283	B2	2012-12-18	US8333283
CN101607147	B	2011-07-20	CN101607147B
US20110139710	A1	2011-06-16	US20110139710
CN101607147	A	2009-12-23	CN101607147
WO2009/152678	A1	2009-12-23	WO2009152678

**Abstract**

(WO2009/152678)

A cyclone separator (1), includes an inlet portion (2), a first cone (3) and a steady-current portion (7) in turn. Said inlet portion (2) has at least one tangential inlet (11), to which an inlet tube (8) is connected. The first cone (3) is a cylindrical cone and shrinks downwards. Said steady-current portion (7) is a slim cylindrical tube, and an outlet (12) is on its tail. Said separator also includes a second cone or shrunk portion (4) on the top of the inlet portion, and the second cone or shrunk portion is connected to the inlet portion and shrinks upwards and forms an outlet (14) on the top.

Inventors

ZHANG LING

Latest standardized assignees - inventors removed

SINO GAS & OIL TECHNOLOGY

Family 19/26 - FAMPAT - ©Questel

Title

(EP-979345)

Oil separation and pumping systems

Images

U.S. PATENT DOCUMENTS

4,913,630	4/2/99	Codreanu et al.	
5,154,588	10/2/99	Luett et al.	
5,189,977	11/9/99	Zaloznik	
5,173,072	12/1/99	Sung	
5,278,153	3/2/00	Peachey	
5,320,500	6/2/00	Calet	419,375
5,435,152	8/9/01	McIntyre	166,313
5,377,786	1/1/01	Northrup et al.	166/97
5,366,183	3/1/01	Northrup	166/95
5,425,416	6/2/01	Hammack et al.	166/105
5,456,837	10/2/01	Peachey	166/265
5,497,852	3/1/01	Stushinger et al.	
5,516,126	4/1/01	Wadleigh	

5,570,744	11/1978	Wu, garten, et. al.,	
5,579,826	12/1996	Michael	16n/268
5,603,825	2/1997	Cox, et al.	
5,730,671	3/1998	Kennedy et al.	16n/268
5,830,246	11/1998	Deachy et al.	16n/268
5,857,518	1/1999	Bowling et al.	16n/116

OTHER PUBLICATIONS

B.R. Peachey and C.M. Mathews, "Downhole Oil/Water Separator Development," Petroleum Society of CIM, Paper No. CIM 93 (since 1992).

"Dewenhale Oil-Water Separation Technology Now Proven", Centre for Engineering Research Inc., Press Release (Apr. 1, 1995).

Publication numbers with kind code & date

EP1445420	A3	2004-09-08	EP1445420
EP1445420	A2	2004-08-11	EP1445420
US6138758	A	2000-10-31	US6138758
US6082452	A	2000-07-04	US6082452
EP0979345	A2	2000-02-16	EP-979345
NO991488	A	1999-05-27	NO9901488
NO991488	L	1999-05-27	NO-991488
NO991488	D0	1999-03-26	NO9901488
WO98/13579	A3	1998-06-18	WO9813579
AU4778497	A	1998-04-17	AU9747784



[WO98/13579](#)

A2 1998-04-02 WO9813579

Abstract

(EP0979345)

The system for producing a hydrocarbon-rich stream from a well having a hydrocarbon producing zone (24) closely spaced from a disposal zone (26) therein and disposing a water-rich stream without transporting it to the surface comprises a well bore penetrating the hydrocarbon producing zone and the disposal zone in the earth; a packer (102) disposed in the well bore between the producing zone and the disposal zone; tubing (36) extending from the surface; and an assembly (86) coupled to the tubing, the assembly comprising a motor (98), a pump (92) coupled to the motor and a separator (91) in fluid communication with the pump, wherein the separator is disposed on the disposal zone side of the packer and has an inlet in fluid communication with the producing zone, a hydrocarbon-rich stream outlet (104) in fluid communication with the tubing and a water-rich stream outlet (100) in fluid communication with the disposal zone, wherein the pump is disposed to direct the flow of liquid from the producing zone into contact with the motor and through the separator.

Inventors

SHAW CHRISTOPHER K

THOMPSON PETER K

Latest standardized assignees - inventors removed

BAKER HUGHES

Family 20/26 - FAMPAT - ©Questel

Title

(EP2822694)

Centrifugal separator

Images

With a method and also a device for optimizing a centrifugal separator, in particular a recirculation cyclone in a high-temperature gasifier, the degree of separation of a centrifugal separator is to be markedly increased. This is achieved in terms of the method in that, via internals on the descender tube of the centrifugal separator, a local increase in the centrifugal force is performed.

