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Coordonnées client

Adresse électronique client

N Réf : R-11111
V Réf : e-mail du 10/07/2014
Dossier suivi par M M
Tél : 01 01 01 01 01
Mél : mm@inpi.fr

Courbevoie, le 1er août 2014

Objet : Etablissement d'un état de la technique

Madame (Monsieur),

Comme suite à votre accord cité en référence, nous vous prions de bien vouloir trouver ci-joint le résultat de la recherche R-11111 concernant l'état de la technique dans le domaine des dispositifs configurés pour recueillir l'eau issue du brouillard.

Nous vous souhaitons bonne réception de cet envoi et espérons que les informations fournies répondent de façon satisfaisante à votre demande.

Nous restons à votre entière disposition pour tout renseignement complémentaire et vous prions d'agréer, Madame (Monsieur), nos salutations les meilleures.

M M

AVERTISSEMENT

L'interprétation des résultats peut nécessiter le recours à un spécialiste tel qu'un conseil en propriété industrielle. Il est rappelé que les collaborateurs de l'INPI ne sont pas habilités à porter un jugement sur les antériorités citées.

L'INPI met en œuvre tous les moyens dont il dispose pour assurer aux recherches la plus grande fiabilité. Toutefois, compte tenu notamment de l'ampleur des bases de données consultées, le résultat peut exceptionnellement comporter des erreurs ou omissions. Celles-ci ne sauraient engager la responsabilité de l'INPI.

INSTITUT NATIONAL
DE LA PROPRIÉTÉ
INDUSTRIELLE

RESULTAT
R-11111

DISPOSITIFS CONFIGURÉS POUR RECUEILLIR L'EAU ISSUE DU BROUILLARD

Votre demande a concerné l'établissement de l'état de la technique dans le domaine des dispositifs configurés pour recueillir l'eau issue du brouillard pour la consommation domestique, tel que décrit dans votre demande.

Suite à notre analyse, la recherche a porté sur les installations configurées pour recueillir l'eau à partir de l'humidité atmosphérique et plus particulièrement à partir du brouillard.

Celle-ci a été effectuée principalement parmi :

- les demandes de brevets français (FR), anglais (GB), allemands (DE), américains (US), publiées depuis 1974 ;

- les demandes de brevets européens (EP) et les demandes internationales de brevets (WO), publiées depuis 1978.

L'établissement de l'état de la technique a permis de dégager trois technologies majeures dans la réalisation de dispositifs configurés pour recueillir l'eau du brouillard :

- les dispositfs de récupération d'eau à pales entrainées en rotation ;
- les dispositifs de récupération d'eau à filet ; et
- les dispositifs de récupération d'eau en forme de gouttière.

Vous trouverez ci-joint le listing organisé selon les trois technologies majeures identifiées, et comprenant les données bibliographiques issues de la base de données Fampat du serveur Questel, (numéro et date de publication, déposant), le titre et le résumé de l'invention, l'image le cas échéant et un lien vers le document complet.

M M

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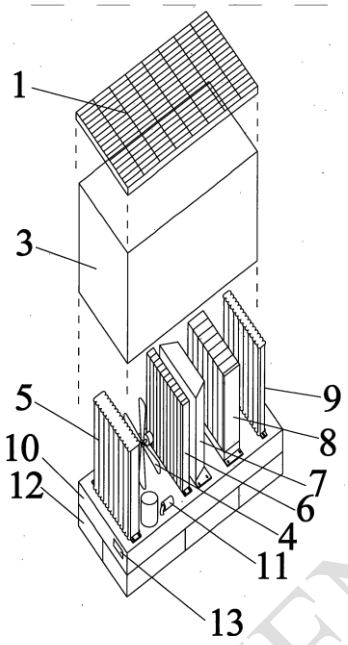
Établissement public national
créé par la loi n° 51-444 du 19 avril 1951

Technologie utilisant un système de pales en rotation : 5 références

1/5-FAMPAT-©Questel



Patent Number:

CN103422536 A 20131204 [CN103422536]

Priority Nbr:

2012CN-0152170 20120516

Patent Assignee:

YU LIANFU

Inventor:

YU LIANFU

Intl Patent Class:

E03B-003/28

Title:

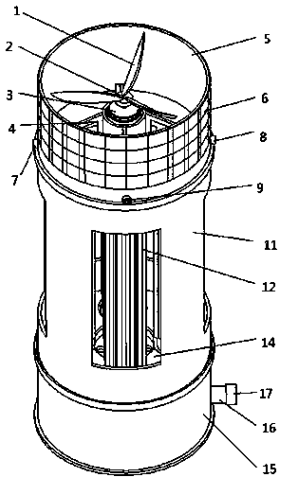
Solar drought-resisting water maker and water making method thereof

Abstract:

(CN103422536)
Disclosed are a solar drought-resisting water maker and a water making method thereof. The solar drought-resisting water maker is characterized by comprising a solar photovoltaic cell panel, a storage cell, an outer shell, an induced draft fan, a filter, a condenser, a freezing inner container, an evaporator, a fog collecting grid, a water storage tank and a pressure water pump which serve as internal power parts, the solar photovoltaic cell panel is arranged at the top end of the outer shell, a suction outlet is arranged on the outer shell, the induced draft fan is arranged oppositely to the suction outlet, the filter is arranged in front of the induced draft fan, the condenser, the freezing inner container and the evaporator are arranged in rear of the filter, fog is collected by the fog collecting grid after passing through the evaporator, the water storage tank is arranged below the fog collecting grid, the pressure water pump is arranged on the water storage tank, and the storage cell connected with the photovoltaic cell panel is arranged on the lower portion of the water storage tank. Solar energy which is recyclable clean energy is utilized to generate water, so that no damage and pollution is caused to environment; the solar energy is a kind of energy which can be used without compensation, so that mass introduction and use of the solar drought-resisting water maker for generation of water resources are facilitated.

WPI Abstract:

The machine has a shell whose top end is fixed with a solar energy photovoltaic battery plate. The shell is provided with an air suction port that is provided with a suction fan. A suction air flow direction is provided with a condenser. A water pump is provided with a pressure water storage tank. A storage battery is connected with a water storage tank. A liquid level position of a liquid level detector is provided with an upper part of the water storage tank.



Patent Number:

CN103266645	A	20130828	[CN103266645]
CN103266645	B	20140611	[CN103266645B]

Priority Nbr:
2013CN-0160248 20130503

Patent Assignee:
ZHEJIANG UNIVERSITY

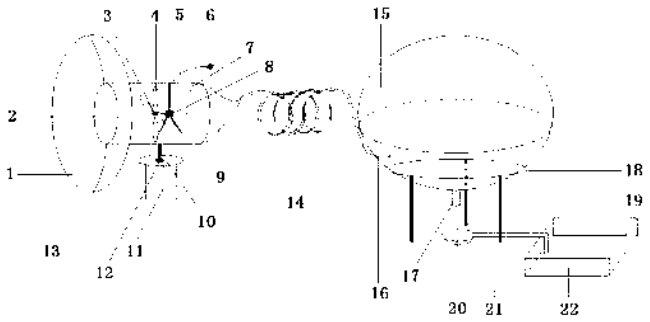
Inventor:
ZHOU PEI; SONG XIAOWEN

Intl Patent Class:
E03B-003/28

Title:
Bionic portable fog collector

Abstract:
(CN103266645)
The invention discloses a bionic portable fog collector. Fan blades are fixed on a blade support which is connected with a direct-current motor. The direct-current motor is inserted into a direct-current motor seat which is fixed in an air restraining drum. A solar panel is sleeved on the air restraining drum which is clamped at the upper end of an air blowing drum. Metal fog collecting pipes in a metal fog collecting pipe set are of snowflake structures, grooves are reserved on the concave faces of each snowflake structure, and a hydrophobic membrane set is arranged in each groove. A water outlet pipe is fixed on a fog collecting tank. The metal fog collecting pipe set is inserted into a fog conveying plate mounting hole. A fog conveying plate is fixed on the inner side of the air blowing drum. The fog collecting tank is clamped to the lower end of the air blowing drum. The bionic portable fog collector is suitable for areas which are short of water resources but high in air humidity and occasions requiring carrying and assembling convenience, easy to mount and demount, portable, simple to machine, low in cost, easy to use, and low in user's technical requirements.

WPI Abstract:
The collector has a fan blade (1) fixed on a blade (2) that is connected with a direct current motor (3). The direct current motor is inserted into a direct current electrical machine seat (4) that is connected with a left motor seat fixed bolt (7). A motor seat fixed bolt is fixed on a beam air cylinder (5). A battery board (6) is sleeved on the beam air cylinder. A snow flake structured concave metal collector (12) is provided with a groove. A water outlet pipe (16) is fixed on a water collecting tank (15), where the metal collector is made of aluminum.



