



New connection on: : 09-05-2018 : 23:30:03 - Last disconnection on: : 09-05-2018 : 16:13:04

V 4.0.0.44358(LP,U,linux) (Rev:43856 2017-04-27 09:03:29 +0200#(D201802)) (RPM D201802)

Welcome to EPOQUE Rebuild under the Production Environment

[EPODOC: SS 12] ..fi EPODOC

 Database: EPODOC

[EPODOC: SS 12] (drain+ OR collect+ OR recuperat+ OR infiltrat+) AND water AND (system OR apparatus OR Versickerbox)AND (pillar OR mold+) AND (unibody OR single OR piece)

Results in EPODOC 71

EPODOC: term 'VERSICKERBOX' not found in index 'BI'. WARNING(1)

[SS 13] ..v

[EPODOC: SS 13] ..fi

Select a database:

[SS 13] ..li



1/71 © EPODOC / EPO

PN - [CN107605189](#) A 20180119

PR - CN20171949349 20171012

AP - CN20171949349 20171012

DT - I

PA - XIAN UNIV OF ARCHITECTURE AND TECHNOLOGY

TI - Sunken type assembled composite wall structure steam curing pool and construction method thereof

AB - Disclosed is a sunken type assembled composite wall structure steam curing pool. The sunken type assembled composite wall structure steam curing pool comprises a pool body **system** and a boiler steam curing pipe **system**. The sunken type assembled composite wall structure steam curing pool has the characteristics that the pool body **system** comprises a foundation base plate, a sandwich insulated composite wall

plate and a steel roof. A steel **mold** platform is installed on the foundation base plate through a **mold** platform supporting pedestal beam. The steel **mold** platform has multiple layers. Every two layers are separated through a **mold** platform supporting **piece**. A **water collecting** pit is formed in the foundation base plate below the steel **mold** platform. The invention also provides a construction method of the sunken type assembled composite wall structure steam curing pool. The sunken type assembled composite wall structure steam curing pool adopts the sandwich insulated composite wall plate, and compared with a traditional steam curing room, the sunken type assembled composite wall structure steam curing pool has the characteristics of being little in heat loss, high in use ratio of heat energy, short in curing time, low in construction cost, easy to construct, simple in structure and the like.

2/71 © EPODOC / EPO

- PN - [CN107514034](#) A 20171226
- PR - CN20171736089 20170824
- AP - CN20171736089 20170824
- DT - I
- CNOI - [E03F5/0407](#) ; [E03C1/12](#) ; [E03C1/122](#) ; [E03C1/284](#)
- PA - YU RU
- TI - Wastewater **drainage system** with traps at downstream of **drainage** pipe
- AB - The invention provides a wastewater **drainage system** with traps at downstream of a **drainage** pipe, characterized by comprising a **drainage system** combination in which traps are disposed at the downstream of the **drainage** pipe, a floor **drain** and wash equipment are not provided with traps and the included angle of adjacent pipes is not less than a right angle, wherein the traps include trap fittings which are produced by casting and injection **molding** process, and include **single**-pipe connected and double cross-pipe connected inverted saddle-shaped traps with anti-siphon vent pipes and right angle V-shaped traps; a series of magnetic seal tipping-bucket anti-dry floor **drains** are adopted to slow dry speed of **water** seal and prevent cockroaches from entering the room, and comprise magnetic seal tipping-bucket anti-dry **drains** which can improve the smart home level, prevent flooding, and have the functions of sensing ground **drainage** and sewer blockage; **drainage** hydraulic conditions are good, the **drainage** of toilet equipment can achieve the reliability of the **water** seal, the traditional passive situation that defenses are set up everywhere, and bad smell often leaks from the floor **drains** is changed, and the difficult problem of removing blockage by a hand dredging spring is solved.

3/71 © EPODOC / EPO

- PN - [CN206698855U](#) U 20171205
- PR - CN20172233299U 20170311
- AP - CN20172233299U 20170311
- DT - I
- PA - SHANGHAI PUBLISHING AND PRINTING COLLEGE
- TI - Gardens **apparatus** has pergola of planting function
- AB - The utility model provides a gardens **apparatus** has pergola of planting function,

including flowerpot board and rain **water collecting** device, the flowerpot board is provided with bracing **piece**, cross -shaped supporting pole, gyro wheel, sliding sleeve, connecting rod, dead lever, fixing bolt, vertical pole, cutting ferrule, planting box, air vent and winding frame, the central point of the perpendicular rigid coupling of bracing **piece** terminal surface under the flowerpot board that the level was placed puts, rain **water collecting** device is provided with **collecting** box, **pillar**, slips through the net, limbers, raceway, baffle and pull handle, the **collecting** box level sets up directly over the flowerpot board, the utility model discloses a bracing **piece** is used for supporting whole pergola, the cross -shaped supporting pole is used for supporting smoothly the flowerpot board for whole device is in subaerially smoothly, the gyro wheel is convenient for the pergola and is removed, the sliding sleeve slides from top to bottom along the bracing **piece**, the connecting rod is along with the sliding sleeve slides from top to bottom, when the pergola removes to the spotting, the lapse sliding sleeve for the dead lever is inserted on the ground, thereby prevents that the pergola from relying on the gyro wheel to remove.

4/71 © EPODOC / EPO

PN - [CN206536095U](#) U 20171003

PR - CN20172173402U 20170227

AP - CN20172173402U 20170227

DT - I

PA - WANG YI

TI - Stainless steel surface electrolysis production line equipment

AB - The utility model discloses a stainless steel surface electrolysis production line equipment, include by one or two workstations, about PP closing plate and bottom top PP closing plate around with two PP boards concatenations of sliding from top to bottom weld the sealed main body that form, the gas outlet has been seted up to sealed main body's top or side, install the electric cabinet in the sealed main body, install production line **apparatus** on the workstation, production line **apparatus** includes that both ends pass through the guide **pillar** of the vertical installation of guide **pillar** fixed block, the guide **pillar** upper portion at both ends is provided with a plurality of pieces through last copper fixed block and goes up anodal copper, go up and vertically on the anodal copper to be provided with a plurality of hangers, the guide **pillar** below at both ends is through negative pole coppers under the copper fixed block is provided with a plurality of down, the work **piece** is arranged in down on the negative pole copper, install processing solution tank in the workstation, processing solution tank is last to have the **water** pump through a **water** piping connection, beneficial effect: the practicality, low in production cost compares with the existing equipment, and waste gas **collection** rate improves 95%, and liquid medicine is retrieved and is improved 15%, production efficiency improvement 20%, and the production land used practices thrift 30%.

5/71 © EPODOC / EPO

PN - [CN107094644](#) A 20170829

PR - CN20171326981 20170510

AP - CN20171326981 20170510

DT - I

CNOI - [A01K7/06](#)

PA - CHONGQING CHANGSHOU LIANLIAN COW BREEDING FIELD

TI - Self-cleaning **water**-drinking device used for dairy cattle

AB - The invention discloses a self-cleaning **water**-drinking device used for dairy cattle. The self-cleaning **water**-drinking device comprises a **water** storage bowl, a **water** outlet column and a **drainage** sleeve pipe, wherein the **water** storage bowl and the **drainage** sleeve pipe is in detachable connection; the inner cavity of the **drainage** sleeve pipe is sleeved with a tap **water** pipe; the **water** outlet column and the tap **water** pipe are **molded** into one **piece**; the bottom part of the **water** outlet column is externally sleeved with a **water** storage part; the interior of the **water** storage part is provided with a convex ring; the **water** outlet column is provided with a groove matching with the convex ring; the **water** storage part adjoins the **water** storage bowl; a gap channel is arranged between the **water** storage part and the **water** storage bowl; an annular filter screen is arranged between the **water** storage part and the **water** storage bowl; the top part of the **water** outlet column is provided with a **water** spray cake; the **water** spray cake and the **water** outlet column are in mutual communication; the upper end of the **water** spray cake is provided with a **water** outlet control **system** which comprises a thermal sensor, a controller and a solenoid valve arranged inside the **water** spray cake; and the thermal sensor, the controller and the solenoid valve arranged inside the **water** spray cake are in connection through signal wires. The self-cleaning **water**-drinking device provided by the invention has simple structure and can effectively avoid deterioration of drinking **water** from influencing the health of the dairy cattle.

6/71 © EPODOC / EPO

PN - [CN206386996U](#) U 20170808

PR - CN201621189726U 20161101

AP - CN201621189726U 20161101

DT - I

PA - NINGBO CHUNGUANG ENERGY SAVING TECH CO LTD

TI - Hot **water** supply **system** is concentrated to high residential building

AB - The utility model discloses a hot **water** supply **system** is concentrated to high residential building, be responsible for and install the branch family branch pipe in each layer including solar **collector**, holding **water** box, **water** supply main pipe, return **water**, solar **collector** links to each other with holding **water** box, and holding **water** box is external to have **water** supply main pipe and return **water** to be responsible for, and the last branch family branch pipe of installing of **water** supply main pipe is installed the individual heat metering **water** gauge and is used the **water** pipe with the branch family on the branch pipe of branch family, all install the adjustable relief pressure valve of guide's formula on all branch family branch pipes more than the external air source heat pump, 12 of the having floor of holding **water** box, its advantage lies in: **single** a stone **pillar** inscribed with buddha's name or buddhist scripture heat supply, the temperature is adjusted in the personalization, can not influence the family that occupies of other a stone **pillar** inscribed with buddha's name or buddhist scripture buildings during the maintenance, reduces pipeline standby loss, 12 install the adjustable relief pressure valve of guide's formula more than the

floor on minute family branch pipe to solved that need install the elevator pump and the technical problem that **water** pressure is too big or the return **water** does not return is handled to the relief pressure valve on house steward.