Inventors

ABRAHAM RALF

TOPOROV DOBRIN

PAVONE DOMENICO

Latest standardized assignees - inventors removed

THYSSENKRUPP INDUSTRIAL SOLUTIONS

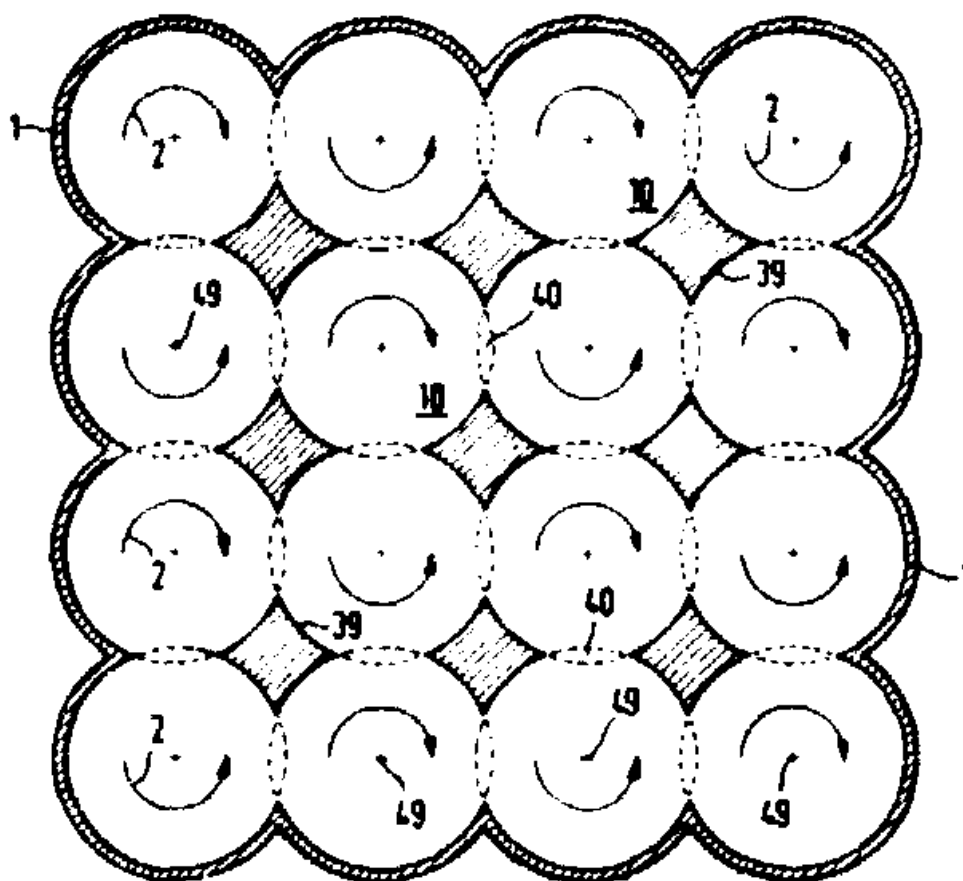
Family 21/26 - FAMPAT - ©Questel

Title

(FR2515528)

METHOD AND APPARATUS FOR SEPARATING A MEDIUM INTO COMPONENTS OF DIFFERENT MASSES OF PARTICLES

Images



Publication numbers with kind code & date

JP1606176	C	1991-05-31	JP1606176
DK157784	C	1990-08-06	DK-157784C
JPH0230301	B2	1990-07-05	JP90030301
DK157784	B	1990-02-19	DK-157784



SE453966	B	1988-03-21	SE-453966				
DE3239109	C2	1987-10-08	DE3239109				
NO155915	C	1987-06-24	NO-155915				
AU562355	B2	1987-06-11	AU-562355				
NO155915	B	1987-03-16	NO-155915				
IT1158376	B	1987-02-18	IT1158376				
CA1205422	A	1986-06-03	CA1205422				
FR2515528	B1	1986-03-28	FR2515528				
GB2108409	B	1985-12-04	GB2108409				
SU1163800	A3	1985-06-23	SU1163800				
FI67665	C	1985-05-10	FI--67665				
FI67665	B	1985-01-31	FI--67665				
HU184588	B	1984-09-28	HU-184588				
KR840001852	A	1984-06-07	KR19840001852				
FI64746	C	1984-01-10	FI--64746				
FI834837	A	1983-12-29	FI8304837				
FI834837	A0	1983-12-29	FI8304837				
DD204037	A5	1983-11-16	DD-204037				
ES516916	A0	1983-10-16	ES-516916				
ES8400034	A1	1983-10-16	ES8400034				
FI64746	B	1983-09-30	FI--64746				
BR8206269	A	1983-09-20	BR8206269				
ZA8207524	B	1983-08-31	ZA8207524				
AR229288	A1	1983-07-15	AR-229288				
PL238800	A1	1983-06-20	PL82238800				
JPS5884066	A	1983-05-20	JP58084066				
GB2108409	A	1983-05-18	GB2108409				
NL8204151	A	1983-05-16	NL8204151				
DE3239109	A1	1983-05-11	DE3239109				
FR2515528	A1	1983-05-06	FR2515528				
AU8937182	A	1983-05-05	AU8289371				
NO823570	L	1983-05-02	NO-823570				
DK449482	A	1983-04-30	DK8204494				
FI813387	L	1983-04-30	FI8103387				
SE8206029	L	1983-04-30	SE8206029				
BE894830	A	1983-02-14	BE-894830				
SE8206029	D0	1982-10-25	SE8206029				
IT8202930	D0	1982-10-21	IT8202930				