Patent Number:

CN102733452 A 20121017 [CN102733452]

Priority Nbr:

2012CN-0094199 20120518

Patent Assignee:

NANJING UNIVERSITY

Inventor:

GUILIN XIE; BAOZHONG WANG; TONGYIN XIE; BO CHENG; DESHUN XIE; DIANXING PEI

Intl Patent Class:

E03B-003/28

Title:

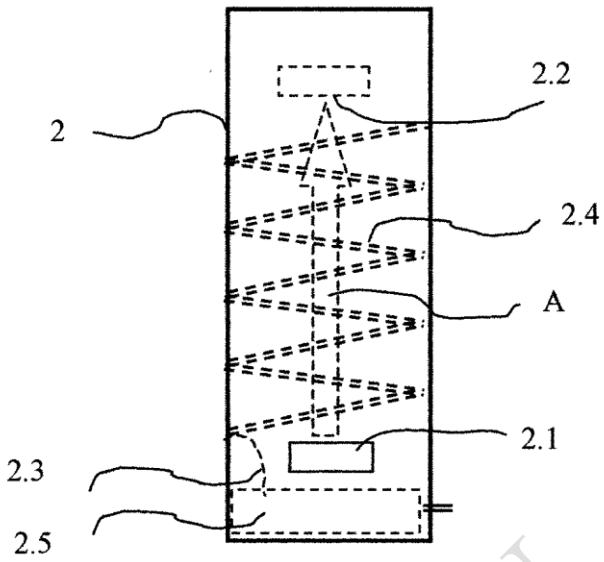
Fog-absorbing water accumulator

Abstract:

(CN102733452)
The invention relates to a fog-absorbing water accumulator belonging to the technical field of agricultural machinery. The fog-absorbing water accumulator comprises a fog-absorbing horn, a fog-absorbing orifice, a vane wheel rotating shaft, vane wheels, a power cord, a power cord plug, a fog-absorbing cylinder, a motor, a fog-absorbing cylinder head, a movable support bar, fog-absorbing basal disc legs, a movable support bar rotating shaft, a fog-absorbing basal disc, a spiral fog-conveying pipe, a fog slow-releasing ball, a fog-conveying pipe head, a water-discharging pipe, a slow-releasing ball support frame, slow-releasing ball support frame legs, a water-receiving trough, a water-guiding pipe and a water-accumulating tank. The vane wheels of the fog-absorbing water accumulator rotate, so that fog can be absorbed into the fog-absorbing cylinder; the fog is accelerated in the fog-absorbing cylinder head, the spiral fog-conveying pipe and the fog-conveying pipe head to reach the fog slow-releasing ball; and based on the principles of colliding to condense and cooling to condense, moisture contained in the thick fog can be collected in positions where water can not be conveyed easily, thereby changing harm into profit and serving the production and life of people. The fog-absorbing water accumulator has the advantages of simple structure, convenient operation process and high practicality.

WPI Abstract:

The accumulator has a mist absorbing tube (7) connected with a mist outlet (2) that is opened on an absorb loudspeaker (1). The mist absorbing tube is provided with a power supply wire (5) that is provided with a power supply wire plug (6). A driving motor (8) is provided to operate the accumulator. The absorbing tube is provided with a movable supporting rod (10). An upper end of a valve rod is welded on the mist absorbing tube, and a lower end of the valve rod is connected with the movable supporting rod on a rotating shaft (12) to push the mist absorbing tube.



Patent Number:

FR2952388	A1	20110513	[FR2952388]
FR2952388	B1	20140509	[FR2952388]

Priority Nbr:

2009FR-0005367 20091109

Patent Assignee:

MARTINIERE CAROLE JEANINE
MARTINIERE DAVID BRUNO
MARTINIERE JEAN PIERRE GERARD
MASSON VIOLAINE FRANCOISE

Inventor:

MARTINIERE JEAN PIERRE GERARD; MARTINIERE DAVID BRUNO; MASSON VIOLAINE FRANCOISE; MARTINIERE CAROLE JEANINE

Intl Patent Class:

B01D-005/00
B01D-053/00
E03B-003/28
F03D-009/00

Title:

DISPOSITIF AUTONOME DE PRODUCTION D'EAU UTILISANT AU MOINS UN ELEMENT D'UN EQUIPEMENT AUTONOME DE PRODUCTION D'ENERGIE COMME ELEMENT DU DISPOSITIF DE PRODUCTION D'EAU

Abstract:

(FR2952388)
The device has a producing unit i.e. wind generator, for producing energy in autonomous manner. A mast (2) of the producing unit is utilized as one of elements permitting to recover water present in ambient air. The mast includes an air inlet opening (2-1) located at a base of the mast, and an air outlet opening (2-2) located at the top of the mast to generate and/or promote circulation of air (A) inside the mast. A flap adjusts flow of the air circulation through the openings.

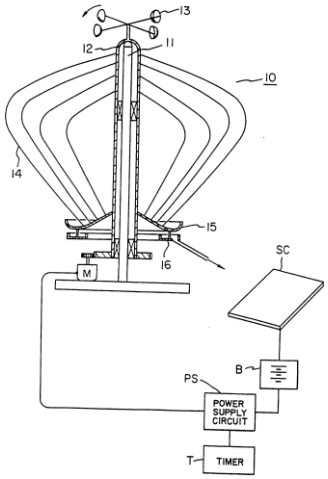


FIG 1

Patent Number:

JPH05202537	A	19930810	[JP05202537]
EP0555966	A1	19930818	[EP-555966]
US5275643	A	19940104	[US5275643]
EP0555966	B1	19980506	[EP-555966]
DE69318321	D1	19980610	[DE69318321]

Priority Nbr:
1992JP-0013108 19920128

Patent Assignee:
USUI YOSHIO

Inventor:
USUI YOSHIO

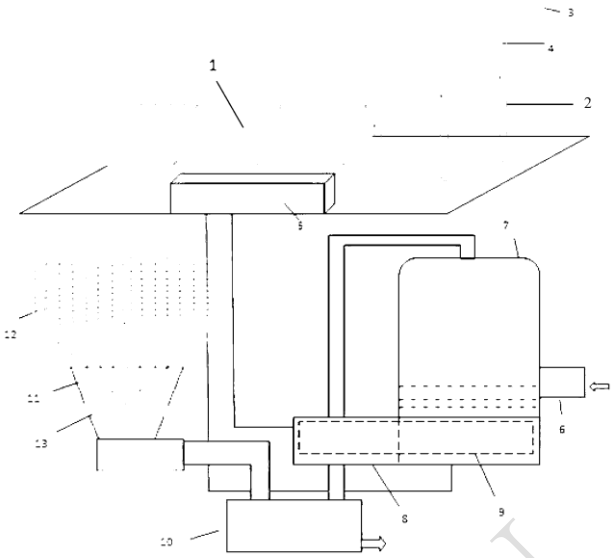
Intl Patent Class:
B01D-019/00
B01D-045/00
B01D-045/08
E03B-003/00
E03B-003/28

Title:
Fog water collecting device.

Abstract:
(EP-555966)
The present invention is a device that can obtain fresh water from fog. The fog water collecting device comprises a vertical shaft (11), windmill elements (13) for producing rotational force from wind, a cylindrical rotating structure (12) supported so as to rotate about the said vertical shaft, a water collecting vessel (15) secured at the bottom of this rotating structure, a plurality of flexible rods (14) one end of each is fixed at the upper portion of said rotating structure and the other end of each is directed toward said water collecting vessel and, a receiving conduit for obtaining water collected in the said water collecting vessel. When the said rotating structure turns from fog containing wind, water droplets sequentially adhere and accumulate on the said flexible rods, then collect in the said water collecting vessel, and are subsequently directed toward an external destination via the said conduit. <IMAGE>

Technologie utilisant un filet : 12 références

1/12-FAMPAT-©Questel



Patent Number:

CN202990011 U 20130612 [CN202990011U]

Priority Nbr:

2012CN-U707843 20121219

Patent Assignee:

DENG ANPING
WANG MENGRU
ZHANG GUIJUAN

Inventor:

DENG ANPING; ZHANG GUIJUAN; WANG MENGRU; LI YUNZHOU; YANG YIMU; LIU YI; ZHOU JIALIN; XIA YUHE; ZOU ZHAOWEI; WU WENJUAN; LI QI; ZHANG YIFAN; YANG QIAN; YIN HANG; CHEN SHUO; ZHAI XIAOFANG; HE JIAYAO; SUN XIAOMING; YAO YE; ZHANG QIAN; QIN KAILI; ZHAO ZIHAO; ZHANG MENGXIN; JIN YI; LIU XIAOTIAN; GAO CHENGYU; LI YANZHANG; HAN YANGRUIDA

Intl Patent Class:

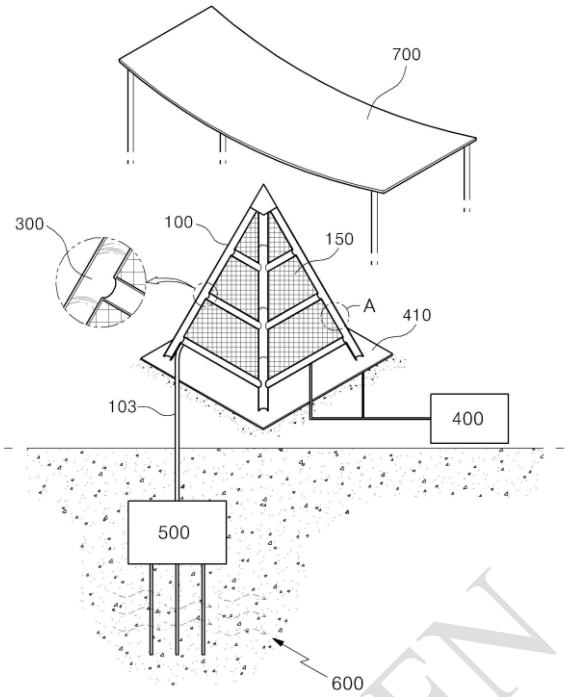
C02F-001/04
E03B-003/02
E03B-003/28

Title:

Weatherproof multi-way fresh water collecting device

WPI Abstract:

A kind of all-weather multi-way fresh water collecting device, comprising a power device, an evaporating condensing device and mist collector, electric power is connected with the storage battery device comprises a solar energy battery board and the wind power generation device, evaporation and condensation device comprises a water injection box, comprising a heating device for evaporating pot, evaporating pot top by water vapour collecting pipe is connected with the condensing device, the lower condensing device is connected with the fresh water tank, a power device is an evaporation and cooling of the heating device and the condensing device supplying electrical energy, wherein the fog water collector upper part is metal wire net, the lower part is connected with a collecting container, and wherein the computer device collects container and the water tank. The wind power generate electricity device is provided with a spoon-shaped wind wing, the collecting container is provided with a filter layer. This utility model can supply fresh water, which is suitable for island, desert and so on is not changeable by the development, weather or weather is weather area can use solar energy, wind energy, fog, rain and so on natural renewable resources, no pollution, green and environment-friendly.