7/71 © EPODOC / EPO

PN - [CN206378323U](#) U 20170804
PR - CN201621485165U 20161231
AP - CN201621485165U 20161231
DT - I
PA - GUANGZHOU LANGSEN
INSTRUMENT TECH CO LTD
TI - Industry sewage anti -theft
arranges monitoring
alarm **system** and device
AB - The utility model discloses an
industry sewage anti -theft
arranges monitoring
alarm **system** and device,
include sampling module,
detection module, **drainage**
module, stay original **mold piece**
and data processing control
module, the sampling module for
the extraction **water** sample,
detection module is connected
with the sampling module for
detect the quality of **water**
condition of **water** sample,
excrete the module, be connected
with detection module for
the **water** sample of discharge
postdetection, stay the
original **mold piece**, be
connected with detection module
for the **water** sample that
divides the data appeared to
exceed standard to detection
module stays appearance, the
data processing control module
for control entire **system's**
operation and to **water** sample
quality of **water** data handle,
analysis, storage, sign and
transmission give the staff,
sampling module, detection
module, **drainage** module and
stay the original **mold piece** all



to be connected with the data processing control module, this industry sewage anti-theft arranges the row's of stealing condition that monitoring alarm **system** can monitor industry sewage.

8/71 © EPODOC / EPO

- PN - [CN206308700U](#) U 20170707
- PR - CN201621322568U 20161205
- AP - CN201621322568U 20161205
- DT - I
- PA - UNIV HEBEI ENGINEERING
- TI - Traffic engineering construction bank protection device
- AB - The utility model discloses a traffic engineering construction bank protection device, including bank protection supporting **pillar** body and slope protection structure, bank protection supporting **pillar** body side is provided with spud pile connecting grooves, slope protection structure passes through the interface plush copper and connects bank protection supporting **pillar** body, fixed lock ring is connected with slant steel pipe support **system** front end, and slant steel pipe support **system** rear end fixes on concrete fixed baseplate, auxiliary stay pole below is provided with the bracing **piece** head, spud pile connecting grooves lower extreme is provided with the long span strip, the drill bit is installed to bank protection supporting **pillar** body lower extreme, bank protection supporting **pillar** body has seted up the **water** inlet in the below, **water** inlet run -on **water** pipe, bank protection supporting **pillar** body internally mounted **drain** pipe and spool. This traffic engineering construction bank protection device, structural design is reasonable, adopts prefabricated equipment to carry out on -site Assembly, makes construction **piece** simple more fast, shortens construction period simultaneously, reduce cost increases life, can be better carry out the construction operation.

9/71 © EPODOC / EPO

- PN - [CN206157114U](#) U 20170510
- PR - CN201621206808U 20161109
- AP - CN201621206808U 20161109
- DT - I
- PA - CUI CHAOHUI
- TI - High -efficient mummification of laundry **piece** attaches enzyme preparation **system**
- AB - The utility model discloses a high -efficient mummification of laundry **piece** attaches enzyme preparation **system**, including the flowing **water** track to and set gradually on the flowing **water** track feeding device, add the heat drying device, spray according to manufacturing procedure attach the enzyme device, knurling **molding** device, cutting setting device and material **collecting** device adding the heat drying device and setting up quick cooling device between the enzyme device with spraying to attach, this quick cooling device includes that at least a set of roller constructs, and every roller of group

constructs two metal rollers including butt joint side by side from top to bottom, wherein the downside the metal roller and laundry sheet stock laminating on the flowing **water** track sets up. The utility model discloses the quick cooling of sheet stock can realize doing washing to make the heat drying that adds of laundry sheet stock attach the enzyme operation and go on simultaneously with spraying, improved the production efficiency of laundry **piece** by a wide margin.

10/71 © EPODOC / EPO

PN - [CN206133751U](#) U 20170426
 PR - CN201621186963U 20161104
 AP - CN201621186963U 20161104
 DT - I
 PA - URBAN VOCATIONAL COLLEGE OF SICHUAN
 TI - Property all -purpose card **system**
 AB - The utility model discloses a property all -purpose card **system** relates to estate management technical field, including NFC owner's card, thing pipe terminal, user terminal, management terminal, user terminal includes fixed terminal and mobile terminal, NFC owner's card is connected with the management terminal response through wireless network on user terminal, thing pipe terminal is passed through wireless network and is connected with management terminal, thing pipe terminal is including stopping turning **mold piece**, access control module, **water** and electricity module and shopping module, the utility model provides a multifunction card integrated problem in the middle of the present estate management work, be convenient for freely customize more thing pipe functions, make owner's all -purpose card in the property capable, it stops to **collect** blocks, schemes multiple calorie of functions such as book card, bicycle rent card.

11/71 © EPODOC / EPO

PN - [RU2607874](#) C1 20170120
 PR - RU20150150963 20151127
 AP - RU20150150963 20151127
 DT - I
 CT - || STSE (C1)
[RU2282793](#) C1 20060827 [] (KOCHETOV OLEG SAVEL EVICH [RU]);
[RU2532864](#) C1 20141110 [] (KOCHETOV OLEG SAVEL EVICH [RU]);
[RU2536064](#) C1 20141220 [] (KOCHETOV OLEG SAVEL EVICH [RU]);
[RU2480295](#) C1 20130427 [] (KOCHETOV OLEG SAVEL EVICH [RU], et al);
[RU2527805](#) C1 20140910 [] (KOCHETOV OLEG SAVEL EVICH [RU]);
[US6705548](#) B2 20040316 [] (LECHLER GMBH & CO KG [DE])
 CNOA - [F24F12/00](#)
 PA - KOCHETOV OLEG SAVELEVICH [RU]
 TI - EQUIPMENT HEAT UTILIZATION PLANT
 AB - FIELD: ventilation.SUBSTANCE: invention relates to air ventilation and conditioning with regenerative heat recovery units. This is achieved by fact, that in equipment heat utilization unit, comprising housing, tray, freezing protection **system**, two-stage contact

heat exchanger with nozzle, cooling **system** with heat exchanger, nozzle is made of compact thin-film corrugated film with thickness of 0.4...0.8 mm, wherein nozzle **molded** sheets are glued, and nozzle surface represents triangular-shaped alternating channels, which are inclined to coolant **draining** axis in counter-flow scheme: one sheet at angle of +30°, other, glued onto it, -30°, and along length channels are made with U-shaped corrugation, irrigation **system** nozzle comprises housing with screw, coaxially arranged in housing lower part, and liquid supply union with cylindrical hole arranged in housing upper part, connected with diffuser, axially symmetric to housing and union, screw is pressed into housing with formation of cylindrical chamber, located above screw, coaxially to diffuser, and in-series connected with it, wherein screw is made solid, and screw outer surface represents two in-series connected surfaces, one of which is, at least, **single**-thread helical groove with LH or RH thread and located inside housing, and second surface is made smooth in form of body of revolution axisymmetrically connected with spraying disc, located perpendicular to housing axis, and extends beyond housing lower part end surface, wherein as said surface generatrix can both be straight line, and n-order curve, and spraying disc surface, extending beyond housing lower part end surface, is made bent towards housing lower part and has radial cutouts on periphery, alternating with sprayer disc surface solid part.EFFECT: technical result is increase in process equipment **water** heat utilizing efficiency.1 cl, 2 dwg

12/71 © EPODOC / EPO

PN - [CN205783890U](#) U 20161207

PR - CN20162569735U 20160614

AP - CN20162569735U 20160614

DT - I

CCA - [Y02E10/44](#)

PA - KUNMING TONG XING SOLAR EQUIPMENT CO LTD

TI - Full module solar energy **collection** engineering **system**

AB - The utility model discloses a full module solar energy **collection** engineering **system** belongs to solar energy and utilizes technical field, constitutes by adopting hot **mold piece**, thermal energy consumption module, circulating pump, daily solenoid valve and circulation solenoid valve. Adopt the hot **mold piece** and become by a plurality of flat plate **collector** fabrics, and each flat plate **collector** group contains three flat plate **collector** and passes through the hydraulic pipe -line and establish ties. The thermal energy consumption module includes daily **water** receiver and circulation **water** receiver passes through circulation pipeline and flat plate **collector** group link separately respectively, and daily solenoid valve is installed in daily **water** receiver circulation pipeline, and the circulation solenoid valve is installed in circulation **water** receiver circulation pipeline, and the circulating pump is installed in the external supply channel of circulation **water** receiver. Daily solenoid valve and circulation solenoid valve are controlled flat plate **collector** group respectively and are daily **water** receiver and the public hot **water** of circulation **water** receiver for different hot **water** usage improves the solar energy utilization ratio.