Abstract

(FR2515528)

Separation of a medium into components having different particle masses is effected by means of centrifugal force in turbulence free flow operated equipment, e.g. cyclones. The invention serves to reduce the friction resistance between a vortex and a chamber by removing part of a chamber wall or an entire chamber wall from between parallel vortices. The supporting action of a chamber wall is compensated for by having parallel, oppositely rotating vortices collide with each other at an angle of 0 to 90 DEG . Separators can be built up into large systems in which parallel vortices are disposed e.g. in circular configuration or in a regular square net. Having the vortices collide with each other further acts to develop a separating power intensifying radial oscillating motion in vortices.

(From GB2108409 A)

Inventors

RYYNANEN SEPPO ILMARI

Latest standardized assignees - inventors removed

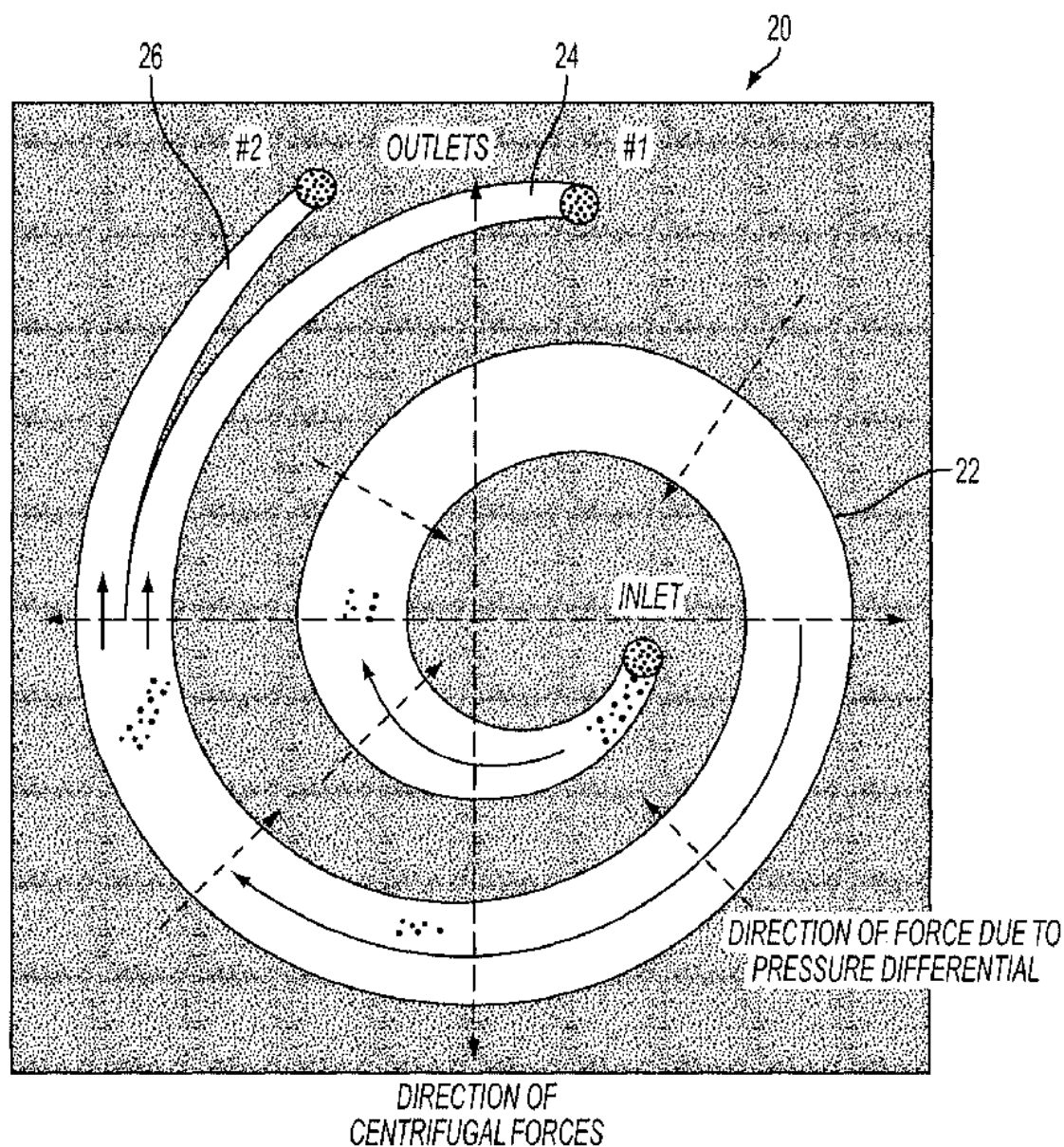
NOBAR

Family 22/26 - FAMPAT - ©Questel

Title

(EP2127752)

Fluidic structures for membraneless particle separation

Images**FIG. 1****Publication numbers with kind code & date**

SG10201609513Y	A	2017-01-27	SG10201609513Y
JP5846715	B2	2015-12-04	JP5846715
TWI505863	B	2015-11-01	TWI505863
CN101607152	B	2015-04-15	CN101607152B
IL198682	B	2015-02-26	IL-198682
EP2626135	A1	2013-08-14	EP2626135



IN1019/CHE/2009	A	2010-06-04	IN2009CH01019				
EP2127752	A3	2010-04-28	EP2127752				
IL198682	A	2010-02-17	IL-198682				
TW201006552	A	2010-02-16	TW201006552				
SG157287	A1	2009-12-29	SG-157287				
CN101607152	A	2009-12-23	CN101607152				
EP2127752	A2	2009-12-02	EP2127752				
JP2009274066	A	2009-11-26	JP2009274066				

Abstract

(EP2127752)

Fluidic structures for facilitating particle separation in curved or spiral devices are provided. The contemplated systems relate to various fluidic structures, implementations and selected fabrication techniques to realize construction of fluidic separation structures that are of a stacked and/or parallel configuration. These contemplated systems provide for efficient input of fluid to be processed, improved throughput, and, in some variations, adjustable and efficient treatment of output fluid.