Patent Number:

KR101252691 B1 20130409 [KR101252691]

Priority Nbr:

2011KR-0115589 20111108

Patent Assignee:

NAT UNIV PUKYONG IND UNIV COOP

Inventor:

BYUN HI RYONG; PARK SO RA; KIM SU JEONG; JEONG SU WON; LEE SONG YI

Intl Patent Class:

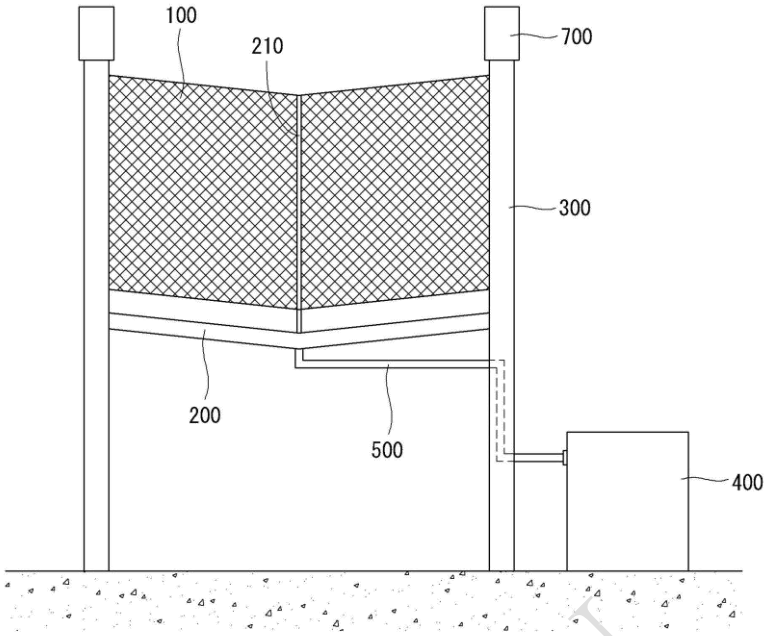
B01D-005/00
E03B-003/28

Title:

APPARATUS FOR PRODUCTION OF WATER FROM FOG

Abstract:

(KR101252691)
PURPOSE: A water generating device using mist is provided to improve the amount of collection of mist by applying a thermodynamic means and improve the collection efficiency by condensing water when air is humid. CONSTITUTION: A water generating device using mist comprises a mist collector(100), a heat conduction metal body(103), a metal cooling source(500), a natural cooling source(600), and a water storage unit(400). The mist collector is installed in the atmosphere and is shaped as a polyhedral pyramid. The heat conduction metal body comes into contact with one side of the mist collector. The metal cooling source comes into contact with one side of the heat conduction metal body. The natural cooling source comes into contact with the metal cooling source and continuously maintains a lower temperature related to the atmospheric temperature. The water storage unit is connected to the mist collector and stores the extracted water.



Patent Number:

KR20130023446	A	20130308	[KR20130023446]
KR101304336	B1	20130911	[KR101304336]

Priority Nbr:
2011KR-0086203 20110829

Patent Assignee:
NEXUS ENVIRONMENTAL DESIGN CENTER

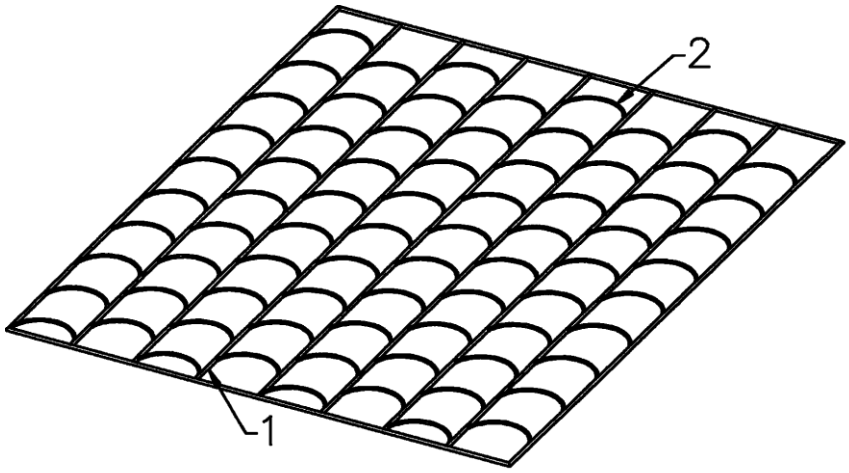
Inventor:
CHO DONG GIL; BACK UN SIK

Intl Patent Class:
B01D-005/00
E03B-003/28

Title:
FOG COLLECTING APPARATUS

Abstract:
(KR20130023446)
PURPOSE: A fog collecting device is provided to collect water from water saturated air and to solve water shortage. CONSTITUTION: A fog collecting device comprises a capture unit(100), a water collecting unit(200), a supporting unit(300), storage(400), and a connection unit(500). The capture unit is formed with a net for collecting fog and is composed of one of nylon, polyester, polyurethane, and polyvinyl chloride with the weaving gap of 0.1-2.0cm. The water collecting unit is positioned in the lower side of the capture unit in order to collect fog which is captured by the capture unit. The supporting unit supports the capture unit with both ends and stores the captured fog by the capture unit. The connection unit connects the water collecting unit and storage in order to deliver the collected fog in the collecting unit to the storage.

WPI Abstract:
The apparatus has a supporting unit (300) which is provided to support the capture site (100) in both ends of the water collecting basin (200) to collect the mist. A connection unit (500) is provided to connect the water collecting basin and the storage unit (400), such that the mist gathered in the water collecting basin is moved to the storage unit. The storage unit is made of nylon provided with a weaving gap of 0.1cm - 2.0cm and polyester, polyurethane or polyvinyl chloride. The storage unit is provided to store the sampled mist in the capture site.



Patent Number:

CN202248054 U 20120530 [CN202248054U]

Priority Nbr:

2011CN-U390036 20111014

Patent Assignee:

LINGCHENG LI
XILUN LI
ZHUORAN DUAN

Inventor:

LINGCHENG LI; XILUN LI; YUAN JUN; CAIHONG ZHU; ZHUORAN DUAN

Intl Patent Class:

E03B-003/28

Title:

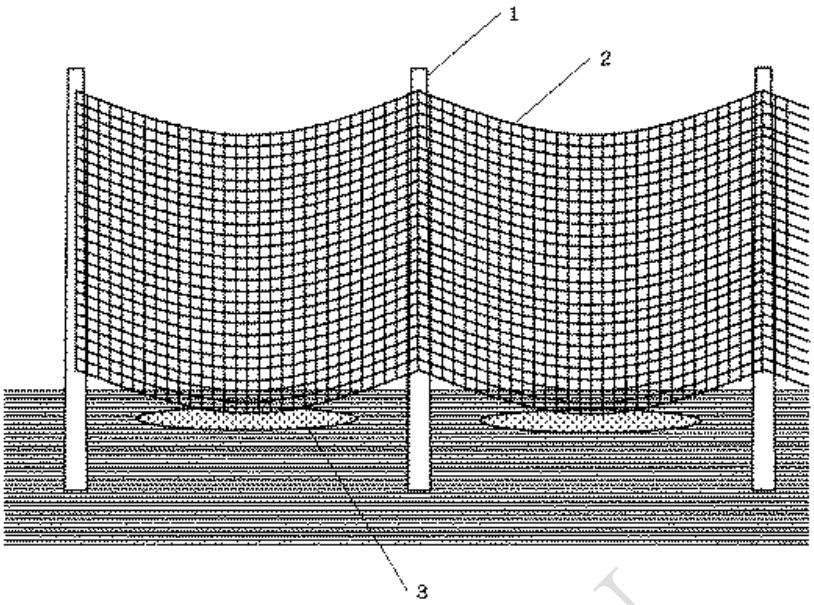
Novel mist condensation mesh

Abstract:

(CN202248054U)
The utility model relates to a novel mist condensation mesh which consists of condensation filaments and water guide filaments. The water guide filaments are longer, parallel to each other and distributed at equal intervals. The condensation filaments are shorter, arranged in the same plane with the water guide filaments, parallel to each other and distributed at equal intervals between each two water guide filaments. The condensation filaments are arc-shaped, and any two adjacent condensation filaments are not intersected. The condensation filaments are made of hydrophilic materials, and the water guide filaments are made of hydrophobic radiation refrigeration materials. The condensation filaments and the water guide filaments are arranged alternately. The water guide filaments made of radiation refrigeration materials reduce the temperature of ambient air while the condensation filaments made of hydrophilic materials capture water droplets condensed in air. The arc-shaped edge of the condensation filaments and the hydrophobic water guide filaments lead accumulated water droplet to fall off. The novel mist condensation mesh has a simple structure, is convenient to use and high in water condensation efficiency and can effectively relieve the pressure of water use in water deficient areas.

WPI Abstract:

The condensation net has condensation wires and water guide wires. The water guide wires are long, and parallel to each other. The condensation wires are short, are parallel to each other on the same plane and are distributed between each two water guide wires.



Patent Number:

JP2011067188 A 20110407 [JP2011067188]

Priority Nbr:

2009JP-0242848 20090928

Patent Assignee:

SASAKI NORIMASA

Inventor:

SASAKI NORIMASA

Intl Patent Class:

A01G-015/00
E03B-003/00
E03B-003/28

Title:

DESERT GREENING SYSTEM BY UTILIZING COLLECTED FOG DRIP

Abstract:

(JP2011067188)
PROBLEM TO BE SOLVED: To provide a desert greening system by utilizing collected fog drip.
SOLUTION: The desert greening system is constituted by spreading a net for preventing balls for golf so as to be orthogonal to the moving direction of fog while slackening the net, burying a part of the lower terminal of the net so that the net may not be moved by wind, and burying soil or the like having high water retaining ability in the soil by centering the hung down parts of the net.
COPYRIGHT: (C)2011,JPO&INPIT

WPI Abstract:

The greening system includes a ball guarding net (2) used in golf, in which the net is spread at right angle with respect to the moving direction of the fog. A structure is arranged to fill the lower end part of the net to prevent the net from shaking due to wind. Soil (3) with large moisture retention capability is used to bury a portion of the hanging part of the net to the ground.