13/71 © EPODOC / EPO

PN	- CN205953610U U 20170215	
PR	- CN20162914495U 20160822	
AP	- CN20162914495U 20160822	
DT	- I	
PA	- SHANDONG CHENYU RARE MAT TECH CO LTD	
TI	- Special membrane filter equipment of sewage treatment system	
AB	- The utility model discloses a special membrane filter equipment of sewage treatment system , including buffer tank, clear water recoil motorised valve, the board -like ceramic membrane of cavity and pneumatics motorised valve, its characterized in that the board - like ceramic membrane of cavity comprises a plurality of ceramic membrane assembly, and every ceramic membrane assembly comprises the adj. Tabular film element of cavity, membrane filtrate (liquid, lamina membranacea frame, collector tube, recoil clear water mouth and film element pillar , the beneficial effects of the utility model are that: the board -like ceramic membrane filter membrane of cavity is subassembly unit formula design, and equipment damages only needs to change single subassembly, and whole long service life has saved the spending of enterprise, set up two sets of backpurge system , can carry out clear water or gaseous recoil to blockking up membrane unit, operate more nimble, equipment life is longer, to the recovery processing of the clear looks furtherly of plate filter, increased the comprehensive waste water treatment capacity of equipment,	

improved the emission standard
of treatment of plants liquid.

14/71 © EPODOC / EPO

PN - [CN205935904U](#) U 20170208

PR - CN20162845913U 20160805

AP - CN20162845913U 20160805

DT - I

PA - SHANGHAI SEASIDE CEMETERY

TI - Flower bed feature wall
disjunctive tombstone

AB - The utility model discloses a
flower bed feature wall
disjunctive tombstone, including
side pole, center **pillar** and main
part, the side pole is equipped
with two and lies in both ends
department, and the center **pillar**
lies in the intermediate position,
is equipped with the main part
between side pole and the
center **pillar**, the bottom of main
part is equipped with the bottom
plate, and the bottom plate is
higher than ground, is equipped
with the flower bed groove at the
top of main part, and the both
ends in flower bed groove are
equipped with the side seal **piece**
that lies in the side pole top, and
the flower bed groove includes
that the **water** jacket in the
outside and inboard inside
groove, **water** jacket the lateral
surface of cement face on are
equipped with slabstone
decorative cover including the
cement face that leans out from
bottom to top, earth is equipped
with to the inside of inside
groove, is equipped with the
filter screen in the bottom of
inside groove, and the
intermediate position of the
lower part of filter screen is
equipped with the reservation
outlet, reserves the outlet **drain**



pipe intercommunication inside with locating the side pole. The utility model discloses the structure is ingenious, can reduce the area of tomb, can not influence whole graveyard's afforestation simultaneously, can also strengthen graveyard's visual aesthetics to, have fine **drainage system**, can avoid ponding.

15/71 © EPODOC / EPO

PN - [CN205926431U](#) U 20170208
PR - CN20162885298U 20160816
AP - CN20162885298U 20160816
DT - I
PA - GUANGZHOU AXWOOD CATERING EQUIPMENT CO LTD; TAOPU TECH (SHANGHAI) CO LTD
TI - Automatic wash ceramic **mold** machine
AB - The utility model discloses an automatic wash ceramic **mold** machine, including frame, cleaning **system** and rinse - **system**, cleaning **system** includes cleaning **water** tank, **water** pump, washing spray assembly and deposits the pond, it sets up in the cleaning **water** tank top to wash spray assembly, it sets up between cleaning **water** tank and **water** pump to deposit the pond, the **water** route circulation is formed in cleaning **water** tank, **water** pump, washing spray assembly and sediment pond, the rinse - **system** includes rinsing spray assembly and solenoid valve, the solenoid valve passes through tube coupling rinsing spray assembly. The utility model discloses automated control is by **single** chip microcomputer



control, right rinse the flow, add **water** voluntarily, the scavenging period, the rinsing time, the **drainage** is monitored to thereby can select different washing procedures to reach best effect according to user's requirement, adopting the circulating **water** to rinse ceramic mould and using the clear **water** of equitable volume to carry out the higher washing efficiency of rinsing so as to assurance to ceramic mould after the washing is accomplished, quick, the **water** consumption is hanged down in the low energy consumption.

16/71 © EPODOC / EPO

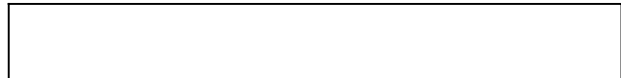
PN - [CN205617452U](#) U 20161005
 PR - CN20162156764U 20160301
 AP - CN20162156764U 20160301
 DT - I
 PA - LIUZHOU OVM STRUCTURE INSPECTION TECH CO LTD
 TI - Pile foundation reinforcing **apparatus** under **water**
 AB - The utility model provides a pile foundation reinforcing **apparatus** under **water**, includes FRP tube, locating **piece** and sealing strip, and the locating **piece** glues at the FRP tube inboardly through the gluing agent, and the sealing strip is installed when the construction in FRP tube bottom and in treating the space of reinforced structure, the FRP tube comprises the multi -disc tube, and male joint and the female connector of multi -disc tube through every tube both ends assembles into a whole, and FRP tube thickness is 1~5mm, is moulded by



multilayer fortifying fibre cloth and epoxy heat that the shaping makes, the locating **piece** is made by rubber, polyurethane or the shaping of epoxy resin material injection **molding**. Utilizing the device to carry out under **water** the pile foundation and consolidating, need not to build cofferdam and **drainage** operation, only treats reinforcing area with the multi - disc tube lock assembly of FRP tube at concrete pile, the normal pressure that the extrusion deformation that leans on the locating **piece** provided is fixed the FRP tube in the stake, be in the milk again after installing the sealing strip in FRP tube lower part and concrete pile's clearance again, and the construction back, the FRP tube need not be demolishd.

17/71 © EPODOC / EPO

PN - [CN205383724U](#) U 20160713
 PR - CN20162164786U 20160304
 AP - CN20162198339U 20160315
 DT - I
 PA - MIANYANG JINQIAOYUAN TECH CO LTD; GUO HEINZ-AXEL
 TI - And tubular hinder thermal **system**
 AB - The utility model discloses an and tubular hinder thermal **system**, include: hot cell, every are hindered to at least one it includes all that two are hindered hot **mold piece**, every to hinder the hot cell hinder the hot **mold piece** and include all that interval default distance carries out a plurality of branch pipes that dispose, wherein, crisscross or relative arrangement's mode setting is on



first **collecting** main,
second **collecting** main around
with respectively for two one end
that hinders each branch pipe in
the hot **mold piece**, and the other
end is pegged graft in
return **water** mechanism, and
two hindered branch pipe
corresponding on the hot **mold
piece** respectively through a
connection **piece** and then
connect and hinder hot curtain
and every in order to constitute
one it passes through the
first **collecting** main of matched
with, second **collecting** main
respectively and then is
connected with the peripheral
hardware to hinder the hot cell
to constitute and tubular hinder
thermal **system**. The utility
model provides an and the
tubular hinders the
thermal **system**, and it has the
reduction energy consumption,
strong adaptability, and the
practicality is good, the
controllable effect of cost.

18/71 © EPODOC / EPO

PN - [CN105735456](#) A 20160706
PNFP - CN105735456B B 20180508
PR - CN20161107946 20160226
AP - CN20161107946 20160226
DT - I
CT - || STSE (A)
[JPH08232312](#) A 19960910
[X] (MAEZAWA KASEI KOGYO KK)
[X] 1-2、4-6
* 说明书第0020-0035段，附图1-5 *;
[JPH1122886](#) A 19990126
[X] (DAIDORE KK)
[X] 1-2、4-6
* 说明书第0016-0032段，附图1-15 *;
[JPH11293730](#) A 19991026
[A] (SUEYOSHI KAZUHIRO)



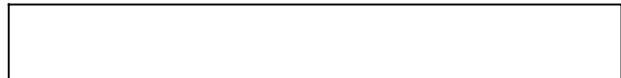
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[JP2000199248](#) A 20000718
 [A] (KOJIMA NORIATSU)
 [A] 1-6
 * 全文 *;
[JP2001090133](#) A 20010403
 [A] (SUEYOSHI KAZUHIRO, et al)
 [A] 1-6
 * 全文 *;
[CN203346967U](#) U 20131218
 [A] (XUSHUI XINGHUA CASTING
 CO LTD)
 [A] 1-6
 * 全文 *;
[JP2015221961](#) A 20151210
 [X] (KUBOTA C I CO LTD)
 [X] 1-6
 * 说明书第0027-0065段, 附图1-
 7 *;
[CN205399623U](#) U 20160727
 [R] (SHANGHAI HOPE LOOK NEW
 PIPE CO LTD, et al)
 [R] 1-6
 * 权利要求1-6 *

CNOI	- (A) E03F3/04 ; E03C1/122
PA	- (A) SHANGHAI HOPE LOOK NEW PIPE CO LTD; YAN JIANPING
TI	- (A) Novel cyclone for building drainage
AB	- (A) The invention discloses a novel cyclone for building drainage . The novel cyclone comprises a transverse T-shaped tee joint body integrally composed of a vertical pipe section and a transverse branched pipe section. A water outlet of the transverse branched pipe section is in transition connection with the upper inner wall of the vertical pipe section in the tangential direction. A downward oblique included

angle is formed by the center axis of the **water** outlet of the transverse branched pipe section and the horizontal plane, and an outer convex expansion part is formed at the connection position of the vertical pipe section and the **water** outlet of the transverse branched pipe section. Guide vanes are removed, one-piece structure design is adopted, local expansion is conducted, side tangential **water** inlet is adopted and helps confluence and exhausting, the overall size of the cyclone is reduced so that the space area of a building can be reduced, and the cyclone has the advantages that the **mold** cost is low, the product production efficiency is high, and the manufacturing cost is low. The market requirement that a **single-vertical-pipe drainage system** is matched with a high-cost cyclone is broken through, and by means of testing, the **water** flow of a **single-vertical-pipe drainage system** composed of the novel cyclone and a spiral pipe is 12 liters per second.

