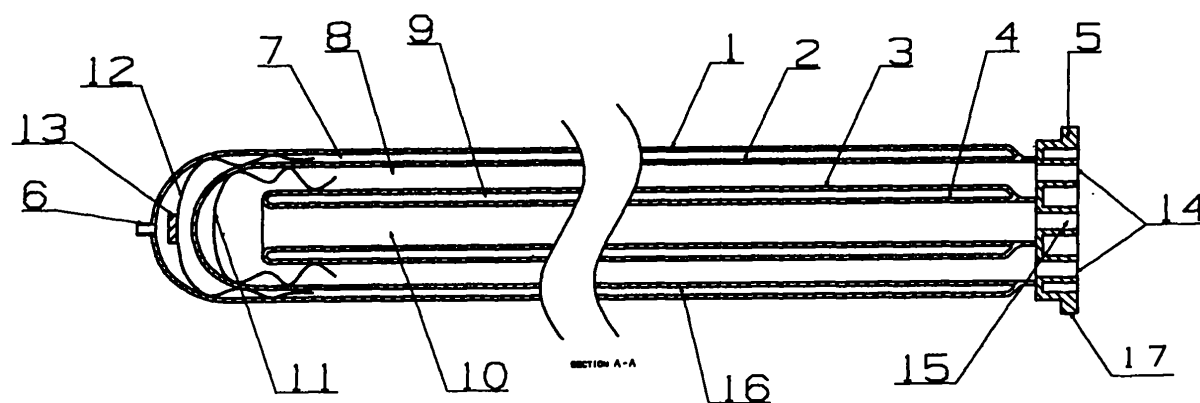


14 Documents

Publication numbers	Title	Current assignees
CN101788198 A	Full-glass dual-channel vacuum tube heat collector	LI YUJING
EP1706678 A1	Evacuatable flat panel solar collector	EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH CERN
EP2955460 A1	Heat power generating system and technique	ZHONGYING CHANGJIANG INTERNATIONAL NEW ENERGY INVESTMENT
CN202973625U	Flat-plate solar collector provided with drying airbag	QINHUANGDAO XINMEIYUAN AUTOMATIC CONTROL EQUIPMENT
CN201368613U	Solar heat collector with planar receiving of direct lights	ZHU SILIN
CN2921715U	Multifunction isolating tube in solar energy water heater vacuum heat collecting pipe	YANG TIANMIN
US4091793 A	Solar collector	PHILIPS
CN1851349 A	Multifunctional isolating pipe for solar water heater vacuum heat-collecting pipe	YANG TIANMIN
CN102607192 A	Wall-mounted solar water heater and manufacturing method of solar heat accumulator	ZHANG YINGHUA
EP2669514 A1	Solar heat storage and high temperature gas generating system with working medium being flowing sand	CHEN YUQI
CN107576079 A	Light-condensing solar heat collection pipe	BEIJING XURI JINGYANG SOLAR ENERGY TECHNOLOGY
CN102364016 A	Self-air-supply ash-filtering cooling silencing closable fireproof tall building with solar warming water heater	GUO HOUDE
JP2010165355 A	World's newest public project countermeasure device for full payment of debt exceeding nine-hundred trillion yen of nation	TARUNO KAZUO
DE3732262 A1	Plant, known as high-security large waste tip and large natural energy plant, for dressing and ultimate disposal of refuse materials including abandoned waste dumps, for receiving wind energy plants and for long-term hothouse use	MEYER GERHARD

Images**Publication numbers**

CN101788198

CN101788198

Publication kind codes

B

A

Publication dates

2011-11-23

2010-07-28

Earliest priority date

2010-03-10

Title

(CN101788198B)

Full-glass dual-channel vacuum tube heat collector

Abstract

(CN101788198)

The invention discloses a full-glass dual-channel vacuum tube heat collector, which comprises an outer glass tube, a heat-absorbing glass tube, an isolating glass tube and an inner glass tube. The full-glass dual-channel vacuum tube heat collector is characterized in that: the tops of the outer glass tube, the heat-absorbing glass tube and the isolating glass tube are smelted and sealed on a glass flange at high temperature and a cavity among the outer glass tube, the heat-absorbing glass tube and the glass flange is vacuumized to form a vacuum cavity; an interlayer between the heat-absorbing glass tube and the isolating glass tube forms a heated channel and the interlayer between the isolating glass tube and the inner glass tube forms an insulating layer; the outer ring of the glass flange is provided with an outlet which is communicated with the heated channel and the middle of the glass flange is provided with an inlet which is communicated with an inflow channel. The full-glass dual-channel vacuum tube heat collector combines two operation modes of natural circulation and forced circulation, can be widely applied to the integration of building solar energy, can be applied to the solar energy power generation and has the advantages of novelty, simple operation, low fault and low cost.

Inventors

WU YANPIN

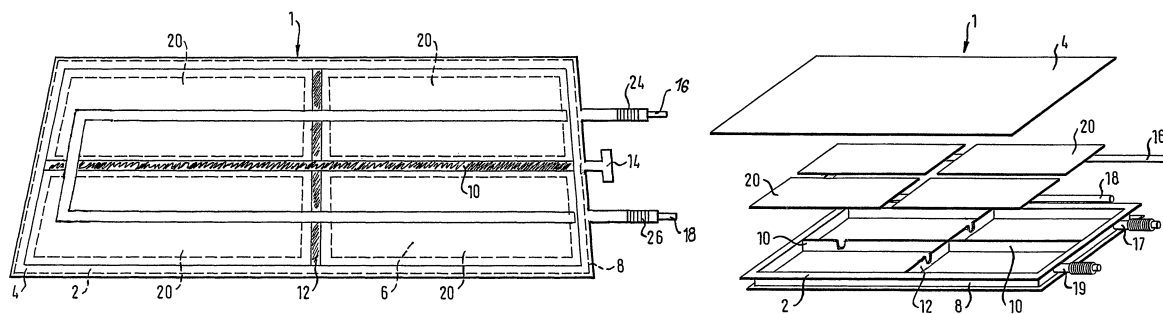
WU HAO

LI YUJIN

Latest standardized assignees - inventors removed

LI YUJING

Images



Publication numbers

BRPI0414823

CY1106956

CN1856683

IN244234

US7810491

KR100965638

JP4511559

AU2004315226

CA2534753

RU2348869

DE602004008116

ES2291846

RU2006113548

PT1706678

DE602004008116

AT369530

EP1706678

IN0376/KOLNP/2006

JP2007518957

ECSP066723

US20070039611

KR20070017293

BRPI0414823

CN1856683

EP1706678

AU2004315226

CA2534753

WO2005/075900

Publication kind codes

B1

T1

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B2

B1

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B2

C

C2
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T3
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Publication dates

2014-09-16
2012-09-26
2011-07-06
2010-11-26
2010-10-12
2010-06-23
2010-05-14
2009-12-10
2009-12-01
2009-03-10
2008-04-24
2008-03-01
2008-02-27
2007-11-19
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2007-08-15
2007-08-08
2007-08-03
2007-07-12
2007-02-28
2007-02-22
2007-02-09
2006-11-14
2006-11-01
2006-10-04
2005-08-18
2005-08-18
2005-08-18

Earliest priority date

2004-01-22

Title

(EP1706678)

Evacuatable flat panel solar collector

Abstract

(EP1706678)

The present invention relates to an evacuatable flat panel solar collector (1) wherein the transparent planar wall (4) and the housing (2) are sealed by a soft metal ribbon (32) which is soft soldered at least with a first portion (34) to the housing (2) and at least with a second portion (36) to a metallized area of the transparent planar wall (4). The present invention also relates to a method for the preparation of said flat panel solar collectors (1) as well as to a flat panel solar collector system (56) comprising said flat panel solar collector (1) and at least one external mirror (54).

