



New connection on: : 11-08-2017 : 21:14:52 - Last disconnection on: : 11-08-2017 : 20:31:46

V 4.0.0.43847(LP,U,linux) (Rev:41675 2016-01-15 13:33:59 +0100#(D201706)) (RPM D201706)

Welcome to EPOQUE Rebuild under the Production Environment

[EPODOC: SS 58] ..fi epodoc

 Database: EPODOC

[EPODOC: SS 58] filter and water and microorganism+

Results in EPODOC 3.086

[SS 59] 58 and particles

Results in EPODOC 242

[SS 60] ..v

[EPODOC: SS 60] ..li 100-110



100/242 © EPODOC / EPO
PN - [CN201665595U](#) U 20101208
PR - CN20102165159U 20100421
AP - CN20102165159U 20100421
DT - I
PA - HUNAN TONGYI WATER TREAT
TECHNOLOGY CO LTD
TI - Pretreatment complete set of
equipment used for
nanofiltration **water** preparation
AB - The utility model discloses a
pretreatment complete set of
equipment used for
nanofiltration **water**
preparation comprising a
raw **water** tank, a booster pump,
a multimediu**m filter**, an



activated carbon **filter**, a first adding-medicine device and a second adding-medicine device. The utility model is characterized in that the raw **water** tank is connected with the multimediu**m filter** through the booster pump pipe; the multimediu**m filter** pipe is connected with the activated carbon **filter**, and external connection pipes are disposed on the multimediu**m filter** and the activated carbon **filter**. By using the utility model, the normal function of the nanofiltration membrane can be guaranteed by reducing hardness, turbidity, **microorganism** and chloride content. The multimediu**m filter** with stuffing such as quartz sand, anthracite coal and ICI-DF can remove the foreign **particles** and suspended substance, reduce the turbidity and the load for the later treatment. In the utility model, on the inlet and outlet pipe are disposed a pressure gauge and a full-automatic multipath control valve, which can realize the unmanned operation of the equipment.

101/242 © EPODOC / EPO

PN - [CN201664538U](#) U 20101208

PR - CN20102156849U 20100409

AP - CN20102156849U 20100409

DT - I

PA - WATER SERVICE HOLDING INC SHANGHAI

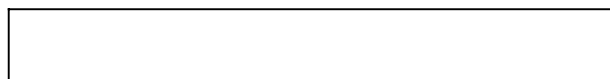
TI - Microfiltration film forming **filter** tank

AB - The utility model discloses a microfiltration film forming **filter** tank including a tank body which is provided with a **water** inlet and a **water** outlet. The **filter** tank is characterized in that the **water** inlet and the **water** outlet are arranged in the same side of the tank body, a group of flat filter elements are vertically arranged in the tank body, filtrate orifices of the flat **filter** elements are connected to the **water** outlet via a main

after-filtration collecting bin, and the bottom of the tank body is provided with a evacuating hole. The utility model is a normal pressure **filter** tank filtering through a surface cover. Each **filter** frame is made from inorganic material and is sleeved with a filtering cloth to form into a **filter** element, diatomaceous earth, powder activated carbon or resin powder etc. are uniformly laid on the surface of each **filter** element in a manner of hydraulics, then a dynamic **filter** film is formed as filtering medium, thereby intercepting the suspension **particles** in **water** and other **microorganism** or bacteria etc. to realize aims of precise microfiltration, removing impurity in **water**, reducing **water** turbidity and reducing bacteria, ammonia nitrogen or organic compounds. The **filter** tank has advantages of simple structure, low cost and high filtration accuracy.

102/242 © EPODOC / EPO

PN - [CN201625503U](#) U 20101110
 PR - CN20102117051U 20100223
 AP - CN20102117051U 20100223
 DT - I
 PA - HUBEI BOTH URBAN RURAL
 ENVIRONMENT ENERGY
 ENGINEERING CO LTD
 TI - High-concentration stench
 biological treatment device
 AB - The utility model provides a high-
 concentration stench biological
 treatment device, which
 comprises a smoke exhaust
 tower, a **water** scrubber, a
 biological deodorization **filter**
 chamber system and an
 activated carbon absorbing
 device, wherein the **water**
 scrubber, the biological
 deodorization **filter** chamber
 system and the activated carbon
 absorbing device are
 sequentially connected in series,
 and the biological
 deodorization **filter** chamber
 system is provided with
 deodorization thallus and
 inorganic **filter** materials. The
 front-end **water** scrubber can
 reduce temperature of waste gas
 and concentration of
 dust **particles** and smoke inside
 the waste gas so as to provide a
 fine treatment environment
 for **microorganisms** in the



biological deodorization **filter** chamber system, then most of organic matters can be treated through the biological deodorization **filter** chamber system, and finally, by aid of the activated carbon absorbing device, the waste gas can be completely purified and treated, all inorganic **particles** which can not be biodegradable can be absorbed, waste gas treatment efficiency and treatment effect are increased greatly, and the total waste gas treatment device is more stable and reliable.