19/71 © EPODOC / EPO

PN - [CN105537423](#) A 20160504
 PR - CN201511011783 20151230
 AP - CN201511011783 20151230
 DT - I
 CT - || STSE (A)
[US2009320547](#) A1 20091231
 [X] (HORTON FRANK A [US], et al)
 [X] 1
 * 说明书[0027]-[0030],[0033]段
 及附图2,4-5 *;
[CN102814403](#) A 20121212
 [A] (UNIV TIANJIN TECHNOLOGY)
 [A] 1-8



* 全文 *;
[CN204182797U](#) U 20150304
[YX] (DONGGUAN HORST HOT
STAMPING TECHNOLOGY CO LTD)
[Y] 5-7
* 说明书[0025]-[0028]段及附图
1-2,6-7 *
[X] 1-4,8;
[CN204247823U](#) U 20150408
[A] (DONGGUAN VISION HOT
STAMPING TECHNOLOGY CO LTD)
[A] 1-8
* 全文 *;
[CN204747287U](#) U 20151111
[A] (UNIV DALIAN TECH)
[A] 1-8
* 全文 *

- CTNP - || STSE (A)
[Y] - 赵龙志等,《现代注塑模具
设计实用技术手册》,
(20130131),
[Y] 5-7
* 第341~342页 *
- CNOI - [B21D37/16](#)
- PA - VISION HOT STAMPING TECH CO
LTD
- TI - Parallel **water** supply
cooling **system** for thermal
stamping **mold**
- AB - The invention relates to the
technical field of thermal
stamping, in particular to a
parallel **water** supply
cooling **system** for a thermal
stamping **mold**. The **system**
comprises at least two forming
male heads and a **water**
separation plate; each forming
male head is provided with a
cooling **water** way; the **water**
separation plate is used for
independently feeding
and **collecting water** for each
forming male head; and the at
least two forming male heads
form a parallel cooling
circulating **water** way. The **water**
separation plate is used for

independently feeding
and **collecting water** for each
forming male head, namely,
the **water** is fed in each forming
male head and the **water** is
circulated to the **water**
separation plate for
being **collected** after the **water**
flows through the cooling **water**
way; each forming male head
has a **single** circulating **water**
way; and at least two forming
male heads synchronously
perform independent **water**
feeding and **collection** through
the **water** separation plate, and
form the parallel cooling
circulating **water** way, so that
the cooling **water** circulating
route is largely shortened, the
cooling **water** circulation is
quicken, the mechanical
performance in each position of
stamped products is uniform, the
product performance is stable,
the service life of **molds** is
prolonged, and the practicability
is higher.

20/71	© EPODOC / EPO
PN	- CN205056950U U 20160302
PR	- CN20152779688U 20151010
AP	- CN20152779688U 20151010
DT	- I
PA	- GUIYANG AVIC POWER PREC CASTING CO LTD
TI	- A the gating system for hollow single crystal blade
AB	- The utility model discloses a the gating system for hollow single crystal blade, including pouring basin, the rectangular piece of feeding, blade wax spare, seeding section, disc and sprue, sprue and seeding section are installed on the disc perpendicularly



respectively, **water** and seeding section intercommunication through interior through ceramic filtering net and pouring basin intercommunication, lower extreme the sprue upper end, the seeding section is passed through the spiral and is selected brilliant ware and blade wax spare lower extreme intercommunication, blade wax spare upper end and the rectangular **piece** intercommunication of feeding, the rectangular **piece** of feeding is through **collection** sediment exhaust hole and pouring basin upper portion intercommunication, blade wax spare upper end still is provided with the feeding head. The gating **system** is rational in infrastructure, has reduced the mixing with of **single** crystal blade, has loosened, stray crystal, wide -angle grain boundary, low -angle grain boundary, zebra crystalline substance and the skew disability rate of crystal orientation, has improved the product percent of pass greatly, reduces economic loss, shortens the leadtime, ensures the blade and delivers on time, can extensively popularize and apply at fired **mold** precision casting technical field.

21/71 © EPODOC / EPO
 PN - [CN105333661](#) A 20160217
 PR - US201462019092P 20140630
 AP - CN20151374320 20150630
 DT - I
 CCI - [F25C1/25](#)
 CCA - [F25C2400/14](#)
 PA - MANITOWOC FOODSERVICE CO



INC

TI - **Water** distribution **system** for ice-making machine

AB - The assembly of the present disclosure includes a one-piece, **molded** or formed **water** distribution tube and an evaporator component or top. The tube connects to the evaporator component without the use of any additional fasteners such as metal screws. A protrusion or tab formed in the tube effects the connection to the evaporator component. **Water** is introduced to the tube via an inlet, where the **water** flow is evened out partially with a divider within the tube. The **water** exits through **drainage** holes in the tube, and passes over an evaporator to be frozen into ice.

22/71 © EPODOC / EPO

PN - [CN204925781U](#) U 20151230

PR - CN20152733671U 20150921

AP - CN20152733671U 20150921

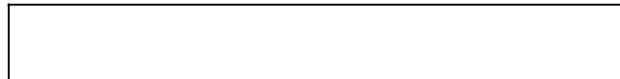
DT - I

CCA - [Y02P90/02](#)

PA - FOSHAN CITY HUA GAO
AUTOMATION EQUIPMENT CO LTD

TI - Dyeing machine centralized control management **system** with PLC programmable controller

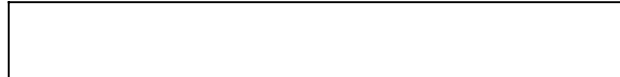
AB - The utility model provides a dyeing machine centralized control management **system** with PLC programmable controller, including total accuse machine, branch accuse machine and dyeing machine, total accuse machine is through communication protocol and duo tai divide the accuse electromechanical connection, every one accuse machine



control divides the dyeing machine, it draws together and is used for whole always to control the press packed bale the **system** carries out the PLC programmable logic controller that monitors, it is used for control to divide the accuse press packed bale to draw together the PLC programmable logic controller of feedwater module, **water drain** module, feeding module, drive module, temp. Control module and the overflow **water mold** cleaning **piece** of dyeing machine.

23/71 © EPODOC / EPO

PN - [US2015377538](#) A1 20151231
 PR - US201514750434
 20150625; US201462019092P
 20140630
 AP - US201514750434 20150625
 DT - *; Rep
 CCI - [F25C1/25](#)
 CCA - [F25C2400/14](#)
 PA - MANITOWOC FOODSERVICE CO
 INC [US]
 TI - **WATER DISTRIBUTION SYSTEM**
 FOR ICE-MAKING MACHINE
 AB - The assembly of the present disclosure includes a one-**piece**, **molded** or formed **water** distribution tube and an evaporator component or top. The tube connects to the evaporator component without the use of any additional fasteners such as metal screws. A protrusion or tab formed in the tube effects the connection to the evaporator component. **Water** is introduced to the tuba via an inlet, where the **water** flow is evened out partially with a divider within the tube. The **water** exits through **drainage**



holes in the tube, and passes over an evaporator to be frozen into ice.

24/71 © EPODOC / EPO

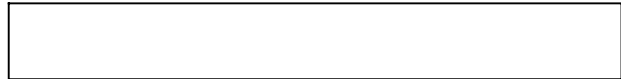
PN - [CN204691996U](#) U 20151007
PR - CN20152425117U 20150618
AP - CN20152425117U 20150618
DT - I
CCA - [Y02E10/38](#) ; [Y02E10/28](#)
PA - WANG XU
TI - Marine power station of synthesizing
AB - The utility model relates to a marine power station of synthesizing, including platform, support body, wind generating set, ocean current generating set, wave energy generating set and energy storage **system**, the platform is multilayer hull structure, is equipped with the cabin in the hull, and energy storage **system** installs in the cabin, and platform bottom surface both sides set up a plurality of pillars, and **pillar** fixed mounting supports the body and hides in the sea **water** on the support body of locating platform lower part both sides, wind generating set installs in platform top, and ocean current generating set's **water** wheels rooting -in of blades is in the lower part of supporting the body, and **single** body of wave energy generating set is installed and is supported between the bodies in platform lower part two, and wind generating set, ocean current generating set and wave energy generating set link to each other with energy storage **system** through the pipeline respectively. The utility model discloses but



simultaneous acquisition wind -
force, ocean current and wave
energy, furthest converts it into
electric energy, and
energy **collection** effect is good,
conversion efficiency is high,
economic benefits is good, does
benefit to popularization and
application.