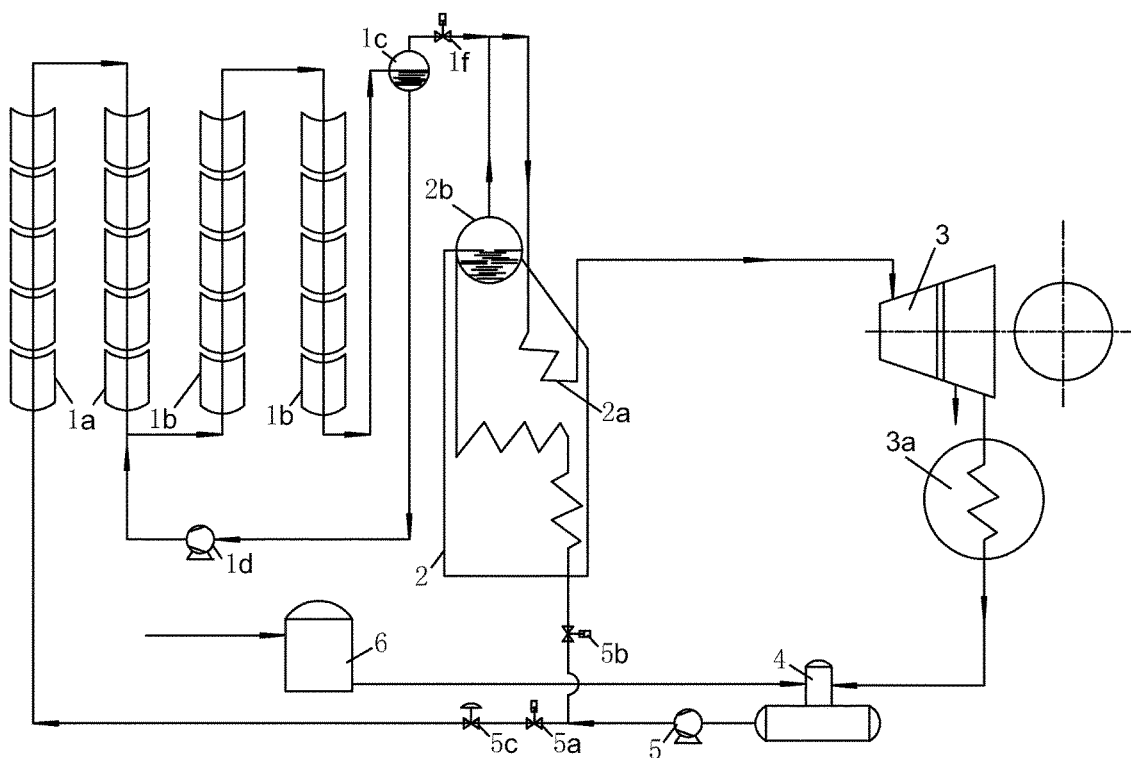
Inventors

BENVENUTI CRISTOFORO

Latest standardized assignees - inventors removed

EUROPEAN ORGANIZATION F OR NUCLEAR RESEARCH CERN

Family 3/14 - FAMPAT - ©Questel

Images**Publication numbers**

MX360583

HUE036333

SI2955460

LT2955460

DK2955460

US9897077

EP2955460

ZA201506506

KR101788730

RU2627613

BR112015018759

RU2015137804

AU2014214382

JP6059824

EP2955460

MX2015010148

IN2209/MUMNP/2015

JP2016505129

VN45049

EP2955460

US20150337811

KR20150110676

SG11201506084Y

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BR112015018759

CN103115445

CA2899966

WO2014/121711

CN103115445

Publication kind codes

B

T2

T1

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Publication dates

2018-11-07
2018-07-30
2018-05-31
2018-04-10
2018-03-26
2018-02-20
2017-12-27
2017-11-29
2017-11-15
2017-08-09
2017-07-18
2017-03-13
2017-01-12
2016-12-16
2016-11-02
2016-05-31
2016-05-27
2016-02-18
2015-12-25
2015-12-16
2015-11-26
2015-10-02
2015-09-29
2015-09-24
2015-08-18
2014-09-24
2014-08-14
2014-08-14
2013-05-22

Earliest priority date

2013-02-05

Title

(EP2955460)

Heat power generating system and technique

Abstract

(EP2955460)

Disclosed is a **solar** energy automatic soaking and **heat**-collecting tube, comprising a **glass** tube (1b2) and an absorption tube (1b3) coated with a **heat**-absorbing layer sheathed therein, a vacuum existing between the **glass** tube (1b2) and the absorption tube (b3). A baffle plate (b4) capable of making fluid in the absorption tube (b3) alternately reverse and flow up and down is provided in an inner chamber of the absorption tube (b3), the partition plate (b4) being helical in shape and being fixed in the absorption tube (b3). Also disclosed is a **heat** power generating system and technique using complementary light and **heat** power generation, preventing a **solar** energy complementary light and **heat** power station from being affected by the weather, and maintaining stable power generation when it is night or there is not sufficient sunlight.