6/12-FAMPAT-©Questel

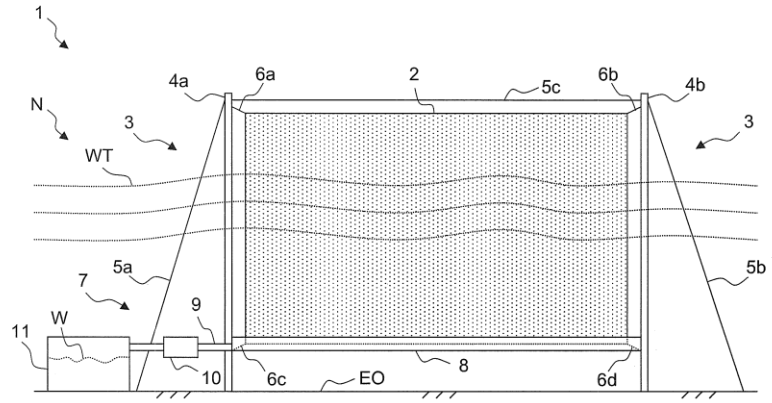


Fig. 1

Patent Number:

WO2010028957	A1	20100318	[WO201028957]
DE102008042069	A1	20100318	[DE102008042069]
EP2337620	A1	20110629	[EP2337620]

Priority Nbr:

2008DE-10042069 20080912
2009WO-EP61064 20090827

Patent Assignee:

DEUTSCHE INSTITUTE FUER TEXTIL & FASERFORSCHUNG DENKENDORF
DITF DEUTSCHE INSTITUTE FÜR TEXTIL & FASERFORSCHUNG
INSTITUTE TEXTIL & FASERFORSCHUNG

Inventor:

SARSOUR DR JAMAL; SCHNEIDER PETRA; STEGMAIER THOMAS

Intl Patent Class:

B01D-005/00
B01D-046/00
B01D-046/10
B01D-046/42
B01D-053/02
D03D-015/00
D03D-025/00
E03B-003/00
E03B-003/28
G01W-001/00

Title:

DEVICE FOR EXTRACTING A LIQUID FROM AN AEROSOL

French Abstract:

(WO201028957)
L'invention concerne un dispositif de recueil d'un fluide (W) d'un aérosol (N), en particulier pour recueillir de l'eau (W) de nébulisation (N), comprenant au moins un élément de précipitation textile (2) pour la précipitation des particules fluides (WT) contenues dans l'aérosol (N), l'élément de précipitation (2) étant constitué comme une structure textile tridimensionnelle (2a, 2b).

German Abstract:

(WO201028957)
Vorgeschlagen wird eine Vorrichtung zur Gewinnung einer Flüssigkeit (W) aus einem Aerosol (N), insbesondere zur Gewinnung von Wasser (W) aus Nebel (N), mit wenigstens einem textilen Abscheidungselement (2) zum Abscheiden von im Aerosol (N) enthaltenen flüssigen Teilchen

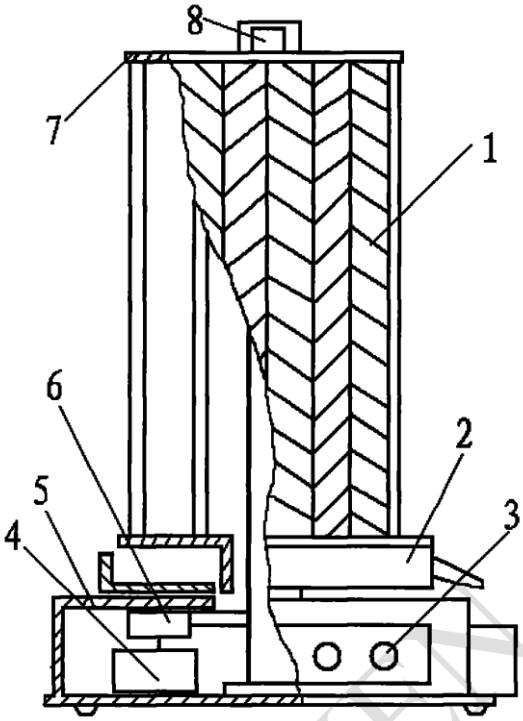
(WT), wobei das Abscheidungselement (2) als dreidimensionale Textilstruktur (2a, 2b) ausgebildet ist.

Abstract:

(EP2337620)

What is proposed is a device for extracting a liquid (W) from an aerosol (N), in particular for extracting water (W) from fog (N), comprising a textile separating element (2) for separating liquid particles (WT) contained in the aerosol (N), wherein the separating element (2) is designed as a three-dimensional textile structure (2a, 2b).

(From WO2010028957 A1)



Patent Number:

CN201326191 Y 20091014 [CN201326191U]

Priority Nbr:

2008CN-U210850 20081206

Patent Assignee:

CHAOZE LONG

Inventor:

ZHIHONG HAN; CHAOZE LONG

Intl Patent Class:

E03B-003/00
E03B-003/28

Title:

Fog-condensation water collector

Abstract:

(CN201326191U)
The utility model discloses a fog-condensation water collector, which is characterized by comprising imitation leaf vein nets (1), a motor (4), a transmission mechanism (6), a triangular bracket (7) and a shaft (8), wherein each edge of the triangular bracket (7) is provided with one imitation leaf vein net (1); and the motor (4) dives the imitation leaf vein nets (1) to rotate by the transmission mechanism (6) and the shaft (8). The utility model is in secondary fog condensation, thereby having the advantages of low cost and good fog-absorption and water-collection effect.

WPI Abstract:

The water collector has a simulated venation nets (1) attached at sides of a triangular bracket (7), where the simulated venation nets are rotated by an electric motor (4) via a transmission mechanism (6) and a shaft (8). The triangular bracket is formed in shape of inwards concave isosceles triangle, and the simulated venation nets are formed in shape of inwards concave structure.

8/12-FAMPAT-©Questel

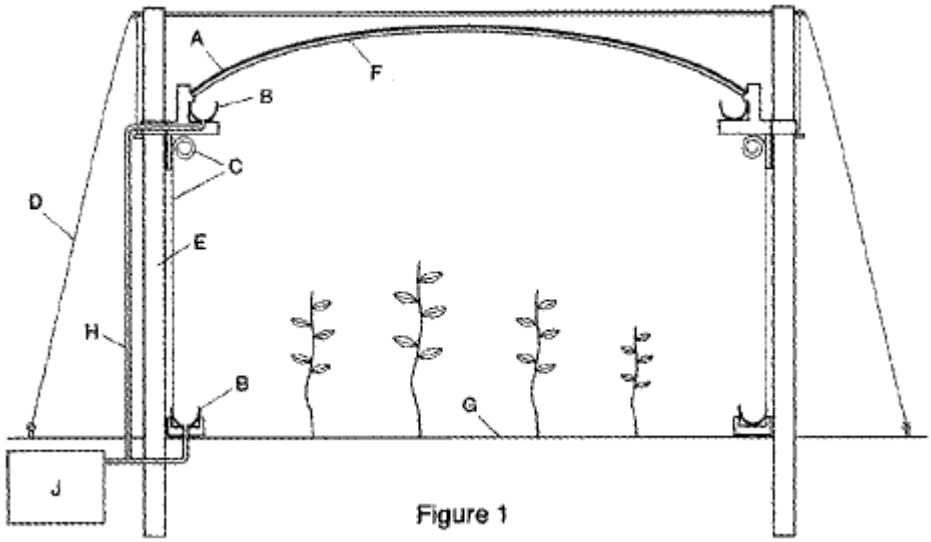


Figure 1

Patent Number:

GB0912718	D0	20090826	[GB200912718]
GB2472041	A	20110126	[GB2472041]

Priority Nbr:
2009GB-0012718 20090722

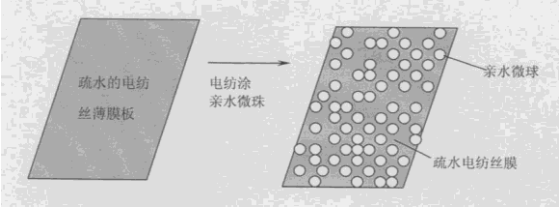
Patent Assignee:
HELIOCYCLE
QUESTOR C

Inventor:
DENNING MAX

Intl Patent Class:
A01G-009/24
E03B-003/28

Title:
Heliocycle

Abstract:
(GB200912718)
A greenhouse has an irrigation system which comprises collecting condensation from crops arising out of evapotranspiration. The system may also capture dew. The greenhouse may have a roofAwhich causes humid air to condense, the water being collected by internal guttersBat the sides of the roof. The inner side of the roof may have a super hydrophobic surface or capillary fluting to the underside to encourage condensation. The sidesCof the greenhouse may capture dew or fog capture on fine mesh materials, the liquid being collected in secondary guttersBat the base of the mesh. The mesh may be height adjustable. The water collected may be filtered and stored in a storage tankJ. The greenhouse may have a translucent thin film photovoltaic power generation unit in the roof.



Patent Number:

CN1880592	A	20061220	[CN1880592]
CN100445479	C	20081224	[CN100445479C]

Priority Nbr:
2005CN-0011943 20050616

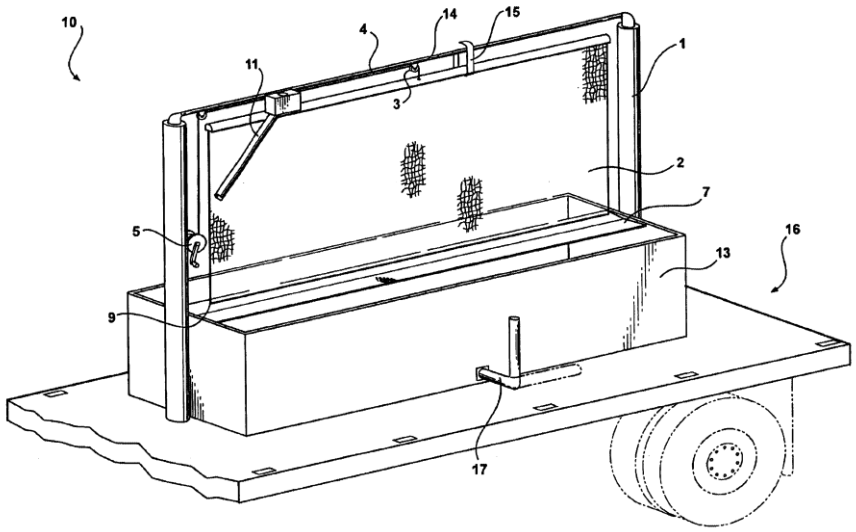
Patent Assignee:
INSTITUTE OF CHEMISTRY, CHINESE ACADEMY OF SCIENCE

Inventor:
HUANG ZHONGBING JIANG

Intl Patent Class:
B29B-007/00
B29B-009/00
B29B-009/08
B29C-047/00
D06N-007/00
D06N-007/04
E03B-003/00
E03B-003/28

Title:
Bionic water-collecting composite electrospun film and its preparation method and use

WPI Abstract:
The invention relates to a bionic water collect composite film, which comprises a base with many round micro hydrophilic polymer projections on its above hydrophobic polymer film; said hydrophobic polymer is the polystyrene that doped with 20-30wt% silica dioxide whose average diameter is 2-100nm; the hydrophilic polymer is the polymer of amido, hydroxyl or carboxyl doped with 10-70wt% titania whose average diameter 1-100micrometer; the hydrophobic polymer film comprises one or several of ultraviolet stabilizer, ultraviolet absorber, ozone stabilizer, and antioxidant. The inventive film can collect fog drop or disperse dense fog. The invention has high water collecting efficiency, long service life, and better hydrophilic/ hydrophobic property.