25/71 © EPODOC / EPO

PN - [CN204626555U](#) U 20150909
PR - CN20142870089U 20141222
AP - CN20142870089U 20141222
DT - I
PA - ZHOU XIUJING
TI - Deodorant domestic downcomer
AB - The utility model relates to a
household **drainage system**, in
particular to deodorant
domestic downcomer. Concrete
technical scheme does: a
deodorant domestic downcomer,
including soft body, locate the
top connection and the lower
clutch at soft body axial both
ends, be equipped with the
connecting block between top
connection and the soft body, the
connecting block inner tower be
equipped with with the
detachable installing frame of
being connected of connecting
block, the axial one end of
installing frame is equipped with
the through -hole that makes top
connection and soft body be
connected, the other end is
equipped with the opening that
switches on with the top
connection, the installing frame
inner tower is equipped with and
extends to out extra -oral
guide **pillar**, the opening part of
installing frame is equipped with
can follow the guide **pillar** axial
and slide and move and can seal



or open the open-ended shrouding, on the guide **pillar** for with provide the other end department of shrouding one end and be equipped with the shrouding driving **piece**, the shrouding driving **piece** including the slurcam and locate the slurcam and the shrouding between the impeller. Adopt above -mentioned technical scheme, provide one kind and prevented dumped **water** or rubbish backward flow to deodorant domestic downcomer indoor, the isolation peculiar smell.

26/71 © EPODOC / EPO

PN - [CN204604654U](#) U 20150902
 PR - CN20152315967U 20150515
 AP - CN20152315967U 20150515
 DT - I
 CCA - [Y02W30/62](#) ; [Y02W30/625](#)
 PA - MAANSHANHUACHENGPLASTIC INDUSTRY CO LTD
 TI - Paper is moulded after-separating and is synthesized processing **system**
 AB - The utility model discloses a paper is moulded after-separating and is synthesized processing **system** belongs to old and useless carton processing technique field. The utility model discloses a smog processing **apparatus**, extrusion **molding** device and prilling granulator, the extrusion **molding** device includes feeder hopper, extrusion **molding** mechanism, filtering mechanism and cooling tank, smog processing **apparatus** includes chemical solution processing case, spray column and adsorption tank, prilling



granulator includes that granulation mechanism and packagine machine construct, extrusion **molding** mechanism includes propeller, heater, impurity **collecting** box and the pipe of discharging fume, the case is handled to the chemical solution is the closed vacuum chamber that falls into the perpendicular cell of a plurality of, through the connection elbow intercommunication between 2 perpendicular cells closing on, is filled with the chemical solution in the cell, adsorption tank upper portion sets up the gas outlet and passes through blast pipe and atmosphere intercommunication. The utility model discloses mould the after-separating to old and useless carton paper and mould the skin **piece** and retrieve the integrated treatment, realized improving that production efficiency, **water** consumption are few, reduction in production cost, be suitable for the granulation, carry out extrusion **molding** in-process smog the purpose handled.

27/71 © EPODOC / EPO

PN - [US2015241090](#) A1 20150827
 PR - US201414188349 20140224
 AP - US201414188349 20140224
 DT - *; Rep
 CT - || R141 (A1)
[US4014313](#) A 19770329 [
] (PEDERSEN DAVID WILLIAM);
[US4088120](#) A 19780509 [
] (ANDERSON DONALD E);
[US4143640](#) A 19790313 [
] (PIERCE NORTON T);
[US4304218](#) A 19811208 [
] (KARLSSON JON);
[US4475536](#) A 19841009 [



] (DAME RICHARD E [US]);
[US4513732](#) A 19850430 [
] (FELDMAN JR KARL T [US]);
[US4534336](#) A 19850813 [
] (LADRIERE SERJE [FR]);
[US5143053](#) A 19920901 [
] (BAER STEPHEN C [US]);
[US8333185](#) B1 20121218 [
] (GOURLEY RICHARD LECKY [NZ]);
[US2013199515](#) A1 20130808 [
] (TANDLER JOHN JOSEPH [US]);
[US8863741](#) B2 20141021 [
] (MACKAY CAMERON R [CA], et
 al);
[DE2522154](#) A1 19761125 [
] (ELTREVAAG)

CCI - [F24S20/62](#) ; [F24S70/60](#) ;
[F24S10/742](#)

CQI - [F24J2/245](#)

CCA - [Y02E10/44](#) ; [Y02B10/20](#) ;
[F24S2010/71](#)

CQA - [F24J2002/241](#)

PA - CATLIN STEVE [US]

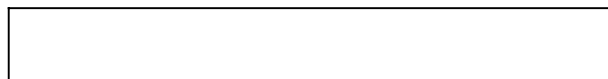
TI - Array of solar **collectors** also
 functioning as a fence

AB - A vertical array of concave
 solar **collectors** that heat **water**
 or other fluids while functioning
 as a security, privacy, or
 decorative fence panel. Concave
 solar **collectors** are stacked
 vertically in a specific
 orientation and spacing to
 capture maximum solar energy
 and transfer that energy to **water**
 or fluid transfer medias. A
 design with a minimum footprint
 and appearance that
 compliments a wide range of
 landscaping and building plans.
 A **system** of **water** and fluid
 channels and pathways **molded**
 as a **single** structure that
 requires little or no assembly.
 A **collector** array designed to
 function with or without options
 including glazing panels and

insulation panels. The solar **collector** fence panels can be linked together in series to form systems of varying size and capacity.

28/71 © EPODOC / EPO

PN - [CN104835404](#) A 20150812
PNFP - CN104835404B B 20170301
PR - CN20151279279 20150528
AP - CN20151279279 20150528
DT - I
CT - || STSE (A)
[DE102004035189](#) A1 20060216
[A] (DREYER GERHARD [DE])
[A] 1
* 全文 *;
[US2011084025](#) A1 20110414
[A] (TOMINAGA JO [JP], et al)
[A] 1
* 全文 *;
[CN102616342](#) A 20120801
[A] (HONGDENG BIAN)
[A] 1
* 全文 *;
[CN202913418U](#) U 20130501
[A] (CHEN DONGFANG)
[A] 1
* 全文 *;
[CN103184801](#) A 20130703
[A] (YIN SHIDE)
[A] 1
* 全文 *;
[CN103960179](#) A 20140806
[A] (UNIV JIMEI)
[A] 1
* 全文 *
CNOI - (A)
[G09B25/00](#)
PA - (A)
FOSHAN CITY SANSUI DISTR
HOPE TORCH EDUCATION
TECHNOLOGY CO LTD
TI - (A)
Special South China Sea high-
foundation house troop sewage
purification and utilization



circulatory **system** for science popularization teaching of teenagers

AB

- (A)

A special South China Sea high-foundation house troop sewage purification and utilization circulatory **system** for science popularization teaching of teenagers mainly comprises a transverse platform, a left foundation **pillar**, a biogas purification and supply **system**, a fecal sewage treatment **system**, a right foundation **pillar**, a sewage purifier, a washstand, a toilet, a bathroom, an outlook window, a high-foundation house, a sand settling box, a solid-liquid separation **system**, a solid-liquid separator, a **water collection** tank, a kitchen, a biogas power generation room, a cooling **system**, a power transmission and distribution **system**, a purifying **water** tank, a biogas beacon light, a biogas furnace, a main foundation **pillar**, a biogas tank, a potting basal disc, a **water** spraying cover, potted vegetables, a biogas heat supply bathing device, and a feces organic fertilizer high-temperature fast-fermentation device, and also includes first to fifth connection pipes, No.1 to No.3 connecting insulation sleeves, No.1 to No.6 pipe sleeves, and No.1 to No.6 conduits. Different from a conventional science popularization teaching aid having **single** functions, the **system** provided by the invention has the advantages of having a vivid shape and being intelligent and practical, and is a dedicated **system** that can be

applied to science museums and teenagers' palaces of various places for carrying out science popularization teaching and scientific and technological activities.

29/71 © EPODOC / EPO

PN - [CN204432330U](#) U 20150701

PR - CN20142869717U 20141231

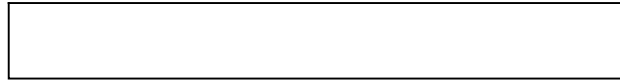
AP - CN20142869717U 20141231

DT - I

PA - INTEVA AUTOMOBILE SYSTEM
SHANGHAI CO LTD; INTEVA
ADMINISTRATION SHANGHAI CO
LTD

TI - Skylight front-back **water
drainage** groove structure

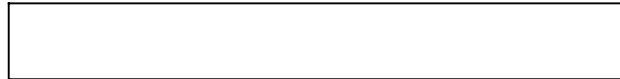
AB - The utility model provides a skylight front-back **water
drainage** groove structure. The skylight front-back **water
drainage** groove structure at least comprises a **water
drainage** groove frame. A metal pipe of a skylight transmission force output structure is buried in the **water drainage** groove frame. An annular positioning groove is arranged in the **water drainage** groove frame and is in clearance fit with the metal pipe. The metal pipe, the annular positioning groove and the **water drainage** groove frame are each an integral **piece** formed through buried injection **molding**. The annular positioning groove is formed in the **water drainage** groove frame and is in clearance fit with the metal pipe, and therefore the metal pipe can be protected through the annular positioning groove in the **mold** injection process, the metal pipe is prevented from bearing large



pressure, the problem that the metal pipe is exposed when the metal pipe bears pressure and deforms is solved, the production efficiency and the product yield are greatly increased, and the possibility that noise is generated by a whole skylight **system** is lowered.