Inventors

LEAN MENG H

SEO JEONGGI

KOLE ASHUTOSH

VOLKEL ARMIN R

Latest standardized assignees - inventors removed

PALO ALTO RESEARCH CENTER

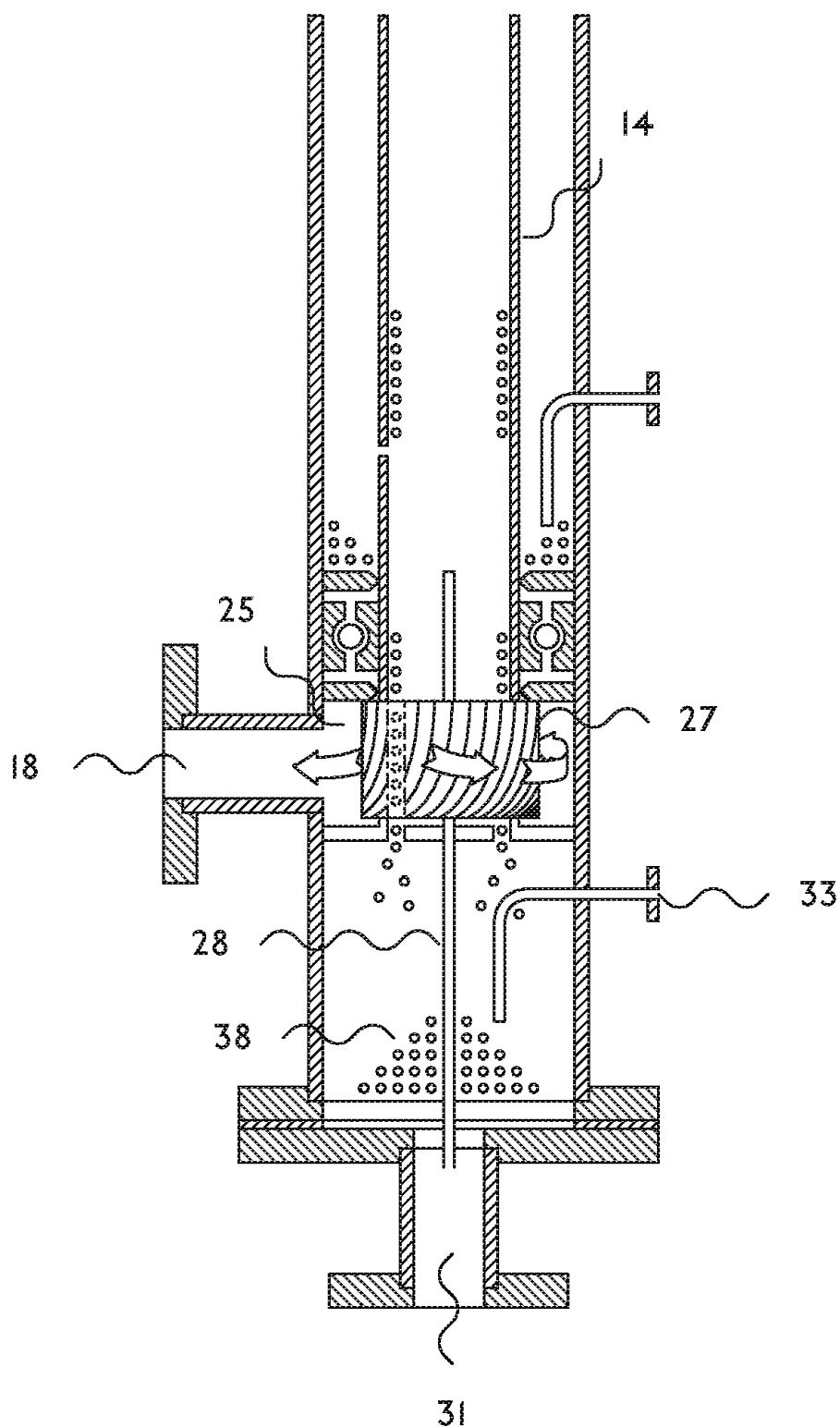
Family 23/26 - FAMPAT - ©Questel

Title

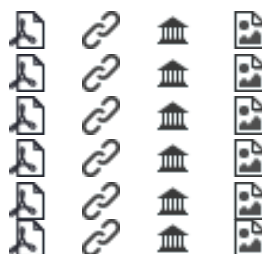
(EP3436659)

Separation device for separating a fluid

Images


Publication numbers with kind code & date

EA201892196	A1	2019-04-30	EA201892196
US20190118192	A1	2019-04-25	US20190118192
EP3436659	A1	2019-02-06	EP3436659
BR112018069719	A2	2019-02-05	BR112018069719
CN109219686	A	2019-01-15	CN109219686



KR20180125585	A	2018-11-23	KR20180125585				
AU2017243314	A1	2018-11-15	AU2017243314				
SG11201807839T	A	2018-10-30	SG11201807839T				
BR112018069719	A1	2018-10-16	BR112018069719				
WO2017/168175	A4	2017-12-14	WO2017168175				
CA3019416	A1	2017-10-05	CA3019416				
WO2017/168175	A1	2017-10-05	WO2017168175				

Abstract

(EP3436659)

According to the present invention there is provided a separation device for separating a fluid, said fluid comprising multiple components, into at least two components comprising: a support structure; at least one conduit mounted on or within said support structure for rotation about an axis; at least one inlet for introducing a flow of said fluid into said at least one conduit; and at least one outlet for outputting at least one of said components therefrom; wherein the said at least one conduit is configured such that, in use, when said flow of said fluid is applied thereto, said conduit is thereby caused to rotate on or within said support structure about said axis, thereby separating said fluid into at least two components.