Patent Number:

US2003145729	A1	20030807	[US20030145729]
US6869464	B2	20050322	[US6869464]

Priority Nbr:

2002US-P354816 20020206
2003US-0360070 20030206

Inventor:

KLEMIC JOHN

Intl Patent Class:

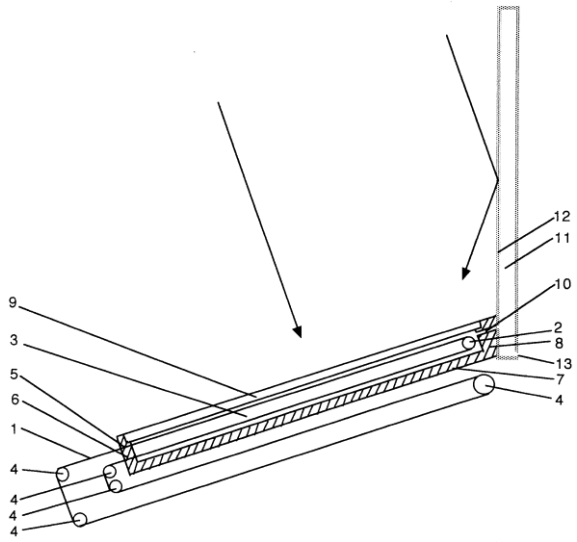
B01D-053/02
B01D-053/04
B01D-053/26
B01D-053/28

Title:

Atmospheric water absorption and retrieval device

Abstract:

(US20030145729)
A device for absorbing atmospheric moisture includes a support member with a net extending therefrom. The net includes a super absorbent polymer that has the property of being able to absorb a multiple of the polymer mass in atmospheric water and to thereafter release the water in response to an external stimulus. The device is in this way reusable. The device has particular application in the clearing of fog, manure odor clearance, and collection of potable water in remote locations. A process for extracting atmospheric moisture is also detailed that includes the step of extending a super absorbent polymer net into contact with an atmosphere. Thereafter, with that being in contact with the atmosphere for a sufficient amount of time moisture is absorbed from the atmosphere. The application of a stimulus to the super absorbent polymer containing atmospheric moisture causes the release of liquid water therefrom. The super absorbent polymer is then suitable for reuse to again absorb atmospheric water.
In this application, a housing is provided to protect the superabsorbent polymer net associated apparatus from wildlife contamination.



Patent Number:

FR2813087	A1	20020222	[FR2813087]
FR2813087	B1	20030228	[FR2813087]

Priority Nbr:

2000FR-0010703 20000818

Patent Assignee:

BEAUZAMY JACQUES PIERRE

Inventor:

BEAUZAMY JACQUES PIERRE

Intl Patent Class:

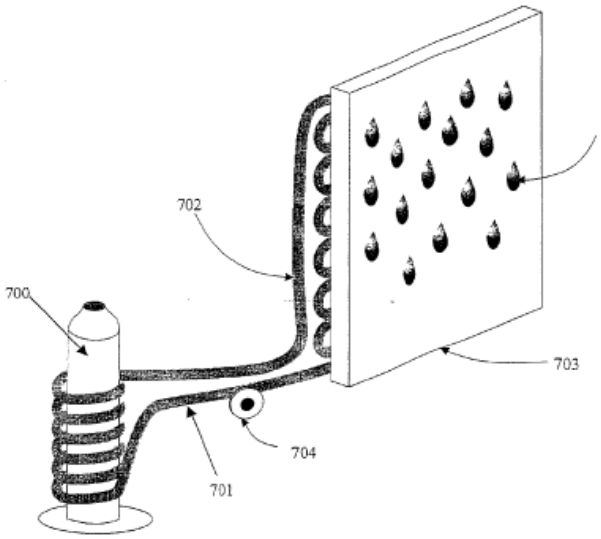
B01D-005/00
B01D-053/28
C02F-001/14
E03B-003/00
E03B-003/28

Title:

DISPOSITIF POUR RECUPERER DE L'EAU PRESENTE DANS L'ATMOSPHERE A L'ETAT DE VAPEUR OU DE BROUILLARD

Abstract:

(FR2813087)
Dispositif pour condenser la vapeur d'eau atmosphérique.L'invention concerne un dispositif permettant de fixer la vapeur d'eau atmosphérique présente au voisinage du sol dans les régions chaudes, et de la restituer sous forme liquide.Le dispositif est constitué d'une bande de tissu (1) imprégnée d'un composé chimique absorbant, qui circule entre un four solaire (3) et l'extérieur. La vapeur d'eau passe du four (3) au condenseur (11) au travers de l'orifice (10). L'eau produite s'écoule par l'orifice (13).Le dispositif selon l'invention est particulièrement destiné à la production d'eau potable dans les régions arides et désertiques.



Patent Number:

US2002011075	A1	20020131	[US20020011075]
US6574979	B2	20030610	[US6574979]

Priority Nbr:

2000US-0627450 20000727
2001US-0810541 20010319

Patent Assignee:

FAKIEH RESEARCH & DEVELOPMENT

Inventor:

FAQIH ABDUL-RAHMAN ABDUL-KADER

Intl Patent Class:

B01D-005/00
C02F-001/28
C02F-001/42
C02F-001/78
C02F-009/00
E03B-003/00
E03B-003/28
F25D-021/14

Title:

Production of potable water and freshwater needs for human, animal and plants from hot and humid air

Abstract:

(US20020011075)
Systems and methods are disclosed for extracting freshwater from atmospheric humidity in extremely hot and humid climates and supplying freshwater to a small group of people, a building, a farm, or forestation area. The freshwater is treated to provide drinking water by disinfecting to eliminate microorganisms and filtration to remove suspended particulates from air, erosion or corrosion products, and disinfected waste. Compact units provide drinking water for individuals, passengers in cars, vans, trucks, or recreational boats, or crewmembers on a seagoing cargo ship whether from atmospheric humidity or from moisture-laden gases. Furthermore, systems are disclosed for the ample supply of freshwater with minimal treatment for small- to large-sized buildings in a manner that alleviates the heat load on buildings. Collection of freshwater from hot humid ambient air is also provided for other uses, such as irrigation and farm animal drinking. Various methods are used for condensation of water vapor suspended in the air as alternative to conventional refrigeration cycles using CFC refrigerants. Devices are disclosed using naturally occurring brackish cold water, circulation of cooling water cooled by thermoelectric cooling or thermoacoustic refrigeration as well as evaporative cooling and transpiration cooling. Water

produced by the systems may flow under gravitational forces entirely or with the assistance of boasting pumps.
The operation of the system involves drawing brackish water from a natural water source using the pump 870 that pumps the water into the pipe 871 and sprays it over the outer skin of the pots with the sprayer 872 to dampen the porous surface and the coating to saturation.

Technologie utilisant des profils en forme de gouttière : 11 références

1/11-FAMPAT-©Questel

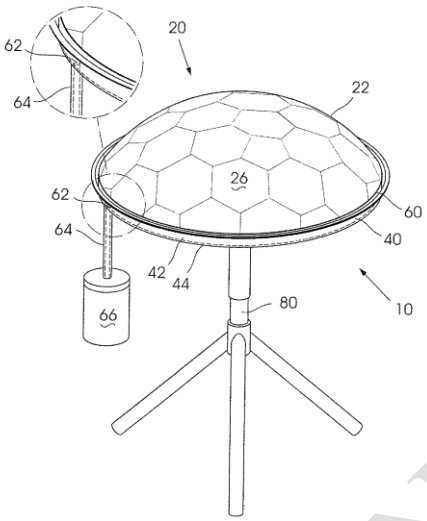


Fig. 1

Patent Number:

WO2013168129 A1 20131114 [WO2013168129]

Priority Nbr:

2011ZA-0008282 20120511

Patent Assignee:

UNIVERSITY OF THE WITWATERSRAND

Inventor:

SHERIDAN CRAIG MICHAEL

Intl Patent Class:

E03B-003/00
E03B-003/28

Title:

A PASSIVE RADIATIVE CONDENSER

French Title:

CONDENSEUR RAYONNANT PASSIF

French Abstract:

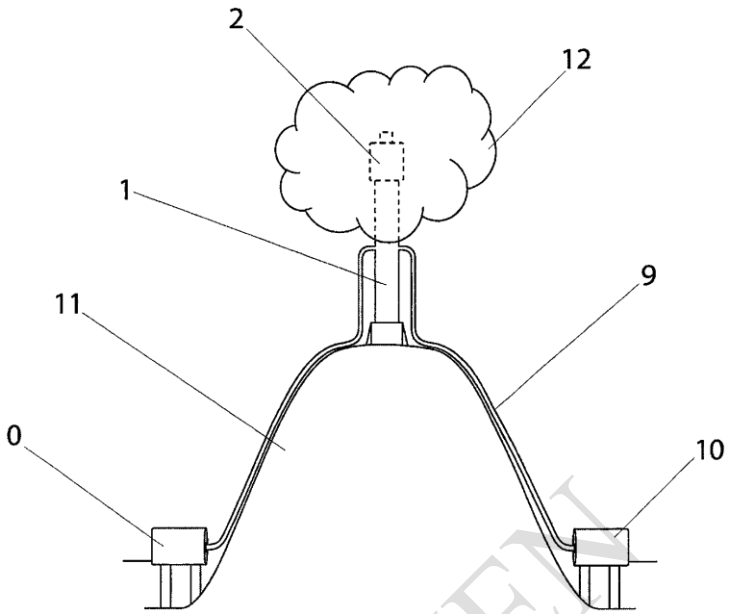
(WO2013168129)
Cette invention concerne un condenseur rayonnant passif (10) conçu pour recueillir de l'eau à partir de la vapeur d'eau atmosphérique. Ledit dispositif (10) comprend un agencement collecteur d'eau (20) présentant une surface sensiblement convexe (22) pour recueillir de l'eau à partir de la vapeur d'eau atmosphérique par refroidissement par rayonnement passif, et un réservoir d'eau (66) en communication fluidique avec l'agencement collecteur d'eau. Le refroidissement par rayonnement passif de l'agencement collecteur d'eau fait baisser sa température superficielle de telle façon que la vapeur d'eau atmosphérique se condense et s'accumule sur l'agencement collecteur d'eau (20) et s'écoule sous l'effet de la pesanteur vers le réservoir d'eau (66).