30/71 © EPODOC / EPO

- PN - [KR101487850B](#) B1 20150202
- PR - KR20130094297 20130808
- AP - KR20130094297 20130808
- DT - I
- CT - || STSE (B1)
[KR101055334B](#) B1 20110808 [
] (HIRONIC CO LTD [KR]);
[KR20120059078](#) A 20120608 [
] (KIM CHANG HYUN [KR]);
[US2009221938](#) A1 20090903 [
] (ROSENBERG AVNER [IL], et al)
- CCI - [A61H39/06](#) ; [A61B18/02](#)
- CCA - [A61B2018/00291](#) ;
[A61B2018/00464](#) ;
[A61B2018/00702](#) ;
[A61B2018/00791](#) ;
[A61B2018/025](#) ;
[A61F2007/0075](#) ;
[A61F2007/0096](#) ;
[A61F2007/029](#) ;
[A61H2201/0214](#) ;
[A61H2201/0242](#) ;
[A61H2201/0285](#) ;
[A61H2201/165](#) ;
[A61H2201/5082](#) ;
[A61H2205/083](#) ;
[A61B2090/0463](#)
- TI - **APPARATUS** FOR TREATING
 OBESITY BY FREEZING FAT CELL
- AB - The present invention relates to
 an obesity treatment **apparatus**
 using low-cost cooling, capable
 of treating obesity without using
 an absorption pad or a coupling
 device, by coating an anti-freeze
 on a treatment site and then



wrapping the skin with a film to protect the skin and cool only a fat region. The **apparatus** of the present invention comprises: a controller body for setting a cooling temperature and an operating time, supplying cooling **water** for cooling a thermoelectric element, and providing suction power from a vacuum pump; a hand **piece** body for displaying an operation state and providing suction power through a suction hole; a cable for connecting the controller body and the hand **piece** body; a suction cup installed on the hand **piece** body to form a suction space; and a cooling device positioned at both sides of the suction cup and cooling a treatment site which is sucked into the suction space, and the **apparatus** of the present invention may further comprise a film which seals an anti-freeze coated on the treatment site to promote the **infiltration** of the anti-freeze into the treatment site, and prevents the anti-freeze from being put on the suction cup. According to the present invention, a metallic cooling plate is **molded** in the suction cup of a silicone material, and thus is in contact with a thin silicone film without direct contact with the treatment site, thereby protecting the skin using a small quantity of an anti-freeze and efficiently destroy fat, and removing a gap, through which air flows, to enhance suction power. In addition, a liner or an absorption pad and a coupling device are not used, thereby reducing costs.

PN	- US2015013237 A1 20150115
PNFP	- US9068339 B2 20150630
PR	- US201414504663 20141002; US201414196867 20140304; US20100700667 20100204; US20090150301P 20090205; US20090255082P 20091026
AP	- US201414504663 20141002
DT	- **
CCI	- A47B96/14 ; E04C3/06 ; F24S25/61 ; F24S25/632 ; F24S25/30 ; F24S25/20 ; F24S25/65 ; F24S25/70
CUI	- E04B1/19 ; E04B1/38 ; E04B1/66 ; E04B7/18 ; E04D13/00 ; E04D13/0459 ; F16M13/02
CQI	- F24J2/5203 ; F24J2/5211 ; F24J2/5245 ; F24J2/5254 ; F24J2/526 ; F24J2/5264
CCA	- Y02B10/30 ; Y02B10/20 ; Y02E10/47 ; E04C2003/0421 ; E04C2003/0439 ; E04C2003/0465 ; E04C2003/0473 ; E04C2003/0478 ; F24S2025/021 ; F24S2025/807 ; F24S2020/17 ; F24S2025/801 ; F24S2025/6006
CUA	- E04B2/7407 ; E04D2013/0468
CQA	- F24J2002/0092 ; F24J2002/4669 ; F24J2002/5215 ; F24J2002/5226 ; F24J2002/5294
PA	- (A1 B2) THREE ENTPR LLC D [US]
TI	- (A1) INTERLOCKING SHAPE FOR USE IN CONSTRUCTION MEMBERS - (B2) Roof standoff device
AB	- (A1) Interlocking support posts form an interlocking rack system which may have a single mold

which provides both a male and a female joinder member. Between the support posts can be mounted panels such as solar panels. Under the support posts can be installed a roof stand off assembly which prevents **water** from weakening the roof. Various combinations of construction members offer a cost effective building block array of mounting panels, wind turbines, and any appliance on a roof and/or anywhere in a building. A two recess mounting bracket is ideally suited to mount solar panels on a roof. A lower recess can be fastened to a bolt anchor on the roof. The opposing recess can secure a mounting clip which attaches directly to the solar panel. Identical support posts can interlock. Various embodiments include conduit clasps, slider tracks, mounts for cabinets, sign posts, and thru roof screwed anchors.

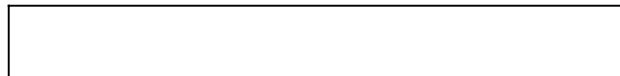
- (B2)

A roof standoff having a base attached to a roof surface using one or more threaded fasteners or screws. The base has a threaded hole that is aligned with a hole in a raised flashing that overlays the base to prevent **water** from **infiltrating** the holes in the roof formed by the threaded fasteners. A bolt threadably engages the threaded hole of the base to attach a bracket to the base. Objects may engage with the bracket such that these objects are supported by the roof standoff.

32/71 © EPODOC / EPO

PN - [CN104179154](#) A 20141203

PNFP - CN104179154B B 20160323



PR	- CN20141415280 20121017; CN20121393938 20121017
AP	- CN20141415280 20121017
DT	- I
CT	- STSE (A) CN101564925 A 20091028 [A] (MITSUBISHI GAS CHEMICAL CO [JP]) [A] 1-5 全文 CN102003575 A 20110406 [A] (KANGTAI PLASTIC SCIENCE & TECHNOLOGY GROUP CO LTD) [A] 1-5 全文 CN1827671 A 20060906 [A] (CHANGZHOU XINGBAI CHEMICAL CO [CN]) [A] 1-5 全文 CN101514256 A 20090826 [A] (TEIJIN CHEMICALS LTD [JP]) [A] 1-5 全文 CN101023134 A 20070822 [A] (TEIJIN CHEMICALS LTD [JP]) [A] 1-5 全文 US6722818 B1 20040420 [A] (SUAZO KENNETH L [US], et al) [A] 1-5 全文 CN200943203Y Y 20070905 [A] (YAO CHUNLIN [CN]) [A] 1-5 全文 US7306401 B1 20071211 [A] (LINKOGLE LES L [US]) [A] 1-5 全文
PA	- (A) KUNMING PURETOWN ENVIRONMENTAL TECH CO LTD
TI	- (A) Polymer-material water conveying system and manufacturing and mounting

method thereof

AB - (A)

The invention discloses a polymer-material **water** conveying **system** and a manufacturing and mounting method thereof and belongs to the field of **drainage** facilities. The polymer-material **water** conveying **system** comprises a plurality of a **single** bodies. Each **single** body is formed through injection **molding** by thermoplastic plastics. The thermoplastic plastics comprise, by weight, 100 parts of PP plastics, 0.2 part of glass fiber 988A, 0.25 part of light stabilizer UV-9, 0.1 part of ultraviolet light absorber UV531, 0.1 part of nucleating agent NAP-53F and 0.2 part of antioxidant 1010. The polymer-material **water** conveying **system** has the advantages that the **system** is resistant to acid, base and salt, applicable to various geological conditions, high in anti-seismic performance, long in service life, convenient to manage and maintenance-free after being mounted, low in construction cost, high in cost performance and good in economical efficiency.

33/71 © EPODOC / EPO

PN - [US2014338657](#) A1 20141120

PR - WO2011BR00354 20110923

AP - US201114346159 20110923

DT - *; Rep

CT - || R141 (A1)
[US4084580](#) A 19780418 [
] (ROARK CHARLES FREDERICK)

CCI - [F24S80/30](#) ; [F24S10/504](#) ;
[F24S10/753](#) ; [F24S70/12](#)

CUI - [F24S10/502](#) ; [F24S10/40](#)

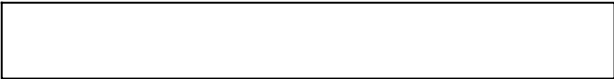


CQI	- F24J2/05 ; F24J2/202
CCA	- Y02E10/44 ; Y02B10/20 ; Y02P80/156 ; Y02P80/24 ; F24S80/60 ; F24S80/40 ; F24S2025/6011 ; F24S2010/71
PA	- MARCIEL FILHNO OTHON ESPINDOLA [BR]
TI	- FLATTERMO-SOLAR COLLECTOR AND MANUFACTURING PROCESS
AB	- The “FLATTERMO- SOLAR COLLECTOR AND MANUFACTURING PROCESS”, subject of this patent, represents a radical paradigm shift, both in the manufacturing process— whose steps were minimized and subject to any degree of automation—and regarding the shape design of the solar energy gathering tubes and tightness of the metal housing that houses the collecting element. The solar energy gathering tubes in accordance with this patent are manufactured with copper and have reduced costs—as the materials, shapes and manufacturing process—due to three innovative embodiments: 1. The reducing the thickness of the copper plates to only 0.10 to 0.15 millimeters, which reduces the cost of materials and the final weight of the assembly; 2. The molding of the gathering tubes by its stamping in these thin plates, which provide structural stability to the thin plates, thereby balancing the brittleness of their low thickness with increased resistance conferred by stamping; 3. Automatic welding process through high precision and low cost laser or electrical discharge, eliminating the electrodes or manual welding, two symmetrically stamped

plates, so getting through a **single** automatic operation a whole hermetically sealed **system** of tubes for **water** flow and solar energy gathering in a **single** manufacturing operation. Besides this, radical costs reduction arising from the industrial design outlined above, by changing the geometry of solar **collector** tubes, that tend to have low internal volumes and elliptical shapes, oval, or any non-circular shape, whose largest diameters are positioned facing the sun to receive solar radiation which increase the useful area of solar energy absorption by the gathering tubes.