103/242 © EPODOC / EPO

PN - [KR100982358B](#) B1 20100914

PR - KR20090119895 20091204

AP - KR20090119895 20091204

DT - I

CT - || STSE (B1)
[KR20010069802](#) A 20010725 [] (CHO HYO SEAK [KR]);
[JP2005342700](#) A 20051215 [] (ANZAI SETSU);
[KR100876615B](#) B1 20081231 [] (WOORAM ENG CO LTD [KR]);
[JPH10486](#) A 19980106 [] (ASAHI ORGANIC CHEM IND)

CNOI - [C02F1/78](#) ; [C02F3/12](#) ;
[C02F11/02](#)

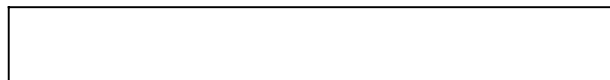
CCA - [Y02W10/15](#) ; [Y02W10/27](#)

CNOA - [Y02W10/20](#) ; [Y02W10/15](#) ;
[Y02W10/27](#)

PA - PARK JIN CHAE [KR]

TI - CLARIFIER OF WASTEWATER AND METHOD OF CLARIFICATION THEREOF

AB - PURPOSE: A system and a method for quickly purifying wastewater is provided to reduce processing time and processing costs and to enable a user to use the purified **water** as cleaning **water**



or liquefied fertilizer having a low concentration.

CONSTITUTION: A system for quickly purifying wastewater comprises: a main **water** tank (10) storing process **water** having a few solid; a particle solid-liquid separator for separating minute solid **particles** from the process **water** by circulating the process **water** of the main **water** tank; a blower (20) for injecting ozone to the main **water** tank; a **filter** unit (30) which deodorizes bad smell of gas; a bioreactor for multiplying **microorganisms** by circulating sterilized process **water**; and an aeration tank which stores and ferments the process **water** including the multiplied **microorganisms**. The **filter** unit is filled with activated carbon.

PN - [EP2319808](#) A2 20110511

PNFP - [EP2319808](#) A3 20140409
- [EP2319808](#) B1 20150408
- [EP2319808](#) B8 20151209

PR - [DE20091044208](#) 20091008

AP - [EP20100401165](#) 20100916

DT - *; Rep

CT - || STSE (A3)
[DE102005051711](#) A1 20070510
[AD] (HALDENWANG LUTZ [DE])
[AD] 1-20
* paragraphs [0032] - [0037]; figure 1; claims 1,5 *;
[DE102004009559](#) A1 20050915
[AD] (PASSAVANT ROEDIGER UMWELTTECH [DE])
[AD] 1-20
* claims 1,9,11,13 *;
[US2006108282](#) A1 20060525
[A] (AMES ROY V [AU], et al)
[A] 1-20
* paragraphs [0100] , [0111]; figure 1 *;
[DE4403716](#) C1 19950316
[A] (HAHNEWALD GMBH CHEMISCH PHYSIK [DE])
[A] 1-20
* figures 1,2; claims 1,8,9 *;
[US5910249](#) A 19990608 [A] (KOPP CLINTON [AU], et al)
[A] 1-20
* claims 1,13 *

CCI - [C02F3/04](#) ; [C02F3/06](#) ; [C02F3/1268](#)

CCA - [C02F1/001](#) ; [Y02W10/15](#)

PA - (A2 A3 B1 B8)
DAS ENVIRONMENTAL EXPERT GMBH [DE]

TI - (A2 A3)
Method for treatment of **water**
- (B1 B8)
Method and reactor for treatment of **water**

AB - (A2)
Treating **water**, comprises distributing the **water** to be treated in a reaction chamber and trickling