Inventors

CHEN YILONG

YANG QINGPING

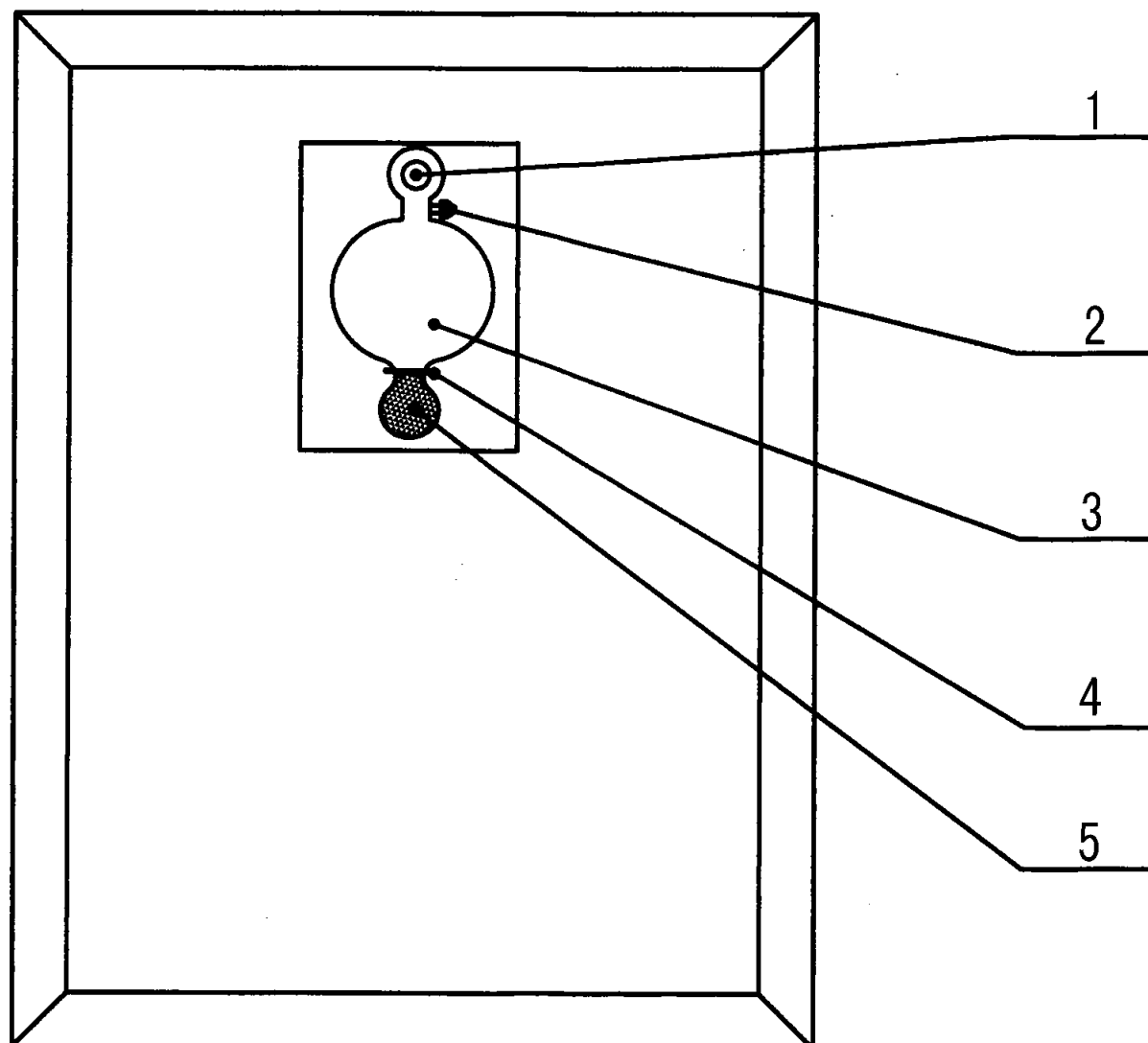
ZHANG YANFENG

Latest standardized assignees - inventors removed

ZHONGYING CHANGJIANG INTERNATIONAL NEW ENERGY INVESTMENT

Family 4/14 - FAMPAT - ©Questel

Images



Publication numbers

CN202973625

Publication kind codes

U

Publication dates

2013-06-05

Earliest priority date

2012-12-11

Title

(CN202973625U)

Flat-plate solar collector provided with drying airbag

Abstract

(CN202973625)

The utility model discloses a flat-plate solar collector provided with a drying airbag. The flat-plate solar collector comprises the airbag, drying agents are added into the airbag, and an air exhausting needle valve is installed at an opening of the airbag. The flat-plate solar collector further comprises a flat-plate solar collector back plate which is provided with a round hole, and the flat-plate solar collector back plate is connected with the airbag into a sealed whole through the round hole. In the sunshine, the inside temperature of the flat-plate solar collector is increased, and expanded air can flow into the airbag

through the round hole in the flat-plate **solar collector** back plate and is processed through the drying agents. When the temperature is decreased, the air flowing into the airbag and processed through the drying agents flows back into the inside a cavity of the **collector**, the problem that the cavity inside the **collector** is directly communicated with outside air is resolved thoroughly, and the purpose that humid outside air is prevented from entering the inside of the **collector** to cause moisture condensation and fogging is achieved. In addition, the inside of the flat-plate **solar collector** is completely separated from the air, convection cannot occur, the transparency of **glass** can be increased, service life of a coated **heat** absorption plate core can be prolonged, and **heat** collecting efficiency of a flat-plate water heater is improved.

Inventors

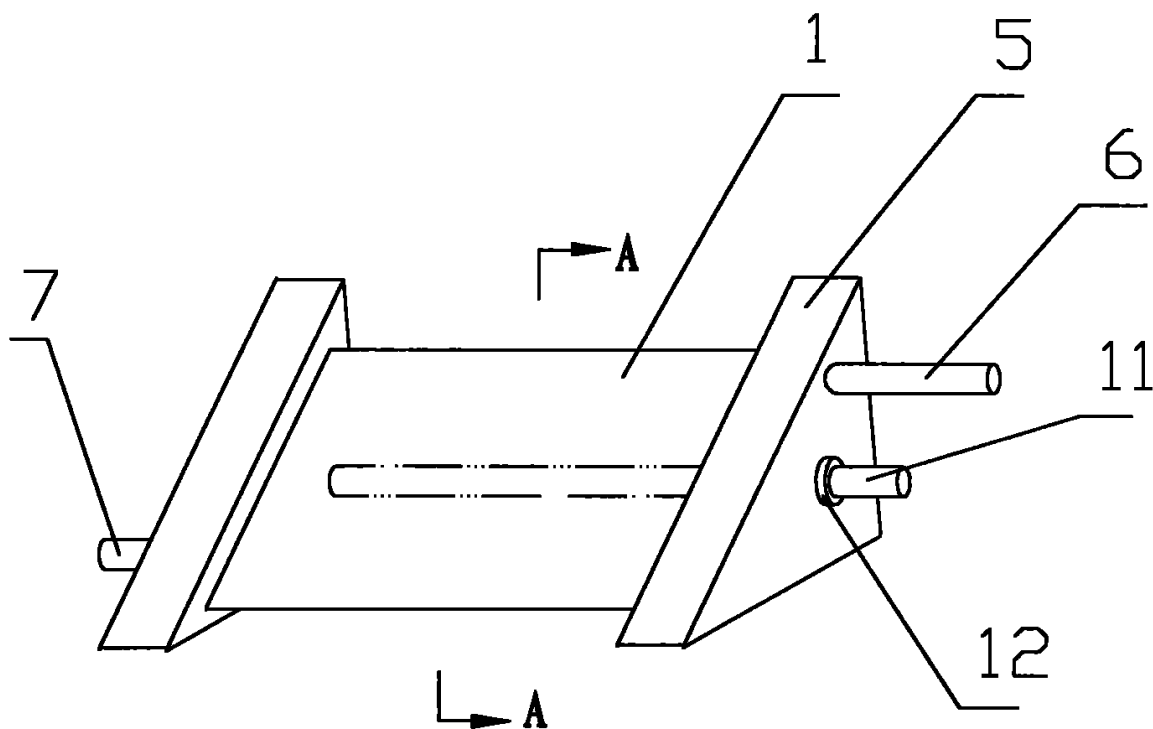
DU JIANJUN

Latest standardized assignees - inventors removed

QINHUANGDAO XINMEIYUAN AUTOMATIC CONTROL EQUIPMENT

Family 5/14 - FAMPAT - ©Questel

Images



Publication numbers

CN201368613

Publication kind codes

Y

Publication dates

2009-12-23

Earliest priority date

2009-02-27

Title

(CN201368613U)

Solar heat collector with planar receiving of direct lights

Abstract

(CN201368613)

The utility model discloses a **solar heat collector** with planar receiving of direct lights, which is characterized in that the **solar heat collector** consists of an outer-layer triangular **glass** tube (1) and an inner-layer triangular **glass** tube (2), a triangular **isolating** seal gland (3) is arranged at an end inside an interlayer cavity between the inner-layer and the outer-layer