34/71 © EPODOC / EPO

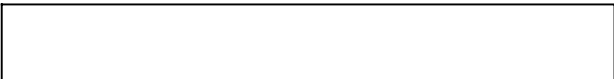
PN - [CN203527906U](#) U 20140409
 PR - CN20132642118U 20131017
 AP - CN20132642118U 20131017
 DT - I
 PA - NANJINGOURGREENENERGY
 SAVING TECHNOLOGY CO LTD
 TI - Extrusion **molding** polystyrene
 foam board production line
 AB - The utility model discloses an
 extrusion **molding** polystyrene
 foam board production line. The
 production line comprises a
 control cabinet, a stirring and
 feeding **system**, a first double-
 screw extruder, a metering pump,
 a hydraulic screen exchanger, a
 circulating cooling **water**
system, a second **single**-screw
 extruder, a heat exchanger, a die,
 a die temperature controller, a
 decoiler, a front traction, a
 cooling frame I, a slitting
 machine, a cooling frame II, a
 rear traction, a transverse
 cutting machine, a



dust **collection** device and a recycling and granulating **system**. According to the production line, intelligent control is performed by virtue of the control cabinet, the production accuracy of the equipment is improved, and the product quality is improved; an edge cutting machine, an edge grooving machine, a surface pile drawing machine, a surface grooving machine and other auxiliary machines are online integrated in the production line, so that multiple functions can be completed on the same production line, and the production efficiency is greatly improved. The production line is used for recycling waste materials by utilizing the recycling and granulating **system**, so that waste can be reduced, cost can be saved, energy can be saved, and the environment can be protected.

35/71 © EPODOC / EPO

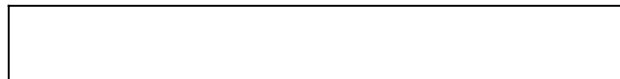
PN - [CN203484502U](#) U 20140319
 PR - CN20132434445U 20130722
 AP - CN20132434445U 20130722
 DT - I
 PA - ANHUI JINGDE HONGCONG METAL MFG TECHNOLOGY CO LTD
 TI - Bending head **mold** for **water drainage system**
 AB - The utility model discloses a bending head **mold** for a **water drainage system** and relates to the technical field of down bending heads. The bending head **mold** includes an upper **mold**, a lower **mold**, a stabilizing support. The upper **mold** includes an arc-



shaped pit and a rod hole. The lower **mold** includes a pedestal, an arc-shaped metal boss and a stabilizing rod. The stabilizing support is disposed on the lower **mold**. A metal sheet that is raw material is disposed in the stabilizing support. The upper **mold** presses down and punches the metal sheet into a half **piece** of arc-shaped bending head. A bending head finished product is formed by welding two half pieces of arc-shaped bending head together. The bending head **mold** for the **water drainage system** has advantages of that the bending head **mold** is simple in structure and convenient to operate; and cost is reduced compared with that caused by manufacturing a whole **piece** of bending head directly and economical benefit is improved.

36/71 © EPODOC / EPO

PN - [KR20130138380](#) A 20131219
 PR - KR20120061891 20120611
 AP - KR20120061891 20120611
 DT - I
 PA - HYUNDAI MOTOR CO LTD [KR]
 TI - HOLE PLUG FOR VEHICLES
 AB - The present invention relates to a hole plug to be inserted into a hole on a vehicle body panel to prevent exhaust gas from flowing into the hole and **water** from being **collected** around the hole. The hole plug for vehicles according to the present invention reduces the number of **molds** for manufacturing the hole plug using a **single** injection **mold**; and ensures constant performance for exhaust gas blockage



and **drainage** using a new type of plug integrated with a body and a valve to be opened or closed based on the reaction of **water** by adjusting the tension on the outer part of a rubber valve in a one-way plug **system** which covers the hole on the vehicle body panel and which is capable of filling up the hole and **draining** stagnant **water**.

37/71 © EPODOC / EPO

- PN - [CN203128939U](#) U 20130814
- PR - CN20132117146U 20130307
- AP - CN20132117146U 20130307
- DT - I
- PA - HU JIAWEI
- TI - **Single-cylinder** double-drive synchronous tissue decomposition crude fiber regeneration cylinder manufacturing device
- AB - The utility model relates to a **single-cylinder** double-drive synchronous tissue decomposition crude fiber regeneration cylinder manufacturing device. The device comprises an upper housing and a lower housing, wherein a separating cylinder is arranged in the lower housing, a rotating shaft of a centrifugal motor penetrates through the center of the bottom of the separating cylinder and is concentrically and fixedly connected and in rotating fit with the bottom of a centrifugal cylinder built in the separating cylinder, a self-rotating **molding** net **mold** is arranged in the centrifugal cylinder, a recovered **water** storage box is arranged on one side of the separating cylinder, a **drainage** pipe at the bottom of



the separating cylinder is connected with a **water** pump and the **water** storage box through pipelines of a **drainage** valve and a **water** inlet valve, a drying device and an electric control **system** are arranged in the upper housing, the rotating shaft of a beating motor is connected with a beating rod, a blocking plate is covered above the mouth of the centrifugal cylinder, a hot flow air hole on the blocking plate is communicated with a hot flow air channel of the drying device, and an electrical connection seat is arranged on one side of the joint of the upper housing and the lower housing. The device disclosed by the utility model has the advantages of reasonable structure, simplicity in operation, one-time completion of manufacturing process steps and high production efficiency.

38/71 © EPODOC / EPO

- PN - [US2010043136](#) A1 20100225
- PR - US20080229509 20080822
- AP - US20080229509 20080822
- DT - *; Rep
- CT - || R141 (A1)
[US2106516](#) A [];
[US5878448](#) A [];
[US5022430](#) A [];
[US5216767](#) A [];
[US5656176](#) A [];
[US2009320204](#) A1 []
- CCI - [A47K3/40](#) ; [E03F5/0409](#) ;
[E03C1/20](#)
- CCA - [Y10T29/49](#)
- TI - Shower pan **drain**
assembly **system**
- AB - An integrated shower base
designed for improving



the **drainage** of a tile shower is disclosed. The shower pan may be custom fabricated and **molded** with a depression surrounding a **drainage** opening for receiving a one **piece** floor **drain**. The pan and floor **drain** are welded together to prevent leaking. The floor **drain** contains weep holes so that **water** that seeps through the mortar on the shower floor and into the shower pan can **drain** properly without leaking. The floor **drain** also contains a reservoir for holding **water** that **drains** through the regular shower **drain** and also for **water** that seeps through the shower floor. A mortar guard is placed over the weep holes to prevent the holes from becoming clogged. A **drainage** mat is placed over the shower pan to help **water** seepage flow to the floor **drain**.

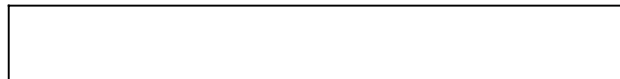
39/71 © EPODOC / EPO
 PN - [JP2009302080](#) A 20091224
 PNFP - JP4972717B B2 20120711
 PR - JP20080151178 20080610
 AP - JP20080151178 20080610
 DT - I
 CT - (A)
[JPH09114585](#) A [
]; [JPH07248867](#) A [];
[JP2004013325](#) A []
 FI - H05K5/06&E
 FT - 4E360/AA02; 4E360/AB03;
 4E360/AB05; 4E360/AB08;
 4E360/AB34; 4E360/AB42;
 4E360/BD03; 4E360/BD07;
 4E360/ED02; 4E360/ED03;
 4E360/GA22; 4E360/GA29;
 4E360/GB26
 PA - (A)
 FUJITSU GENERAL LTD



- TI - (A)
APPARATUS CABINET
- AB - (A)
 PROBLEM TO BE SOLVED: To obtain an **apparatus** cabinet having a bottoming hole formed by the bottoming structure of a **molding** die which is constituted not to require a closing member separately although the bottoming hole is conventionally closed with a separate member.
- SOLUTION: When an **apparatus** cabinet consisting of a front case 2 and a rear case 3 is attached, a bottoming hole 50 formed in the front case 2 is fitted with an engaging **piece** 51 provided on the rear case 3 and closed. Since dust or **water** can be prevented from **infiltrating** into the cabinet without using a closing member separately, the number of components can be decreased and the cost can be reduced. Furthermore, the work can be simplified and the man-hours can be reduced because the bottoming hole is closed with the engaging **piece** simultaneously with attachment of the front case and rear case.
- COPYRIGHT: (C)2010,JPO&INPIT