Abstract:

(WO2013168129)
A passive radiative condenser device (10) that is suitable for collecting water from atmospheric water vapour. The device (10) has a water collection arrangement (20) with a substantially

convex surface (22) for collecting water from atmospheric water vapour through passive radiative cooling, and a water storage container (66) in fluid communication with the water collection arrangement. Passive radiative cooling of the water collection arrangement lowers the surface temperature thereof so that atmospheric water vapour condenses and accumulates on the water collection arrangement (20) and flows under gravity to the water storage container (66).

FIG. 1



Patent Number:

BRPI1103131 A2 20130723 [BR201103131]

Priority Nbr:

2011BR-0003131 20110621

Patent Assignee:

COSTA CHARLES WILLIAM CAETANO

Inventor:

COSTA CHARLES WILLIAM CAETANO

Intl Patent Class:

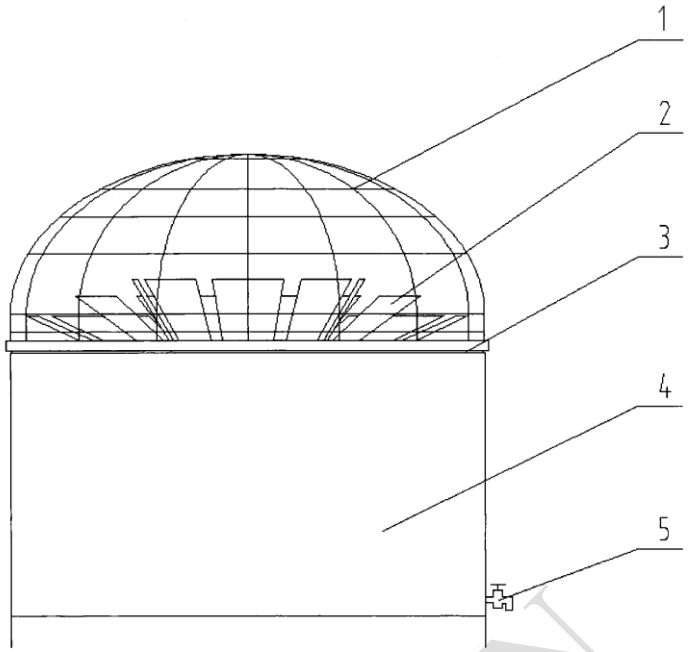
E03B-003/28

Title:

System of Water captation in high points [Machine Translation]

WPI Abstract:

The system has a cylindrical tower (1) fixed at an upper end of an extractor (2) by depending on ambient conditions, where diameter of the cylindrical tower is specified as 6 m. The extractor is provided with multiple helix parts. An inverted inner cone part is placed on an edge part of the cylindrical tower and connected with an open end part, where the inverted inner cone part is placed above a bottom end of the extractor. Electrical systems of the cylindrical tower are powered by using solar energy. Plates and solar cells are connected with photovoltaic cells.



Patent Number:

CN102839714	A	20121226	[CN102839714]
CN102839714	B	20140219	[CN102839714B]

Priority Nbr:
2012CN-0364528 20120926

Patent Assignee:
SHANGHAI WORTH GARDEN

Inventor:
FEI JUNHUA

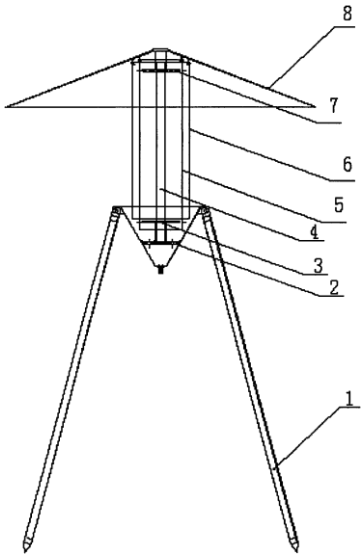
Intl Patent Class:
E03B-003/02
E03B-003/03
E03B-003/28

Title:
Rainwater and fog water collector

Abstract:
(CN102839714)
The invention provides a rainwater and fog water collector; the rainwater and fog water collector is characterized by comprising a water storing cylinder which is provided with a water saving bottom layer at the bottom; a faucet is arranged at the upper side of the water saving bottom layer on the side face of the water storing cylinder; an anti-fallen leaf mesh enclosure is arranged on the upper side of the water storing cylinder through a conical tray; an anti-dust filter screen is arranged in the middle of the conical tray; at least two layers of rainwater and fog water collecting plates are connected on the conical surface of the conical tray; a clearance is arranged between each rainwater plate and each fog water collecting plate; the adjacent rainwater and fog water collecting plates are arranged by staggered means; and the rainwater and fog water collecting plates are increased sequentially from the inner layer to the outer layer. According to the rainwater and fog water collector, the shortcomings of the prior art are overcome, and various falling water in the atmosphere of the natural environment is collected; and the efficiency is high.
(From CN102839714 A)

WPI Abstract:

The collector has a water storage barrel (4) that is provided with water saving bottom layer having a tap (5). A leaf net cover (1) is set on the water storage barrel through the tapered disc (3) having conical surface. The conical disc is provided with a dust-proof filter screen. The conical disc is connected with rainwater and fog collecting plate (2) comprising inner layer and outer layer.



Patent Number:

CN202099833 U 20120104 [CN202099833U]

Priority Nbr:

2011CN-U185910 20110603

Patent Assignee:

CHENGDU AODESEN AGRICULTURAL INVESTMENT

Inventor:

XIN WU

Intl Patent Class:

E03B-003/28

Title:

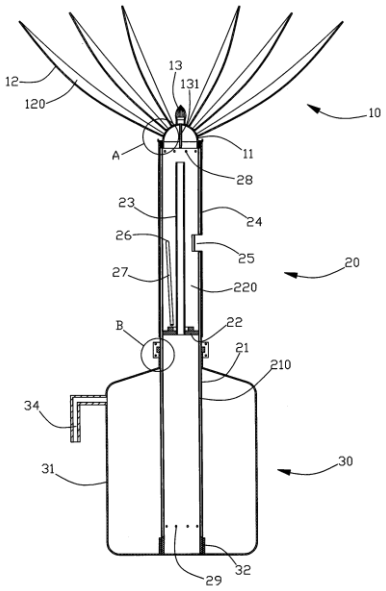
Fog condenser

Abstract:

(CN202099833U)
The utility model discloses a fog condenser, which relates to the technical field of ecological engineering, in particular to a fog condensing device. The fog condenser comprises support rods, a water collecting hopper, a first nut, an upright post, an inner curtain, an outer curtain, a second nut and a rain block, wherein three support rods are positioned undermost for supporting the entire device; the water collecting hopper has an inverted conical structure; the edge of an upper opening of the water collecting hopper is connected with the upper ends of the three support rods; the upright post is vertically arranged at a central position above the water collecting hopper; the lower end of the upright post is fixedly connected with a transverse beam inside the water collecting hopper; the rain block has an umbrella-shaped structure; the top end of the upright post is fixedly connected with the rain block; the cylindrical inner curtain is sleeved outside the upright post; the cylindrical outer curtain is sleeved outside the inner curtain; the upper ends of the outer curtain and the inner curtain are hung on a hanging hook below the rain block; and the lower ends of the outer curtain and the inner curtain extend into the water collecting hopper. The fog condenser is a device capable of collecting fog in the air, and the problem of insufficient water supply in certain regions is solved.

WPI Abstract:

The condenser has three supporting rods (1) located on a lowest part of a support device. An opening side of a water-collecting funnel (2) is connected with an upper end of each supporting rod. Vertical columns (4) are vertically installed in center of a water-collecting funnel. Top of each vertical column is connected with a rain-sheltering part (8) by a nut (7). Upper ends of an outer curtain (6) and an inner curtain (5) are hanged on the rain-sheltering part. Lower ends of the outer curtain and the inner curtain are extended to the water-collecting funnel.