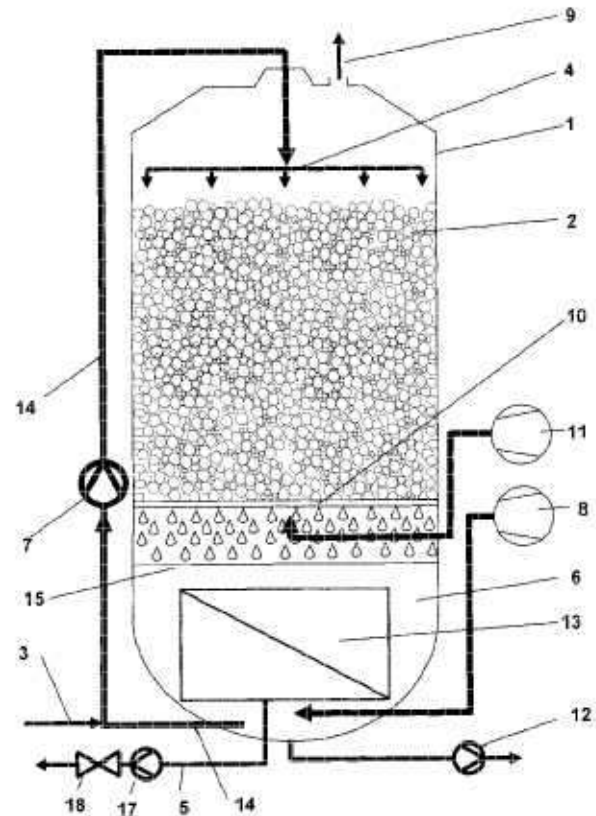


Fig. 1

through a non-submerged filler from top to bottom, passing a support material filler (2) in a opposite direction to the trickling **water**, supplying at least a partial flow of trickled **water** through the support material filler, passing through a fine-pore **filter**, carrying out regeneration at intervals, in which the support material filler flows and mixes in the opposite direction to the trickling **water** flow, and interrupting strong air- and **water** flow, collecting the regenerate and removing it. Treating **water**, comprises distributing the **water** to be treated in the upper part of an upwardly open, almost unpressurized reaction chamber and trickling through a non-submerged filler made of a small grain growth support material for **microorganism**, which has a density of less than 0.1 g/cm³ and a particle size less than 15 mm, from top to bottom, simultaneously passing a support material filler (2) in the opposite direction to the downward trickling **water** with an artificially generated air flow from bottom to top, supplying at least a partial flow of trickled **water** through the support material filler and passing through a fine-pore **filter**, carrying out regeneration at certain intervals, in which the support material filler flows and mixes in the opposite direction to the trickling **water** stream with the artificially generated strong air flow from bottom to top in such a manner that a part of the biomass adhering at the individual carrier **particles** and the fine solid materials optionally filtered from the **water** is wiped-off, and subsequently interrupting strong air flow and **water** flow and then collecting the effluent regenerate made of **water** and

abraded biomass from the support material filler and removing from the system. The filtration is suspended through the fine pore **filter** during the regeneration. An independent claim is also included for a reactor for carrying out the process comprising the filler made of fine-grained support material having a density of less than 0.1 g/cm³ and a particle size less than 15 mm, under which a collecting container (6) is arranged with a feeder (8) for an artificially generated air flow and a feeder for a strong air flow, both ending below the filler, an outlet for air at the upper end, a feeder (3) for raw **water**, and a circulation line with a pump (7). The circuit line led from the collecting device to a **water** distribution device, which distributes the **water** over the filler, with an outlet for purified **water** and an outlet for regenerate. A fine-pore **filter** is immersed in the collecting device, from which the purified **water** is removed through the outlet or a cross-flow **filter** with the outlet for purified **water** is arranged in the circulation line after the pump.

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PN	- MX2010001435 A 20100520	
PR	- WO2007ES00483 20070808	
AP	- MX20100001435 20070808	
DT	- I	
CCI	- C02F1/78 ; E03B1/04 ; E03B1/042	
CCA	- C02F1/001 ; C02F2103/002 ; E03B2001/045 ; Y10T137/7316	
PA	- JAVIER DOLO MASNOU FRANCISCO [ES]	
TI	- WATER ECONOMIZER SYSTEM FOR DOMESTIC INSTALLATIONS AND THE LIKE.	
AB	- System for recycling the grey water of washhand basins, baths and other sanitary appliances and for supplying therewith toilet cisterns. The system consists in placing in a main pipe, after the waste water intake connector (1), a particles filter (9), a flow interruptor (11), a pump (14), an ozone injector (16), a water recirculation pump and an anti-return valve (18). The switch (11) sends information to a programmable	

automaton (12) which controls pumps (14) and (15) of the main pipe and the electrovalve (8) of the secondary pipe (6) through which the waste **water** is discharged by means of the outlet (7) to the building downpipe, when the storage tank is full. This system ensures that the **water** which reaches the toilet cistern is filtered, to avoid obstructions or loss of sealing in the closure and is free of **microorganisms** which are eliminated by the ozone injector.