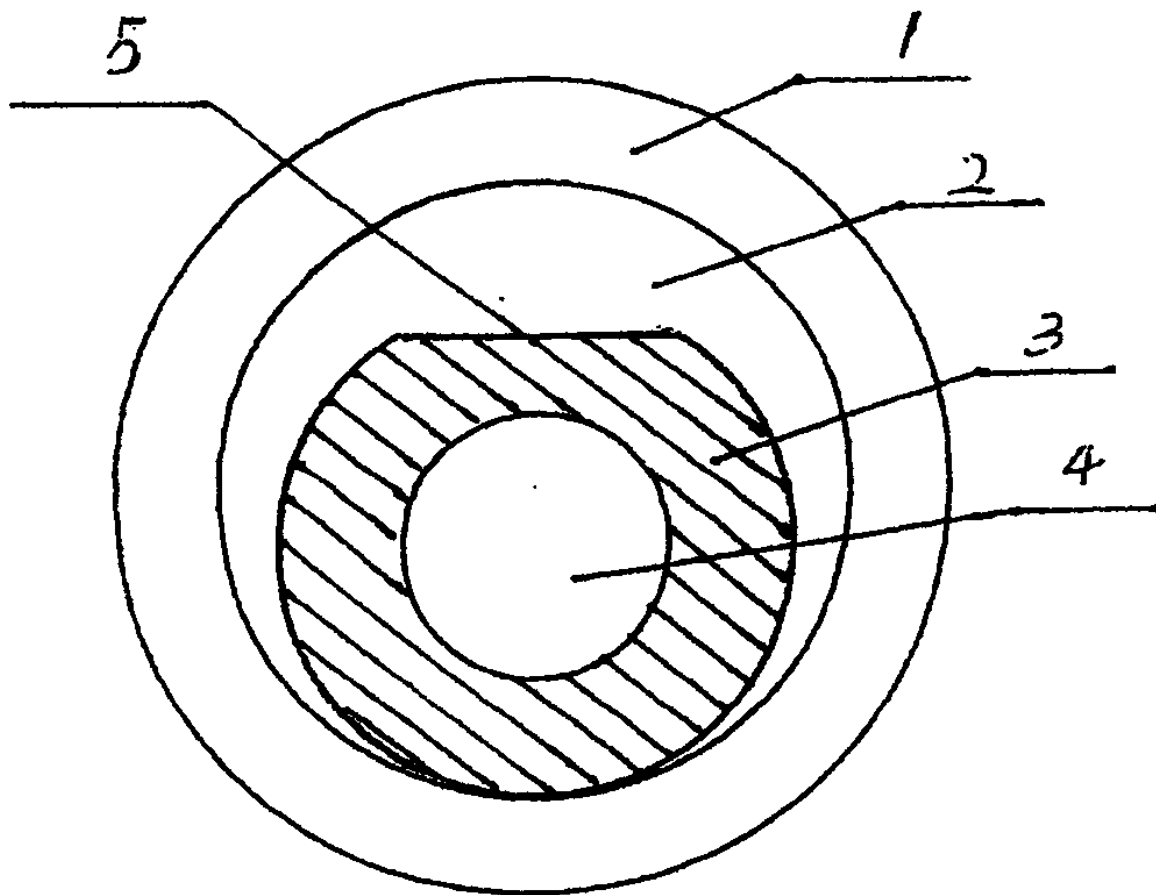
triangular glass tubes (2 and 1), a black endothermic film (4) is coated on a lateral wall of a sunny slope of the inner-layer triangular glass tube (2), triangular seal covers (5) are arranged at ends of the inner-layer and the outer-layer triangular glass tubes (2 and 1), an inlet pipe nozzle (6) is arranged on the triangular seal cover (5) at one end, and an outlet pipe nozzle (7) is arranged on the triangular seal cover (5) at the other end. As solar rays can irradiate directly onto a planar receiving surface, the solar heat collector with planar receiving of direct lights can effectively increase the light receiving area, can remarkably improve the utilization rate of solar heat conversion, and can be applicable to devices with larger heat consumption, particularly village bathrooms.

Inventors

ZHU LIHUA

ZHU SILIN

Family 6/14 - FAMPAT - ©Questel

Images**Publication numbers**

CN2921715

Publication kind codes

Y

Publication dates

2007-07-11

Earliest priority date

2006-06-08

Title

(CN2921715U)

Multifunction isolating tube in solar energy water heater vacuum heat collecting pipe

Abstract

(CN2921715)

The utility model discloses a multifunction isolating tube in solar energy water heater vacuum heat collecting pipe, which is

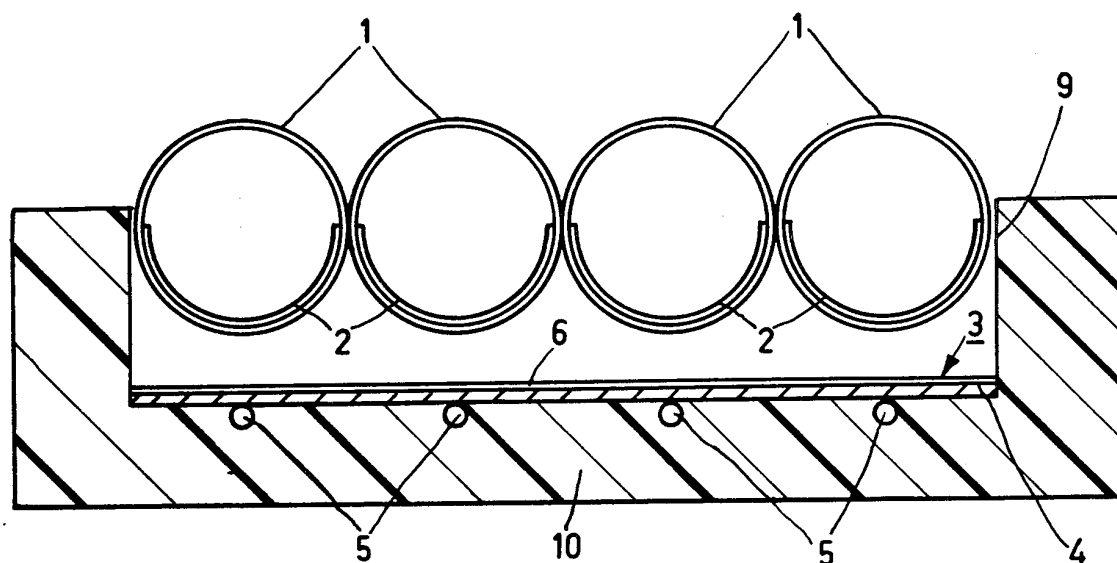
a pollution-free water temperature-resistant heavy-wall tube made of hot water pipe material such as PPR or glass and is radially inserted into the heat collecting pipe. The utility model is characterized in that: due to temperature difference, the cold water in the isolating tube and the hot water in the heat collecting pipe are not syncretic and begin convective circulation from the bottom of the heat collecting pipe to increase heat collecting efficiency; the volume of the isolating tube body occupies the impound volume inside the heat collecting pipe, thereby reducing both pondage in the heat collecting pipe and heat loss; when water temperature in the heat collecting pipe is lower than that in the isolating tube at winter night, reverse microcirculation can be generated to reduce frost cracking probability of the heat collecting pipe; in addition, the isolating tube and the heat collecting pipe are of split-type combination and are easy for unpicking and cleaning. The utility model is suitable for all in-line compact-type impounding all-glass vacuum heat collecting pipe solar energy water heaters.

Inventors

YANG TIANMIN

Family 7/14 - FAMPAT - ©Questel

Images



Publication numbers

FR2312000

JP975877

CA1063463

JPS5410730

GB1532685

US4091793

FR2312000

JPS51140248

DE2522160

SE7605492

Publication kind codes

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A

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1982-02-12

1979-10-30

1979-10-02

1979-05-09

1978-11-22

1978-05-30

1976-12-17

1976-12-03

1976-11-25

1976-11-18

Earliest priority date

1975-05-17

Title

(US4091793)

Solar collector

Abstract

(US4091793)

A **solar collector** comprising an absorber and a **heat**-insulating transparent cover which consists of a number of sealed and evacuated **glass** tubes adjacently arranged in contact with each other, at least the lower half of the inner surface of each **glass** tube being provided with an infrared-reflecting layer.