Patent Number:

CN201314060 Y 20090923 [CN201314060U]

Priority Nbr:

2008CN-U229137 20081124

Patent Assignee:

WEIJUN ZHANG

Inventor:

WEIJUN ZHANG

Intl Patent Class:

E03B-003/00
E03B-003/28

Title:

Device for collecting moisture in air

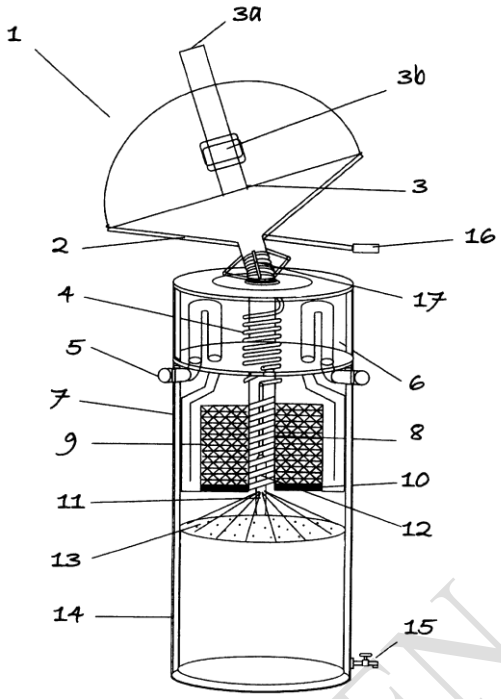
Abstract:

(CN201314060U)
A device for collecting moisture in the air comprises a water-collecting component, a water-purifying component and a water-storing component, wherein, the water-collecting component includes an upward convex semi-housing; water-collecting blades which are distributed in radial shapes are arranged on the surface of the semi-housing; a strip groove which obliquely extends is formed on one upward surface of the water-collecting blade; a water-collecting groove is formed at the periphery of the semi-housing; a water outlet pipe which extends downwards is arranged in the water-collecting groove; a filter screen is arranged on the water outlet pipe; the water-purifying component includes a cylindrical body with a sandwich formed on one side wall thereof; the cylindrical body is assembled below the periphery of the semi-housing; the water outlet pipe extends into the sandwich; the sandwich is filled with fine sands; water outlet holes are formed at the near-lower end parts of the inner side wall and the outer side wall of the sandwich; the water-storing component includes a water-storing bucket; the lower-half part of the cylindrical body is inserted in the water-storing bucket; and a sealing device is arranged between the mouth of the water-storing bucket and the cylindrical body. The device can collect the moisture like dews, fogs, rain water or the like in the air and provide water in daily life for people in water-deficient areas so as to alleviate water shortage problem.

WPI Abstract:

The device has a water collecting component provided with an up convex half shell whose surface is provided with water collecting leaves. An upper surface of the water collecting leaf is

formed with a lath groove. A surround edge of the half shell forms a water collecting groove. A cylindrical body is provided with a side wall forming an interlayer. The cylindrical body is assembled below the surround edge. A water outlet is inserted into the interlayer filled with fine sand. A water outlet hole is formed at a part close to a lower end of internal and external walls.



Patent Number:

US2005103615	A1	20050519	[US20050103615]
US2010263396	A1	20101021	[US20100263396]
US8196422	B2	20120612	[US8196422]

Priority Nbr:

2003US-P510155 20031014
2004US-0963646 20041014
2010US-0826448 20100629

Patent Assignee:

FREEDOM WATER

Inventor:

RITCHEY JONATHAN G

Intl Patent Class:

B01D-005/00
B67D-005/00
F24J-002/06
F24J-002/07
F25B-027/00
F25D-021/14

Title:

Atmospheric water collection device

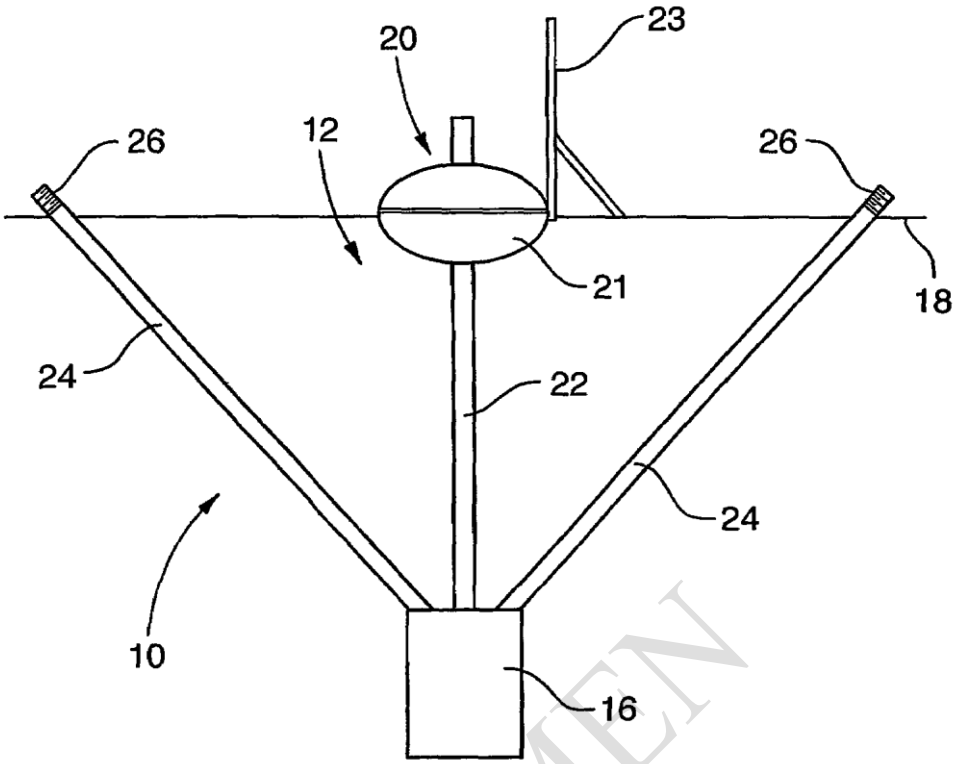
Abstract:

(US20050103615)
The present invention is directed at a solar powered heat exchange system preferably used to drive a water collection device, which condenses water vapour in atmospheric air to water. The device comprises means for drawing the atmospheric air into the device; means for condensing the moisture vapour in the atmospheric air into water; and means for collecting the water.

Object of Invention:

(US20050103615)

[0036] Generally, the present invention provides a method and system for collecting water from atmospheric air.
[0009] It is an object of the present invention to obviate or mitigate at least one disadvantage of previous atmospheric water collection devices. [0010] The present invention is directed to a device that extracts moisture vapour from atmospheric air for use as a fresh water source.
[0017] In a first aspect, the present invention provides a water collection device for condensing moisture vapor in atmospheric air into water, comprising means for drawing said atmospheric air into said device; means for condensing said moisture vapour in said atmospheric air into water; and means for collecting said water. [0018] In a further embodiment, there is provided a water collection device for collecting water from moisture vapour in atmospheric air comprising a solar heating device; a storage tank for collecting said water; a generator -- for heating the salt-ammonia mixture (or other appropriate mixture); a condenser coil -- for cooling in the condenser tank; an evaporator -- to collect distilled ammonia during generation; a means to draw air through the system; at least one air intake for taking in said atmospheric air into said device at one end and open to said storage tank and; wherein when said solar heating device and said at least one convection tube are heated up, a vacuum is created within said device which assists in drawing said atmospheric air into said device via said at least one condensation (intake) tube; wherein after said atmospheric air is drawn in, said air is cooled such that said water vapour within said air is condensed to water and collected in said st orage tank; and wherein un condensed air is then drawn through the systems by fans and returned to said atmospheric air. [0019] In further aspect, the present invention provides a device powered by the sun that utilizes a cooling system to assist a water creation process that may as well be installed in the ground that may as well use, a counter-flow heat exchanger(s) and the earth's variant temperatures to assist in the cooling process. [0020] In yet another aspect, there is provided an atmospheric water collection device for condensing moisture vapour in atmospheric air into water comprising at least one intake valve for receiving said atmospheric air; means for drawing said atmospheric air through said at least one intake valve; means for cooling and condensing said atmospheric air in said intake valves to water; an area for condensing said atmospheric air into water; and means for collecting said water.



Patent Number:

WO03104571	A1	20031218	[WO2003104571]
AU2003240324	A1	20031222	[AU2003240324]
US2006032493	A1	20060216	[US20060032493]
US7343754	B2	20080318	[US7343754]

Priority Nbr:

2002US-P385894 20020606
2003WO-CA00860 20030605
2004US-0516746 20041206

Patent Assignee:

FREEDOM WATER

Inventor:

RITCHEY JONATHAN G

Intl Patent Class:

B01D-005/00
C02F-001/14
E03B-003/00
E03B-003/28
F24J-002/08
F24J-002/10
F25B-027/00
F25D-023/00

Title:

Device for collecting atmospheric water

Abstract:

(US20060032493)

The present invention is directed at a water collection device which condenses water vapour in atmospheric air to water. The device comprises means for drawing the atmospheric air into the device; means for condensing the moisture vapour in the atmospheric air into water, and means for collecting the water.

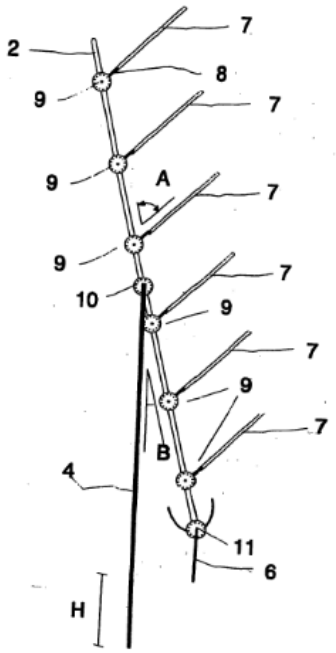
Object of Invention:

(US20060032493)

[0008] Therefore, there is provided an improved atmospheric water collection device which overcomes the disadvantages of the prior art.

[0010] The present invention is directed to a device that extracts moisture vapor from atmospheric air for use as a fresh water source.

[0015] In a first aspect, the present invention provides a water collection device for condensing moisture vapour in atmospheric air into water, comprising means for drawing the atmospheric air into the device; means for condensing the moisture vapour in the atmospheric air into water; and means for collecting the water. [0016] In a further embodiment, there is provided a water collection device for collecting water from moisture vapour in atmospheric air comprising a solar heating device; a storage tank for collecting the water; at least one convection tube, connected at one end to the solar heating device and at a second end to the storage tank; and at least one condensation tube for intaking the atmospheric air into the device at one end and connected to the storage tank at a second end; wherein when the solar heating device and the at least one convection tube are heated up, a vacuum is created within the device which assists in drawing the atmospheric air into the device via the at least one condensation tube; wherein after the atmospheric air is drawn in, the air is cooled in the at least one condensation tube such that the water vapour within the air is condensed to water and collects in the storage tank; and wherein un condensed air is then drawn up the convection tube by the vacuum and returned to the atmospheric air.