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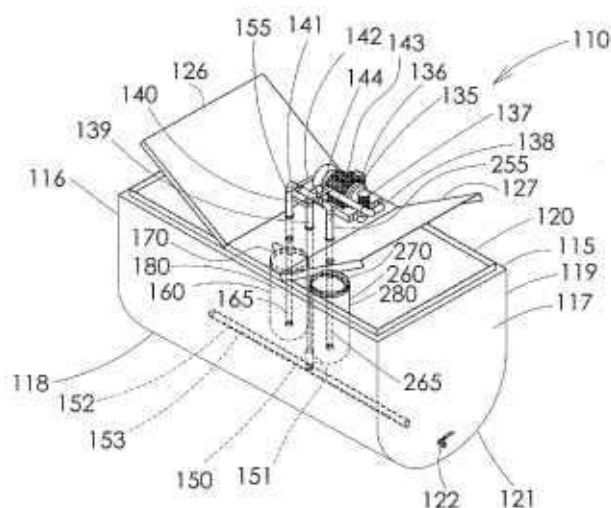
PN - [CN101821459](#) A 20100901
 PR - WO2007ES00483 20070808
 AP - CN20078100989 20070808
 DT - I
 CCI - [C02F1/78](#) ; [E03B1/04](#) ; [E03B1/042](#)
 CCA - [C02F1/001](#) ; [C02F2103/002](#) ; [E03B2001/045](#) ; [Y10T137/7316](#)
 PA - JAVIER DOLO MASNOU FRANCISCO
 TI - **Water** economizer system for domestic installations and the like
 AB - System for recycling the grey **water** of washhand basins, baths and other sanitary appliances and for supplying therewith toilet cisterns. The system consists in placing in a main pipe, after the waste **water** intake connector (1), a **particles filter** (9), a flow interruptor (11), a pump (14), an ozone injector (16), a **water** recirculation pump and an anti-return valve (18). The switch (11) sends information to a programmable automaton (12) which controls pumps (14) and (15) of the main pipe and the electrovalve (8) of the secondary pipe (6) through which the waste **water** is discharged by means of the outlet (7) to the building downpipe, when the storage tank is full. This system ensures that the **water** which reaches the toilet cistern is filtered, to avoid obstructions or loss of sealing in the closure and is free of **microorganisms** which are eliminated by the ozone injector.

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PN - [CN101717172](#) A 20100602
 PNFP - CN101717172B B 20120523
 PR - CN20091199155 20091120
 AP - CN20091199155 20091120
 DT - I
 CCA - [Y02W10/15](#)
 PA - (A)
 FISHERY MACHINERY AND INSTR RE
 - (B)
 CN ACAD FISHERY SCIENCES CAFS
 TI - (A B)
 Method for treating underground seawater used for aquiculture
 AB - (A B)
 The invention belongs to a technological method for removing iron and manganese in underground seawater out of marine culture **water**. The method for treating

underground seawater used for aquiculture comprises the following steps of: quick oxygenation treatment: carrying out oxygenation treatment by an oxygenation appliance and maintaining the pH value of a **water** body to be 7.0-7.8, wherein [O₂] is not less than 0.40[Fe²⁺]; biological oxidation treatment: hanging a hairbrush-shaped three-dimensional elastic filtering material of a PE material in a corridor of a reaction pool and forming a biologic **filter** membrane at the surface of a filler; detention treatment: detaining an insoluble substance in the elastic filtering material by the elastic filtering material in the reaction pool; precipitation treatment: precipitating in the corridor with the average **water** flow rate of 10-20m/h and the oxidation time of 1.5-3h; floatation treatment: treating by a floatation device, removing the fine **particles** of the iron and the manganese, carrying out secondary oxygenation and separating and removing most of insoluble compounds; and sand grain filtration treatment: filtering cinder and quartz sand by a two-section type filtering material filtration pool. The invention can ensure the content of dissolved oxygen in **water**, maintains the balance and the stability of **microorganisms** in the biologic filtering material and the **water** quality, has lower investment and running cost and increases the benefit of a culture system.