Inventors

HERMANN WILHELM

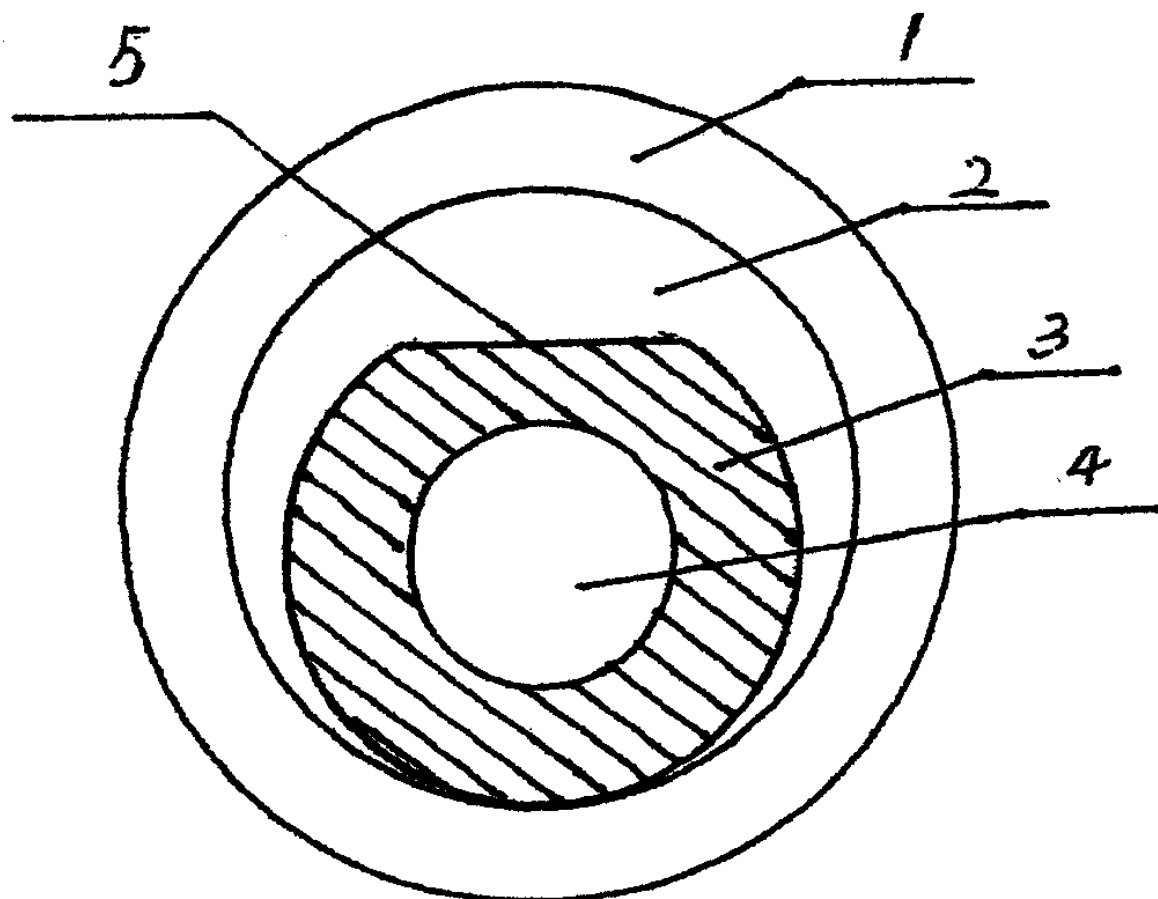
HORSTER HORST

Latest standardized assignees - inventors removed

PHILIPS

Family 8/14 - FAMPAT - ©Questel

Images

**Publication numbers**

CN1851349

Publication kind codes

A

Publication dates

2006-10-25

Earliest priority date

2006-04-25

Title

(CN1851349)

Multifunctional **isolating** pipe for **solar** water heater vacuum **heat**-collecting pipe**Abstract**

(CN1851349)

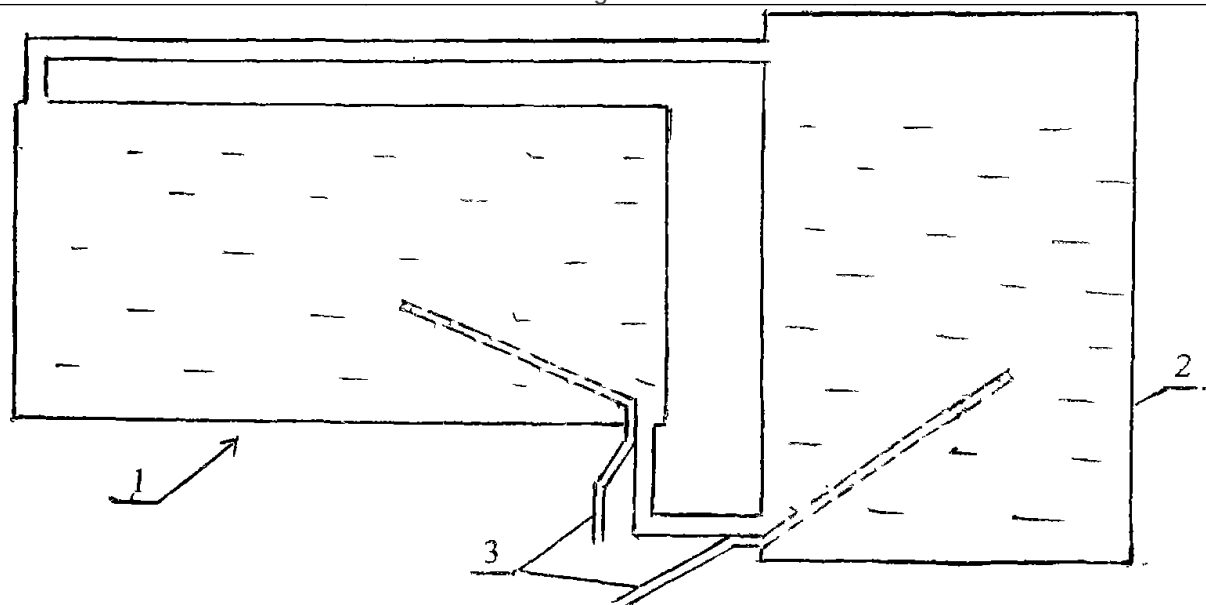
The invention discloses multifunction insulating tube used in **solar** water heater vacuum **heat** collection tube. It is made of PPR hot water pipe material or **glass**. It is cut into **heat** collection tube along **radial** direction. And its sectional area is 45 percent of the tube. They are combined as fission and easy to clean. It can be used in all vertical cutting compact type full **glass** vacuum **heat** collection tube **solar** water heaters.

Inventors

YANG TIANMIN

Family 9/14 - FAMPAT - ©Questel

Images

**Publication numbers**

CN102607192

CN102607192

Publication kind codes

B

A

Publication dates

2014-09-24

2012-07-25

Earliest priority date

2012-03-27

Title

(CN102607192B)

Wall-mounted solar water heater and manufacturing method of solar heat accumulator

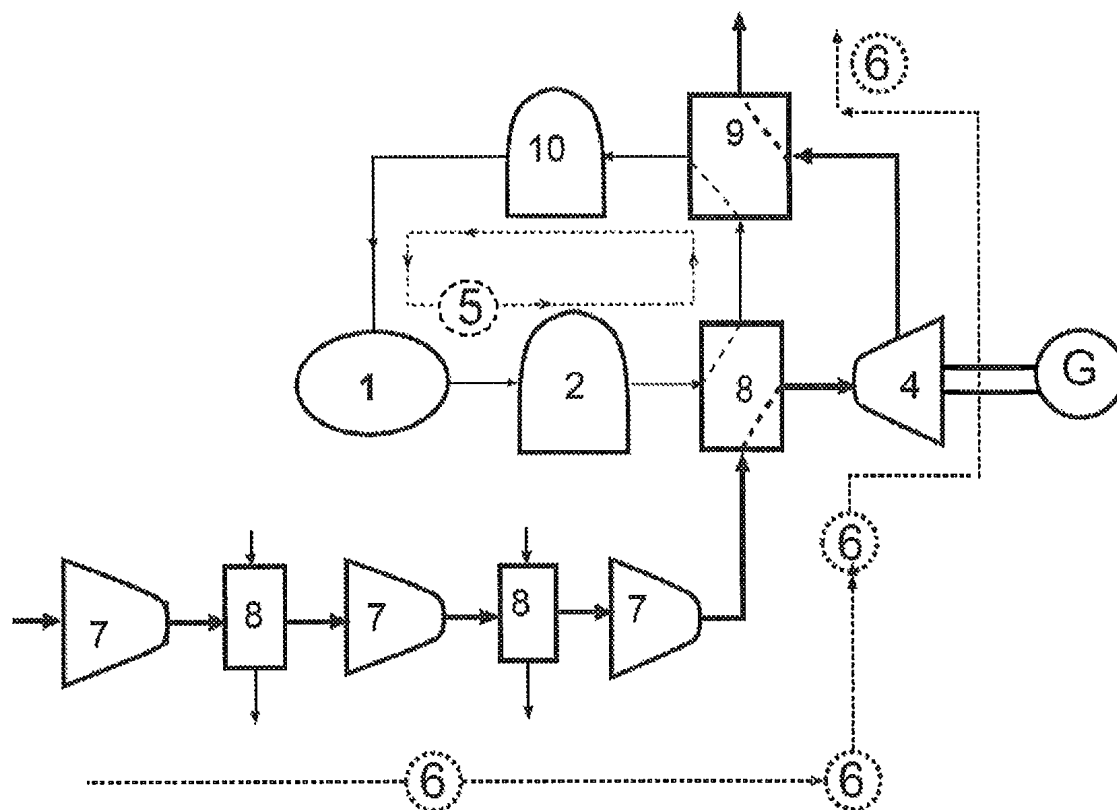
Abstract

(CN102607192)