Inventors

MOSELEY JONATHAN CHARLES

Latest standardized assignees - inventors removed

BIG SWING

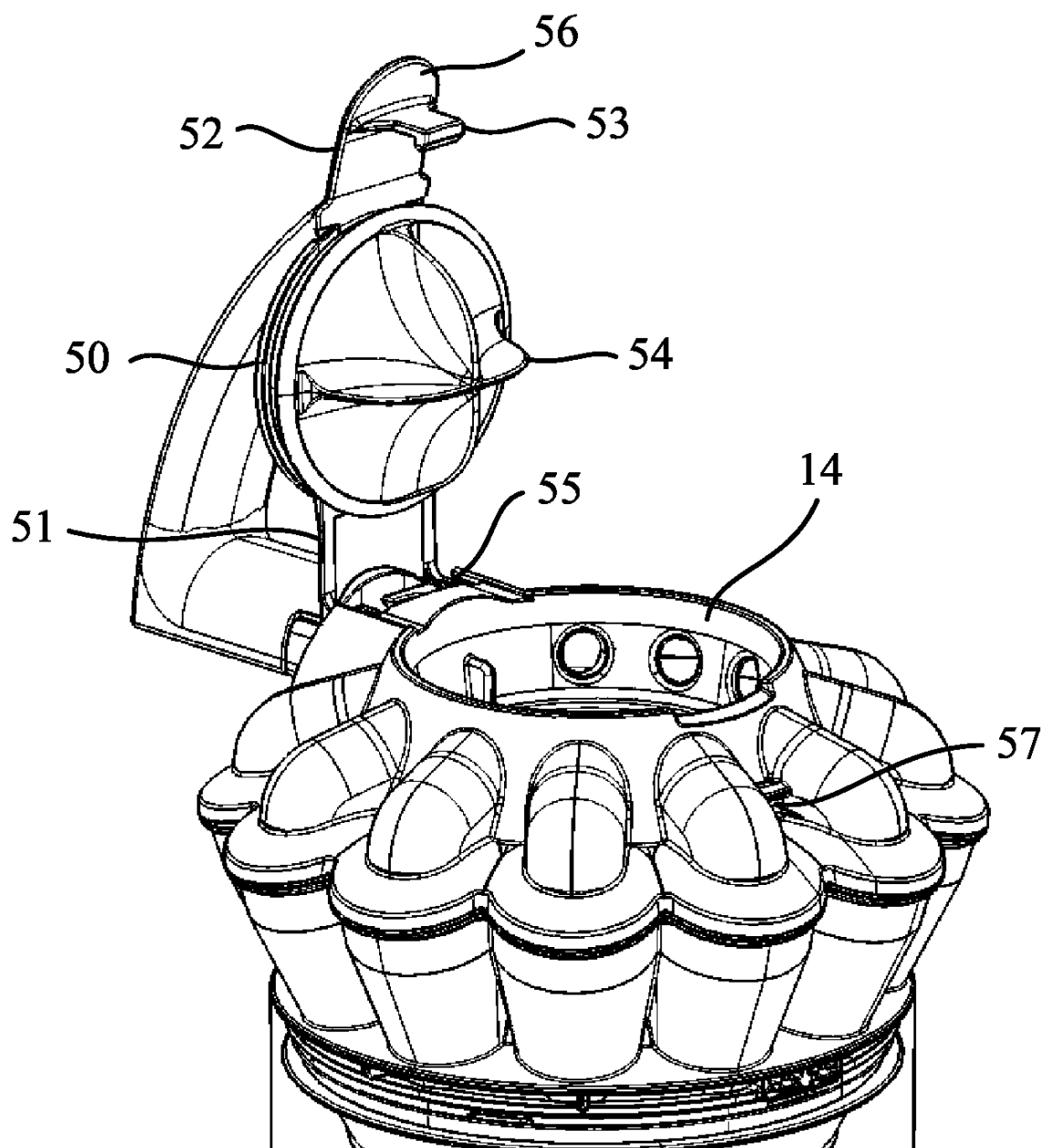
Family 24/26 - FAMPAT - ©Questel

Title

(EP2950692)

Dirt separator for a vacuum cleaner

Images



Publication numbers with kind code & date

KR101805565	B1	2017-12-07	KR101805565
EP2950692	B1	2017-05-10	EP2950692
CN103961029	B	2017-04-12	CN103961029B
JP5892560	B2	2016-03-04	JP5892560
AU2014211002	B2	2016-01-28	AU2014211002
EP2950692	A1	2015-12-09	EP2950692
KR20150112026	A	2015-10-06	KR20150112026
AU2014211002	A1	2015-08-13	AU2014211002
GB2510359	B	2015-04-08	GB2510359
US8935828	B2	2015-01-20	US8935828
JP2014147779	A	2014-08-21	JP2014147779
WO2014/118502	A1	2014-08-07	WO2014118502
CN103961029	A	2014-08-06	CN103961029
GB2510359	A	2014-08-06	GB2510359
US20140208539	A1	2014-07-31	US20140208539



[GB201301711](#)

D0 2013-03-20 GB201301711

Abstract

(EP2950692)

A dirt separator (3) for a vacuum cleaner (1) that comprises an inlet (6) through which fluid enters the dirt separator (3), and an outlet (7) through which fluid exits the dirt separator (3). The dirt separator (3) further comprises a filter assembly (13) located downstream of the inlet (6) and upstream of the outlet (7), an opening (14) through which the filter assembly (13) may be removed from the dirt separator (3), and a hatch (15) moveable between an open position in which the opening (14) is uncovered and a closed position in which the opening (14) is partially covered. When the filter assembly (13) is removed from the dirt separator (3) and the hatch (15) is in the closed position, a bleed (60) is created around at least part of the hatch (15) through which fluid enters the dirt separator (3) in preference to the inlet (6). When the filter assembly (13) is located in the dirt separator (3) and the hatch (15) is in the closed position, the filter assembly (13) seals against the hatch (15) to close the bleed (60).