- 108/242** © EPODOC / EPO
- PN - [US7727758](#) B1 20100601
- PR - US20060377845 20060316
- AP - US20060377845 20060316
- DT - *; Rep
- CT - || STSE (B1)
[US5240597](#) A 19930831 [] (UEDA IWAO [JP])
[US5597732](#) A 19970128 [] (BRYAN-BROWN MICHAEL [US])
[US2002164781](#) A1 20021107 [] (ALMS MICHAEL [US], et al)
[US2004096963](#) A1 20040520 [] (HAHN GEORGE E [US], et al)
- CCI - [C05F17/0018](#)
- CCA - [Y02W30/43](#) ; [Y02P20/145](#)
- TI - Extraction and brewing machine
- AB - The present invention relates to an extraction and brewing machine having a tank, a fan assembly, a base aerator, an extractor head, and an extraction assembly. The extraction assembly has a container for being submerged in liquid held within the tank, and an extraction aerator. The container is comprised of a dome and a **filter**. The dome



defines an interior region for vigorous mixing of air, compost and **water**. The **filter** can be a mesh bag. The extraction aerator can have openings near the bottom of the bag. The flow of air through the **filter** causes a current of liquid, air and **microorganisms** to exit the chamber. The base aerator aerates all the liquid in the tank. The **microorganisms** in the tea continue to grow and multiply in the tank after extraction from the chamber, and no **particles** pass the **filter** that could jam a spray nozzle.

TXT - compost tea

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PN - [CN101698548](#) A 20100428

PNFP - CN101698548B B 20110420

PR - CN2009173103 20091028

AP - CN2009173103 20091028

DT - I

CCA - [C02F2103/008](#)

PA - (A B)
UNIV HARBIN ENG

TI - (A B)
Combined treatment method for ship ballast **water**

AB - (A B)
The invention provides a combined treatment method for ship ballast **water**, which comprises two steps of high gradient magnetic filtration and ultraviolet radiation treatment, wherein the step of high gradient magnetic filtration is that a high gradient magnetic **filter** is connected in series with an output port where a ballast pump adds ballast **water** to a ship ballast tank and the high gradient magnetic **filter** is adopted to carry out high-efficiency filtration on the ship ballast **water** to remove planktons and suspended **particles** with the size more than 50 microns; and the step of ultraviolet radiation treatment is to adopt the ultraviolet radiation to treat the ship ballast **water** after the step of high gradient magnetic filtration. The combined treatment method has the advantages of easy realization of automation, reliable operating altitude, moderate maintenance, small occupation area, safety, reliability, no generation of deleterious disinfection by-products, obvious effect of killing or inactivating **microorganisms** in the ship ballast **water**, high **water** treatment capacity, high efficiency and speed, and also has the advantages of meeting environment protection requirements, not being affected by natural temperature and removing germs, virus, protozoans and the like in the ballast **water** in the process that a pipeline transports the ballast **water**.

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PN - [CA2695670](#) A1 20090219

PR - WO2007ES00483 20070808

AP - CA20072695670 20070808

DT - I

CCI - [C02F1/78](#) ; [E03B1/04](#) ; [E03B1/042](#)

CCA - [C02F1/001](#) ; [C02F2103/002](#) ; [E03B2001/045](#) ; [Y10T137/7316](#)

PA - DOLO MASNOU FRANCISCO JAVIER [ES]

TI - **WATER** ECONOMIZER SYSTEM FOR DOMESTIC INSTALLATIONS AND THE LIKE

AB - System for recycling the grey **water** of washhand basins, baths and other sanitary appliances and for supplying therewith toilet cisterns. The system consists in placing in a main pipe, after the waste **water** intake connector (1), a **particles filter** (9), a flow interruptor (11), a pump (14), an ozone injector (16), a **water** recirculation pump and an anti-return valve (18). The switch (11) sends information to a programmable automaton (12) which controls pumps (14) and (15) of the main pipe and the electrovalve (8) of the secondary pipe (6) through which the waste **water** is discharged by means of the outlet (7) to the building downpipe, when the storage tank is full. This system ensures that the **water** which reaches the toilet cistern is filtered, to avoid obstructions or loss of sealing in the closure and is free of **microorganisms** which are eliminated by the ozone injector.