The patent refers to the field of 'production or use of heat'. The invention discloses a wall-mounted solar water heater. The outer surface of an inner glass tank of a glass-panel solar heat accumulator is flat and smooth, many isometric conical projections are uniformly distributed on the front panel of an outer glass casing and the inner surface of a back panel to be used as supporting points, and the inner glass tank is surrounded inside the outer glass casing. A metal heat absorbing film is plated on the front panel of the inner glass tank of the glass-panel solar heat accumulator and the inner surface of the back panel, and the lateral side of the glass-panel solar heat accumulator is provided with a water inlet and a water outlet. After air in the outer glass casing and the inner glass tank is sucked out, the conical projections on the front panel of the outer glass casing and the inner surface of the back panel press on the outer surfaces of the front panel and the back panel of the inner glass tank respectively. The lateral sides of the inner glass tank and the outer glass casing are semi-arc glass plates and no supporting points are located between the inner glass tank and the outer glass casing, so that the inner glass tank has a displacement space. Further, the solar heat accumulator and a water tank can be protected from being damaged by expansion during freezing due to the fact that a safety valve or anti-explosion rubber pipe are mounted on the non-bearing heat accumulator and the water tank.

Inventors

ZHANG YINGHUA

**Publication numbers**

CN103392068

EP2669514

US20140026883

EP2669514

CN103392068

WO2012/100438

Publication kind codes

B

A4

A1

A1

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A1

Publication dates

2016-12-14

2015-05-20

2014-01-30

2013-12-04

2013-11-13

2012-08-02

Earliest priority date

2011-01-30

Title

(EP2669514)

Solar heat storage and high temperature gas generating system with working medium being flowing sand**Abstract**

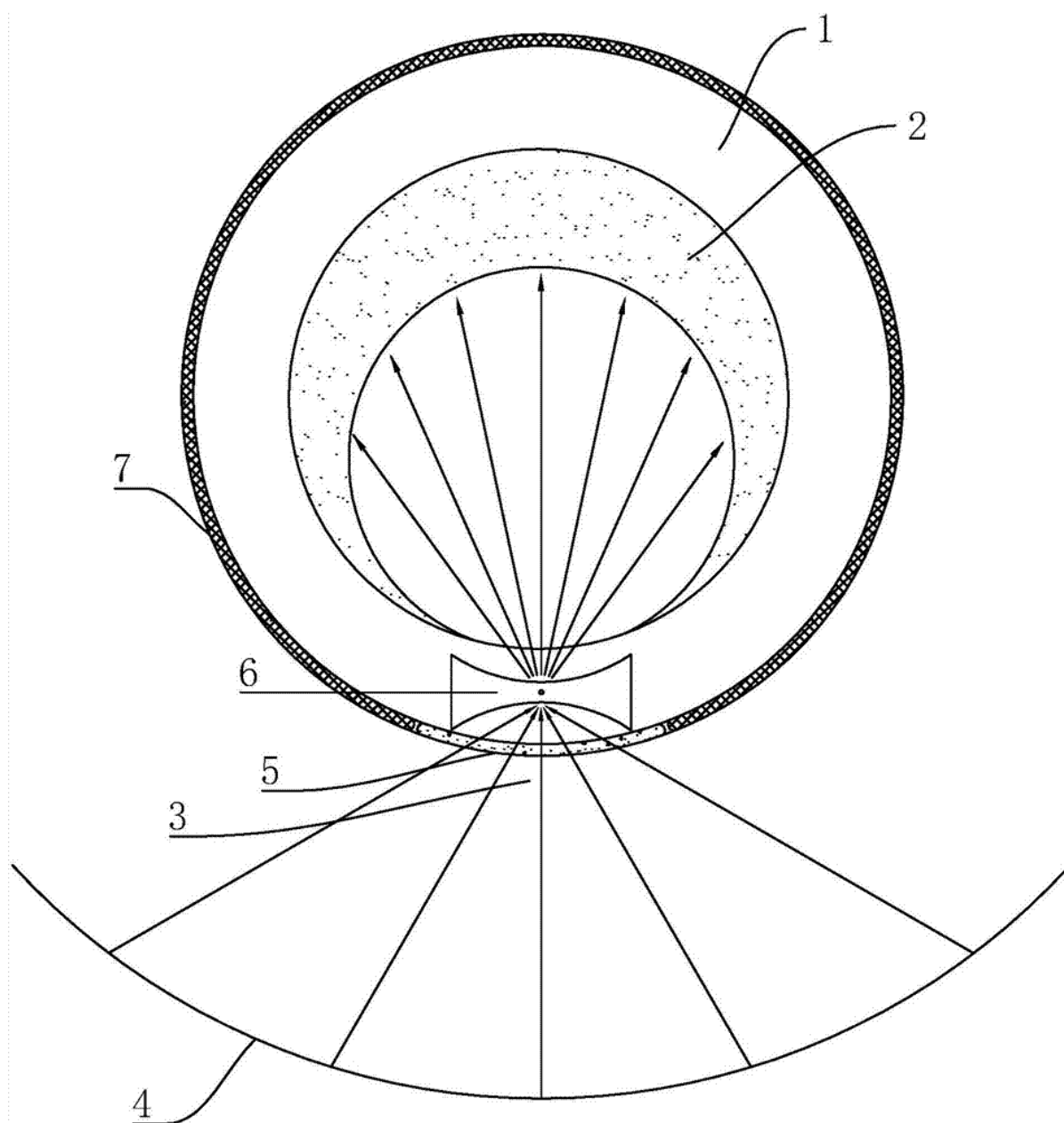
(EP2669514)

A **solar heat** storage and high temperature gas generating system comprises a sun-tracking light concentrating device (1), a **heat** storage tank (2) and a **heat exchange** device (3), with the working medium being flowing sand (5). The flowing sand (5) is heated by the sun-tracking light concentrating device (1), and is transported into the **heat** storage tank (2). The flowing sand (5) is exported from the **heat** storage tank (2) steadily, thereby transferring **heat** to the high pressure gas or liquid (6) which is to be heated in the **heat exchange** device (3) and generating high temperature and pressure gas. The system has the advantages of good **heat** storage effect, large **heat** storage volume, high **heat exchange** efficiency and low operation cost. (Fig. 1)

Inventors

CHEN YUQI

Family 11/14 - FAMPAT - ©Questel

Images**Publication numbers**

CN107576079

Publication kind codes

A

Publication dates

2018-01-12

Earliest priority date

2016-06-30

Title

(CN107576079)

Light-condensing solar heat collection pipe

Abstract

(CN107576079)

The invention discloses a light-condensing solar heat collection pipe. The technical scheme keys are that the light-condensing solar heat collection pipe has a coating stainless steel tube; the coating stainless steel tube is sleeved by a coating borosilicate glass tube; stainless steel sealing heads sleeve two ends of the coating stainless steel tube; an outer wall of the coating stainless steel tube is in sealing connection with the stainless steel sealing heads; the coating borosilicate glass tube is slidingly connected to the stainless steel sealing heads; the stainless steel sealing heads are sleeved with high temperature resistant silicone rubber compensation sleeves; two ends of the high temperature resistant silicone rubber compensation sleeves are in sealing connection with the coating borosilicate glass tube and the stainless steel sealing heads respectively; a vacuum chamber for isolating heat is defined by the coating stainless steel tube, the coating borosilicate glass tube, and the stainless steel sealing heads. The heat collection pipe adopts the high temperature resistant silicone rubber compensation sleeves which are low in price, can avoid stress damage, adopts welding and binding sealing, and is high in reliability.