Inventors

ASHBEE GILES

ROBERTSON JAMES

LUETCHFORD PETER

Latest standardized assignees - inventors removed

DYSON TECHNOLOGY

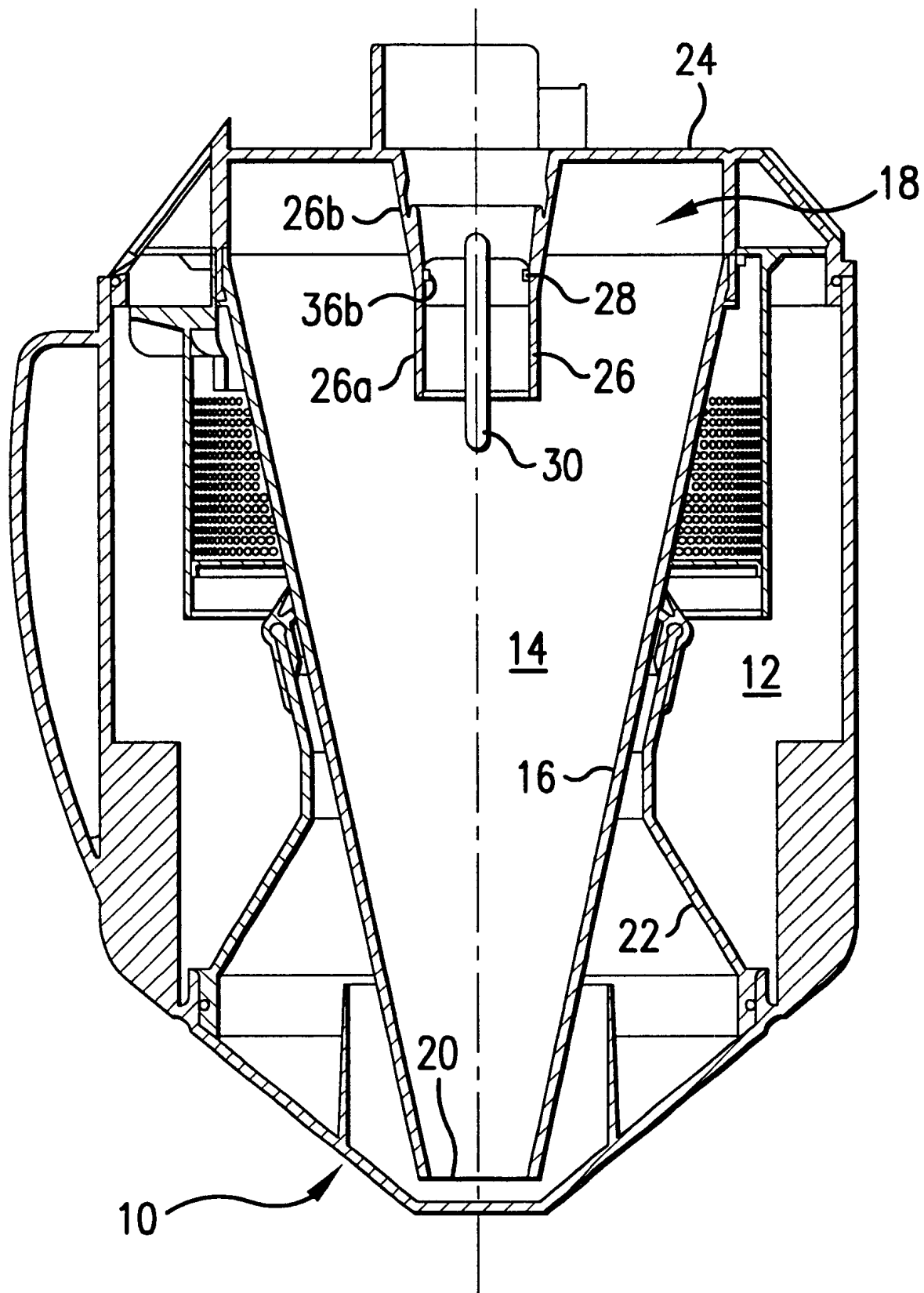
Family 25/26 - FAMPAT - ©Questel

Title

(EP1066115)

Cyclonic separation apparatus

Images


Publication numbers with kind code & date

JP4520038	B2	2010-05-28	JP4520038
DE69918539	T2	2005-09-01	DE69918539
IN0419/MUMNP/2000	A	2005-07-15	IN2000MN00419
ES2223168	T3	2005-02-16	ES2223168
DE69918539	D1	2004-08-12	DE69918539
AT270586	T	2004-07-15	ATE270586
EP1066115	B1	2004-07-07	EP1066115



CN1108196	C	2003-05-14	CN1108196C				
AU755967	B2	2003-01-02	AU-755967				
US6425931	B1	2002-07-30	US6425931				
JP2002509792	A	2002-04-02	JP2002509792				
PL343434	A1	2001-08-13	PL99343434				
CN1301195	A	2001-06-27	CN1301195				
KR20010034704	A	2001-04-25	KR20010034704				
EP1066115	A2	2001-01-10	EP1066115				
ID26075	A	2000-11-23	ID--26075				
WO99/49978	A3	1999-12-02	WO9949978				
AU3043299	A	1999-10-18	AU9930432				
CA2325953	A1	1999-10-07	CA2325953				
WO99/49978	A2	1999-10-07	WO9949978				
GB9806683	D0	1998-05-27	GB9806683				