Patent Number:

ES1041062	U	19990616	[ES1041062U]
ES1041062	Y	19991101	[ES1041062U]
PT102351	A	20000331	[PT-102351]
PT9684	T	20010430	[PT---9684T]
PT9684	U	20021129	[PT---9684U]
OA11356	A	20031217	[OA--11356]

Priority Nbr:

1998ES-U002236 19980831

Patent Assignee:

CARLOS A SANCHEZ RECIO
MARIA IGNACIA DE LA MORENA
MORENA DE VEGA M IGNACIA
MORENA DE VEGA MARIA IGNACIA D
MORENA MARIA IGNACIA DE LA
RECIO CARLOS A SANCHEZ
SANCHEZ RECIO CARLOS A

Inventor:

SANCHEZ RECIO CARLOS A

Intl Patent Class:

E03B-003/00
E03B-003/02
E03B-003/28

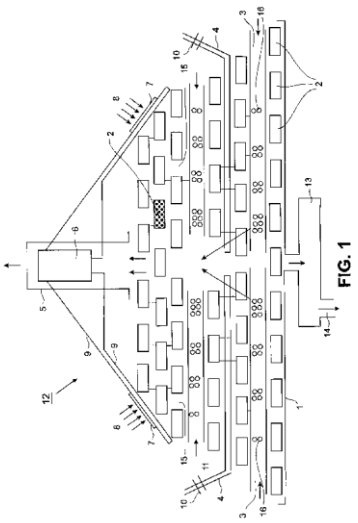
Title:

DEVICE FOR THE CAPTURE OF MICRODROPS OF FOG OR CRUSHES OR DROPS OF RAIN AND THEIR UNION FOR A LATER STORAGE. [Machine Translation]

Abstract:

(PT-102351)
Device comprising a moulding 2 that supports at least one net (network) 3 and, optionally, a series of shelves 7 formed in turn by a moulding integral with the moulding 2 and connected to the latter by straight bars 8, forming with said principal moulding 2 an angle of 30 degrees to 90 degrees, preferably 45 degrees, these secondary mouldings also supporting the corresponding net, the moulding 2 resting on straight lateral supports 4 which form an angle with the vertical of 0

degrees to 30 degrees, preferably 10 degrees, which angle may, optionally, by means of a fixing and rotation system, vary in order for its optimum value to be chosen and, in specific applications, maintaining the moulding horizontal in relation to the ground, which device includes, in the lower part of the moulding 2, and integral with it, a wedge 5 for collecting water with a sufficient slope for this to be able to flow, which, by means of conventional systems, enables it to be transported to a collector for utilization, the moulding 2 also having straight bearing supports 6 which support it on the bench 1 existing on the ground. <IMAGE>



Patent Number:

RU2131000	C1	19990527	[RU2131000]
WO9943997	A1	19990902	[WO9943997]
AU2877699	A	19990915	[AU9928776]
US6116034	A	20000912	[US6116034]

Priority Nbr:

1998RU-0104583 19980225
1999WO-US04108 19990225

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Intl Patent Class:

B01D-005/00
E03B-003/00
E03B-003/28
F25D-017/06

Title:

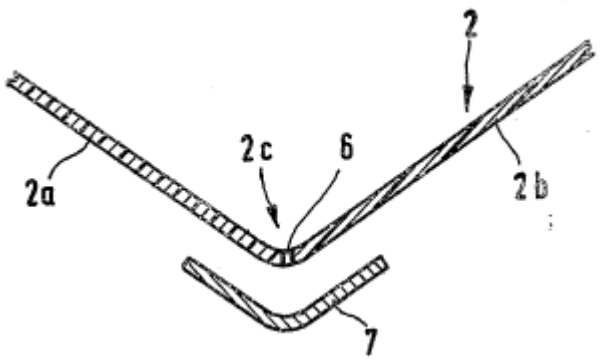
System for producing fresh water from atmospheric air

Abstract:

(US6116034)
A system for condensation and collection of atmospheric water is provided made up of a system having an aperture pipe at the top for airflow, a condensation material providing condensation surfaces within the system; openings, ducts or other spaces for conducting a flow of moisture-containing air from outside the system where it comes into contact with the condensation surfaces; and a water tank containing water heated during the daytime by the sun or by another heat source near the top of the system in the aperture pipe for heating surrounding air from which the water has been removed by condensation on the condensation surface, so that air flows out of the system through the aperture pipe at the top, drawing moisture-laden air from outside into the system. Heat transfer tubes extend into the system to transfer heat from within the system to the outside atmosphere when the temperature outside is less than that inside the system so that

the condensation surfaces and the air within the system cool, facilitating condensation. Condensed water is collected and removed for use without the requirement of further processing. No artificial energy source is required.

It is an object of the present invention to provide a system for producing fresh water from atmospheric air not requiring the use of electrical or other artificial energy.



Patent Number:

DE3633389 A1 19880414 [DE3633389]

Priority Nbr:

1986DE-3633389 19861001

Patent Assignee:

GERAEDTS WILFRIED

Inventor:

GERAEDTS WILFRIED

Intl Patent Class:

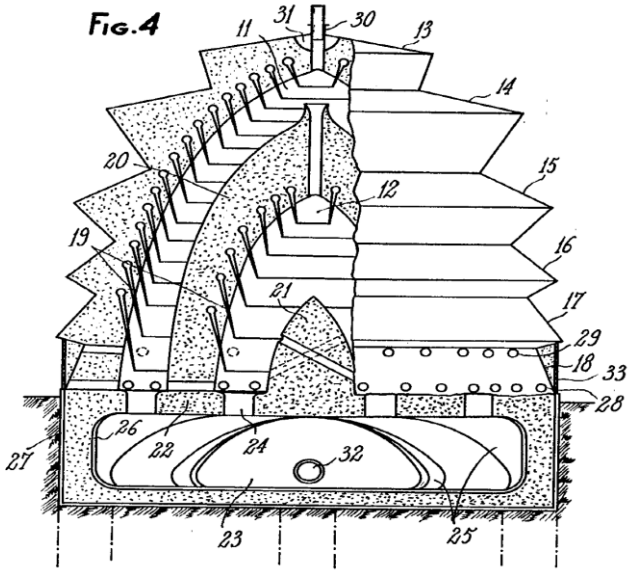
A01G-009/24
A01G-025/00
E03B-003/00
E03B-003/28

Title:

Apparatus for obtaining water from the atmosphere

Abstract:

(DE3633389)
The invention discloses an apparatus for obtaining water from the atmosphere, for example from fog, which can be used for ground irrigation. This apparatus has a translucent sheet which is held on a stable carrying frame, in a roof-like arrangement inclined with respect to the horizontal, at a distance above the ground to be irrigated. Water condensed on the sheet runs into water channels which are located beneath the lowest point of the sheet and in which the water is collected before it passes into the ground to be irrigated.



Patent Number:

FR1286601 A 19620309 [FR1286601]

Priority Nbr:

1957FR-0734897 19570326

Inventor:

BLANCHON ETIENNE MARIE JOSEPH; LANGLAIS LEON RENE

Title:

Dispositif de condensation ou d'évaporation

Object of invention :

L'invention concerne :

1. Un dispositif permettant la condensation ou l'évaporation de l'eau de l'atmosphère ou de l'eau du sous-sol, caractérisé en ce qu'on réalise l'adsorption ou la désorption de l'humidité hygroscopique sur de la matière poreuse constituée par un mélange de constituants tels que meulière calcaire, sable criblé, ponce brisée criblée, chaux non hydraulique, par exemple, qui sont entre eux dans des proportions telles qu'ils permettent le cheminement capillaire de l'eau à l'intérieur de la matière poreuse, cette adsorption ou cette désorption étant provoquée par la différence de conductivité thermique entre le milieu ambiant et l'intérieur du dispositif, qui détermine la condensation de l'eau quel que soit le sens du cheminement capillaire de l'eau, cette adsorption ou cette désorption étant également fonction des différences de température du dispositif par rapport au milieu ambiant;

2. Une forme de réalisation du dispositif suivant 1[deg], dans laquelle le dispositif affecte la forme d'un pieu cylindrique par exemple, en matière poreuse dans laquelle sont ménagées des voies de passage préférentielles susceptibles d'accélérer le pompage de l'eau telles que drain central et drains latéraux;

3. Une forme de réalisation du dispositif suivant

1. et 2[deg], destinée plus particulièrement à la condensation de l'eau de l'atmosphère dans laquelle le pieu comporte à sa partie supérieure une cuvette d'amorçage qui offre avec ses deux semicirconférences, le maximum de surface d'échange thermique pour le minimum de volume, à sa partie intérieure des canaux d'écoulement de l'eau condensée dans la masse poreuse, vers un réservoir pratiqué dans le sous,sol, permettant le stockage de l'eau en vue de sa distribution ultérieure rationnelle;

4. Une forme de réalisation du dispositif suivant 1[deg], dans laquelle le pieu, de forme ogivale, est multicellulaire, des blocs de matière poreuse étant intercalés entre les couches multicellulaires poreuses et comporte, sur sa surface, des redents, de valeur angulaire variable suivant la région géographique où le dispositif est appelé à être implanté, qui ont pour rôle d'assurer le maximum de captation thermique en tenant compte des positions azimutales du soleil, des chicanes, qui accroissent la surface d'échange thermique par convexion en rayonnant vers l'intérieur des cellules l'énergie thermique accumulée par les redents, des trous permettant l'écoulement de l'eau condensée, disposés de telle sorte et en tel nombre qu'il n'y ait pas de différence de pression entre le réservoir et les cellules, des orifices situés aux parties supérieure dans la cuvette d'amorçage, et inférieure du pieu, destinée à régler la pénétration de l'air dans ie dispositif;

5. Une forme de réalisation du dispositif suivant 1[deg], dans laquelle le pieu est constitué par des lames minces en matière poreuse excellente conductrice thermique, qui sont en contact avec l'atmosphère, et qui se terminent dans le sol dans une masse en une matière très mauvaise conductrice de la chaleur qui s'insère dans un bloc de soutènement, en ciment par exemple, ce pieu étant consolidé à la surface du sol au moyen d'un scellement d'étanchéité, et le cheminement de l'eau du soussol à l'atmosphère étant favorisé par l'insertion dans le pieu d'éléments d'armature, moyens conducteurs thermiques qui assurent la liaison entre le milieu souterrain à basse température et le milieu extérieur à température élevée.