Inventors

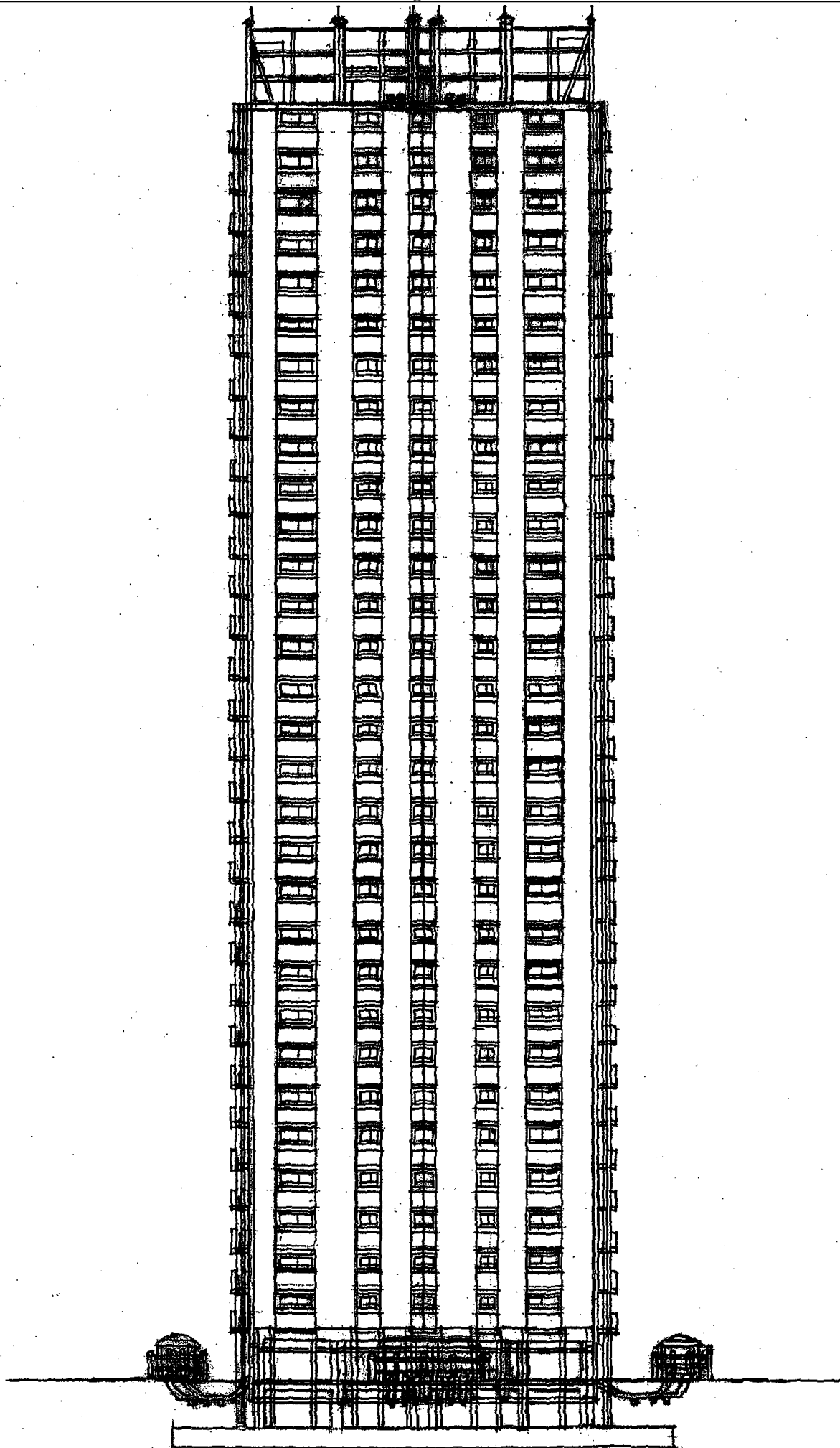
GAO QINGBO

Latest standardized assignees - inventors removed

BEIJING XURI JINGYANG SOLAR ENERGY TECHNOLOGY

Family 12/14 - FAMPAT - ©Questel

Images



CN102364016

CN102364016

Publication kind codes

B

A

Publication dates

2014-02-12

2012-02-29

Earliest priority date

2011-07-23

Title

(CN102364016B)

Self-air-supply ash-filtering cooling silencing closable fireproof tall building with solar warming water heater

Abstract

(CN102364016)

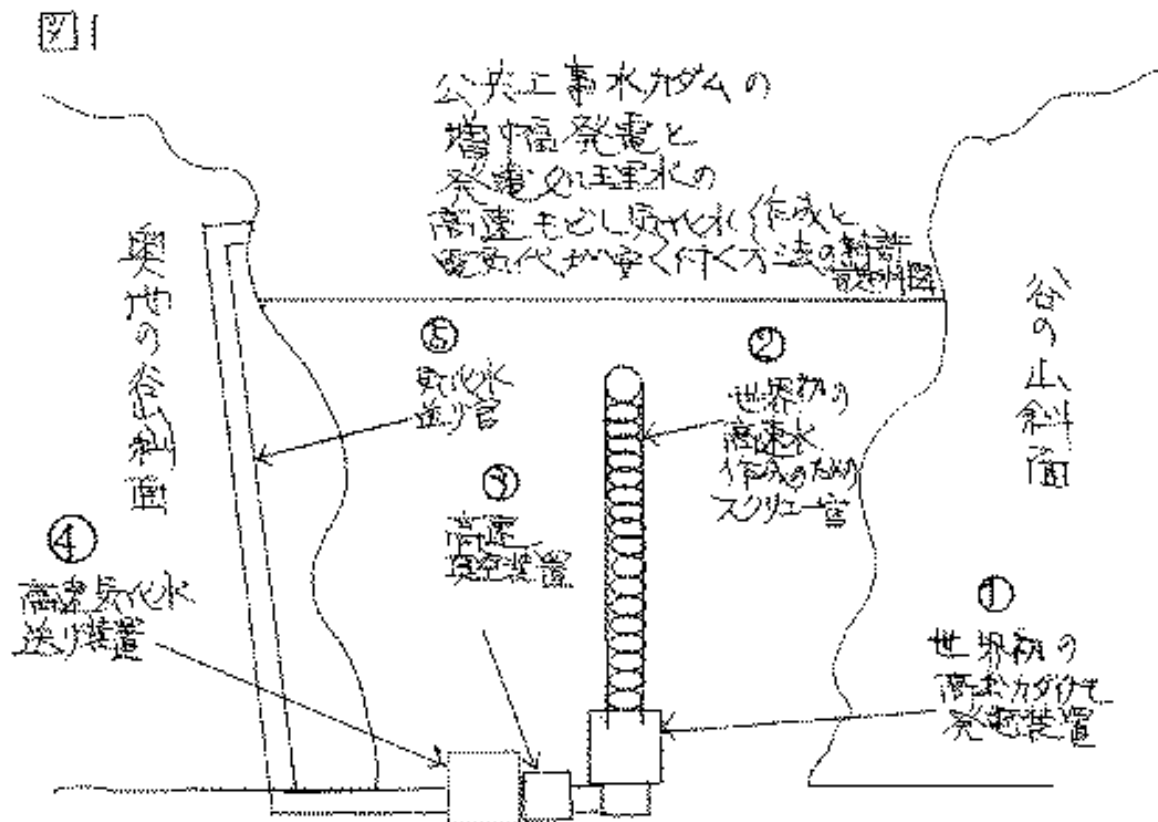
The patent refers to the field of 'buildings affording special protection'. The invention discloses a self-air-supply ash-filtering cooling silencing closable fireproof tall building with a solar warming water heater. An air supply system consists of a blind window with self-cleaned glass, a spraying water pipe, an air inlet main pipe which extends to an underground garage and then is sealed at a roof, air inlet branch pipes and valve covers which extend to each room, a stainless wind energy fan which extends from the underground garage to a place which is 6 m higher than the roof or a pipe orifice with a rain shade, an air exhaust main pipe of which the lower end is sealed, and air exhaust branch pipes and the valve covers which extend to each room. A heat preservation system consists of an internal door, windows, rolling gates which are arranged outside the windows, anti-theft fences, a heat preservation layer which is arranged on the external wall, an air relative isolation layer which is arranged outside the heat preservation layer, and a ceramic partition wall which is arranged outside the air relative isolation layer. Preferably, the solar warming water heater which is arranged on a shelf is connected with an indoor electric water heater and metal pipes under the floor to form a heat collection system. The invention has the advantages that: a livable environment which is dustless, quiet, warm in winter, cool in summer and fresh in air is created; and when a fire alarm is given, the doors, the windows, air inlet pipelines and air outlet pipelines are closed to eliminate a chimney effect, and with no need of escaping, people can wear gas masks, carry oxygen bottles and hold fire extinguishers to effectively extinguish fire.