Abstract

(EP1066115)

The invention provides cyclonic separation apparatus (10) comprising a cyclone body (14) having at least one fluid inlet (18) and a fluid outlet, the fluid outlet being concentric with the longitudinal axis of the cyclone body (14) and comprising a vortex finder (26) projecting from an end surface (24) of the cyclone body (14) into the interior thereof, and a proboscis (30) located partially within the vortex finder (26) and projecting beyond the distal edge thereof so that the distance between the end surface (24) of the cyclone body (14) and the furthestmost end of the proboscis (30) is at least twice the smallest diameter of the vortex finder (26), wherein the cross-sectional area of the proboscis (30) is circular at any point along its length.

Inventors

CROGGON JAMES HUGH

Latest standardized assignees - inventors removed

DYSON TECHNOLOGY

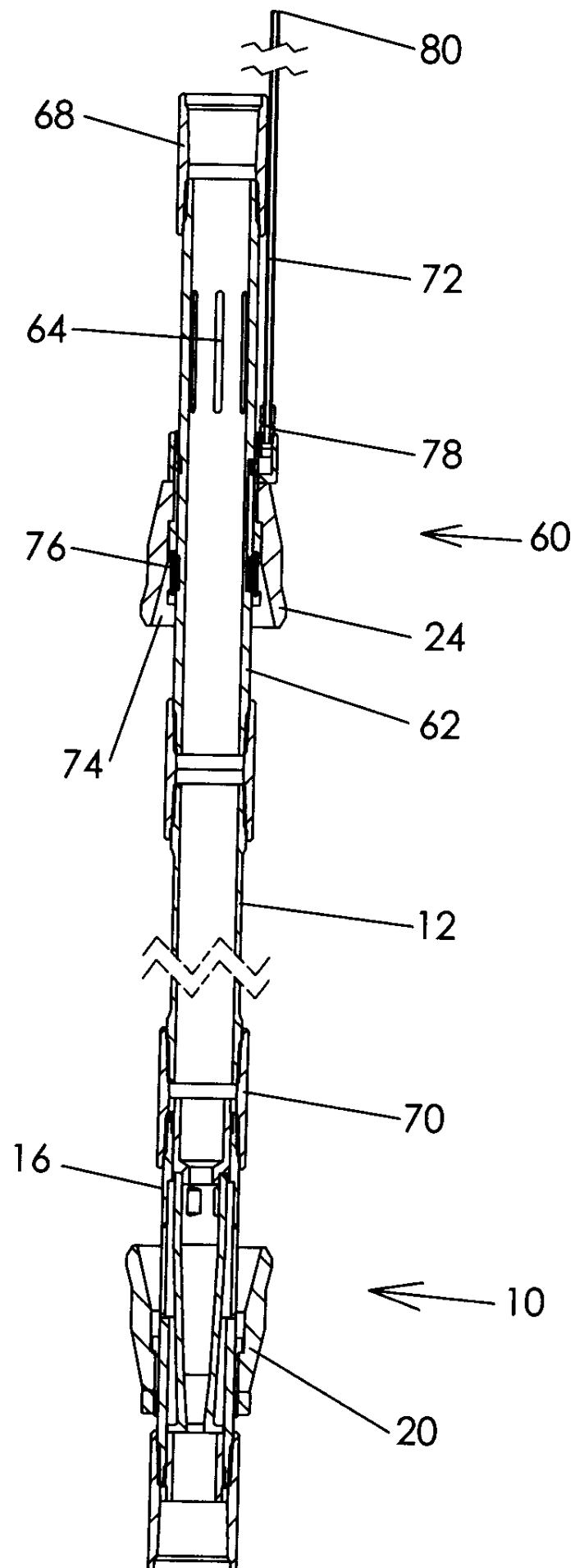
Family 26/26 - FAMPAT - ©Questel

Title

(US7909092)

Downhole separator

Images



Publication numbers with kind code & date

US8051907	B2	2011-11-08	US8051907				
US20110162833	A1	2011-07-07	US20110162833				
US7909092	B2	2011-03-22	US7909092				
US20100175869	A1	2010-07-15	US20100175869				

Abstract

(US20100175869)

The desander (10) for positioning downhole includes a generally tubular desander body (16) and a generally sleeve-shaped vortex body (39, 94). The desander with a seal or packer may be positioned in a well below the casing perforations. The desander with an ESP may be used with gas separator (60), which may include a seal (24) for positioning above the producing formation. The separator (60) may be used independent of the desander for some applications.

Inventors

COBB DELWIN E

Latest standardized assignees - inventors removed

SEPACO