Inventors

GUO HOUDE

Family 13/14 - FAMPAT - ©Questel

Images

**Publication numbers**

JP2010165355

Publication kind codes

A

Publication dates

2010-07-29

Earliest priority date

2010-01-04

Title

(JP2010165355)

World's newest public project countermeasure device for full payment of debt exceeding nine-hundred trillion yen of nation

Abstract

(JP2010165355)

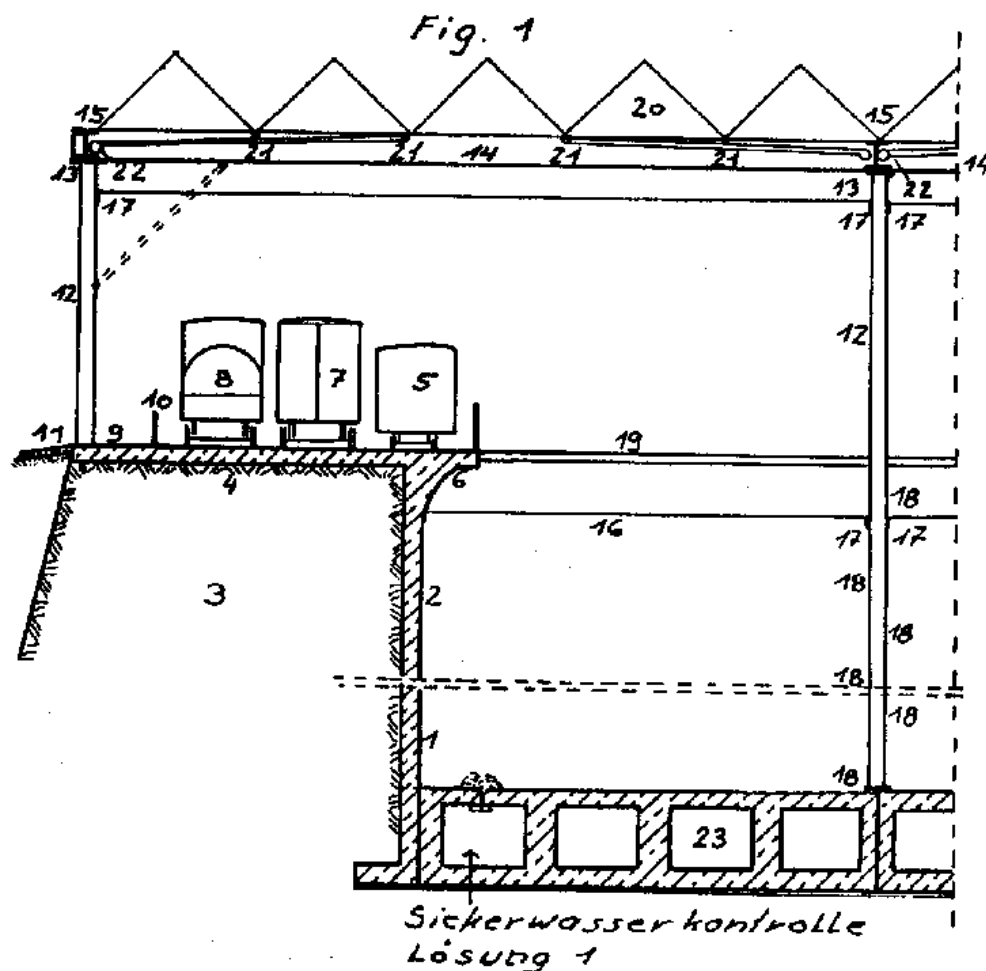
PROBLEM TO BE SOLVED: To relate to a patent technology for the full payment of the debt of the nation exceeding nine-hundred trillion yen of Japan and a patent technology for the full payment of the debt of all prefectures, cities, towns, villages and wards until now.

SOLUTION: The world's first new technology is the world's newest public project countermeasure technology of a screw tube for the full payment of the debt of Japan exceeding 900 trillion yen by a hydraulic power generation technology using the world's first screw tube for the world's first dam water power generation tube which increases a power generation amount of a waterwheel propeller type dynamo by raising the speed of water by changing a dam water derivation tube for dropping dam water from a straight tube to the screw tube in order to raise the speed of the dam water of the hydraulic power generation technology of a public project.

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Inventors

SONNO KAZUO



Detail I M. 1:200

Detail II - Spiegelbild zu I

Publication numbers

DE3732262

DE3732262

Publication kind codes

C2

A1

Publication dates

1994-04-28

1988-07-07

Earliest priority date

1987-09-25

Title

(DE3732262)

Plant, known as high-security large waste tip and large natural energy plant, for dressing and ultimate disposal of refuse materials including abandoned waste dumps, for receiving wind energy plants and for long-term hothouse use

Abstract

(DE3732262)

Plant, known as high-security large waste tip and large natural energy plant, for dressing and ultimate disposal of refuse materials including abandoned waste dumps, for receiving wind energy plants according to P 3609936.8-15 and, in particular, according to P 3715008.1-15 and for long-term hothouse use. As a final point of a nationwide supply and disposal system in which, beginning with individual catchment areas of approximately 15,000 inhabitants, refuse is separately collected, separately driven away and optimally branched, together with all other refuse, in sorting, processing and dispatch buildings in accordance with a 12-sort system, such a plant is presented here as No. 1 Luneplate-Nordniedersachsen, as the first of 10 such plants nationwide, with proportionate own-processing, with proportionate

dispatch of reusable containers, with proportionate dispatch of raw materials and with proportionate dispatch, to the nearest high-security large waste tip, of refuse of all types which can no longer be used and with use of recycling freight depots which are to be installed in catchment areas of approximately 150,000 inhabitants for the purpose of material transport by rail which is to be the primary form of material transport. In this arrangement, the areas used are optimally utilised in the long term by means of wind energy installations which are built at the same time and proportionally cover the nationwide demand for current and by means of later hothouse installations which proportionately cover the nationwide demand for raw foods.

Inventors

MEYER GERHARD