40/71 © EPODOC / EPO

- PN - [CN201314794Y](#) Y 20090923
- PR - CN20082227139U 20081216
- AP - CN20082227139U 20081216
- DT - I
- PA - YINGUI GUAN [CN]
- TI - Multi-blower blast-type cooling tower
- AB - A blower **system** of a multi-blower blast-type cooling tower is positioned on the side surface of the lower part of a cooling

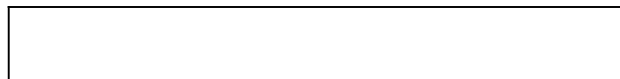


tower body, and the multi-blower blast-type cooling tower comprises a plurality of blower units with low power, and the blower units with different amount can be arranged according to the magnitude of the cooling **water** quantity of the cooling tower; the blower units can be arranged on the same side of the cooling tower and also can symmetrically arranged on two opposite sides; a casing of the cooling tower body comprises a series of standard mould pressing plates, protuberant ribs are formed on the surface of the standard mould pressing plates, turned-over edges are formed on the outer edge of the plates and used for connecting with other standard mould pressing plates, and each standard mould pressing plate is **molded** through thermosetting flaky **molding** compound and thermosetting flaky **molding** compound or is one-piece **molded** through manual lay-up glass fiber reinforced plastics; a self-drooping shutter is used for resisting at the connection part of the periphery of a **water collecting** tank and the blower **system**, and other surfaces are sealed by the standard mould pressing plates; and the multi-blower blast-type cooling tower adopts an intelligent variable frequency control **system**, thereby effectively saving electric energy.

41/71 © EPODOC / EPO

PN - [US5227095](#) A 19930713

PR - US19920976195
19921113; US19910799410



19911127

AP - US19920976195 19921113

DT - *

CT - [US2250978](#) A []; [US2445908](#) A [];
[US3253819](#) A []; [US3363885](#) A [];
[US3384165](#) A []; [US4267130](#) A [];
[US4416836](#) A []; [US4521350](#) A [];
[US4637903](#) A []; [DE1451155](#) A1 [];
[FR1158377](#) A []; [JPS5226645](#) A [];
[JPS57142483](#) A []

CCI - [F28F25/02](#) ; [F28C1/02](#)

CCA - [Y10S261/11](#) ; [Y10S261/85](#)

PA - CURTIS HAROLD D [US]

TI - Modular cooling tower

AB - A direct forced draft counterflow **water** cooling tower module includes an integral one-**piece** frame and basin preferably constructed from **molded** fiberglass. The cooling tower includes a liquid distribution **system**, fill material located below the liquid distribution **system**, a **drainage collection system** located below the fill material, and at least one fan located below the **drainage collection system**. The fan blows cooling air directly upward through the **drainage collection system** and then through the fill material.

42/71 © EPODOC / EPO

PN - [US2003037498](#) A1 20030227

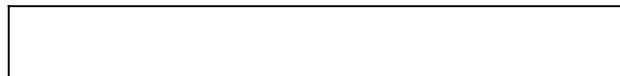
PNFP - US6647682 B2 20031118

PR - US20010935481 20010823

AP - US20010935481 20010823

DT - *

CT - (B2)



	US1710304 A []; US1779936 A []; US3893919 A []; US5618416 A []; US5724777 A []; US5966884 A []; US6168208 B1 []
CCI	- E04D13/0409
CCA	- E04D2013/0413 ; E04D2013/0427 ; E04D2013/0436
PA	- (A1 B2) PORTALS PLUS INC [US]
TI	- (A1 B2) Drain pipe connector
AB	- (A1 B2) A means to engage two vertical pipes or tubes of unlike and increasing size that have been co-inserted such as with a roof or floor drain , in a manner that prevents the contained fluid from overspilling when the said pipes become full or when the fluid flows in a direction opposite from normal gravity flow, which is generally considered as flow from the smaller to the larger pipe. The means of engagement closes the void between the inside diameter larger pipe and outside diameter smaller pipe to withstand fluid pressure in a way that accounts for angular misalignment, pipe or tube eccentricity, manufacturing tolerance, as well as tube condition and debris attached to either pipe sidewall. More specifically, a roof drain system for existing roofs or new construction including a flanged outlet pipe for insertion into the roof drain pipe with the flange mounted on top of the roof. A water straining system is mounted on top of the flange. The outlet pipe is sealed to the

interior of the **drain** pipe by a one-piece rubber **molding** seal that flexes to easily slide into the **drain** pipe and withstands high backup **water** pressures from the **drain** pipe without leaking. The seal has a Shore A durometer in the range of 30 to 95 and has an annular portion engaging the outer surface of the outlet pipe and an integral flange portion extending outwardly and downwardly from the upper end of the annular portion that seals the inner surface of the **drain** pipe.

43/71 © EPODOC / EPO

PN - [US4763510](#) A 19880816
 PR - US19860920044 19861016
 AP - US19860920044 19861016
 DT - *
 CT - [US1572507](#) A []; [US4542642](#) A [];
[US4602504](#) A []
 CCI - [G01M3/022](#)
 PA - PALMER DENNIS D [US]
 TI - Plug member used in hydraulic testing of plumbing **system**
 AB - A one-piece, **molded** sealing element which is installed in a test tee on a **drain**, vent, waste plumbing **system**. The sealing element is cup-shaped and fits within the test tee to dam **water** on the upstream side of the test tee for hydraulic testing of the plumbing **system**. The sealing element can be broken and removed from the test tee through the lateral opening in the tee following the hydraulic test of the plumbing **system**.

44/71 © EPODOC / EPO

PN - [US4576094](#) A 19860318
 PR - US19850770050 19850828

AP	- US19850770050 19850828
DT	- *; Rep
CT	- STSE (A) US4023996 A 19770517 [] (LENEVEU LOUIS J); US4039640 A 19770802 [] (LENEVEU LOUIS J); US4383468 A 19830517 [] (SIE SWAN L [NL], et al); US4416710 A 19831122 [] (ANDERSON WILLIAM S [US]); US4420931 A 19831220 [] (ANDERSON WILLIAM S [US]); US4466330 A 19840821 [] (JURETZKE HEINZ [DE], et al); US4537133 A 19850827 [] (MAINIERO RICHARD J [US])
CCI	- B29C44/3461 ; B29C44/445 ; F42B3/11
CCA	- B29L2031/7772 ; B29K2025/00
PA	- US ARMY [US]
TI	- Fabrication of expandable polystyrene plastic ignition containers
AB	- A method of fabrication of expandable polystyrene plastic ignition container is disclosed which yields an electric squib case and an ignitor charge case which can be easily loaded with a pyrotechnic charge and an ignitor charge respectively, and when in combination, serves as the ignitor system for a high length to diameter flight motor. The method of fabrication employs expandable polystyrene beads in a first predetermined amount of polystyrene beads which are first pre-expanded to about three times their original size. A second predetermined amount of expandable polystyrene beads are combined with the pre-expanded beads; the combined beads are added to a mold of the desired shape; and

the **mold** is placed in a steam chamber to expand the combined beads to form either the squib case or ignitor charge case. The squib case and the ignitor charge case when mated as an ignitor **system** for a rocket motor each has the weight, density, and strength to remain in tact during an ignition phase but subsequently breaks up into small pieces which does not inflict damage to propellant in the rocket motor or cause plugging of nozzle when in operation.

TXT

- An electric detonator or igniter of the bridge wire type for mounting in a rocket motor. INVENTIVE IDEA: creating a detonator made of plastics material which does not plug the rocket motor nozzle on rupturing of the detonator case. The detonator casing is made of a plurality, i.e. two, of parts: a first part being a cylindrical skirt (10) and a bridge plug (1) made in one **single piece**, and a second part being a closure plug (20). pressurising the steam chamber with steam of 15 psi and at a temperature of 250 F during 3 min; removing the casting mould from the steam chamber; cooling the casting moulds in cold **water** for 1 min; removing the igniter cases from the mould.placing polystyrene beads into boiling **water**, while allowing the beads to expand to three times the size of their original diameter; **draining** the excess **water** off; adding a second quantity of preexpanded polystyrene beads or particles or spheres; placing the twinned polystyrene beads in an Al mould;Both parts

are made of a plastics material, i.
e. a polystyrene resin. Both parts
are connected to each other by
means of an adhesive such as a
polyurethane resin

45/71 © EPODOC / EPO

PN - [US4490992](#) A 19850101
PR - US19830566789 19831229
AP - US19830566789 19831229
DT - *
CT - [US2536811](#) A []; [US2635939](#) A [];
[US2639208](#) A []; [US2685178](#) A [];
[US2792231](#) A []; [US2935279](#) A [];
[US2985310](#) A []; [US3040899](#) A [];
[US3191897](#) A []; [US3399553](#) A [];
[US3727421](#) A []; [US3819244](#) A []
CCI - [F25D21/14](#) ; [F25D23/006](#)
CCA - [F25B2500/13](#)
PA - GEN ELECTRIC [US]
TI - Household refrigerator
compressor vibration isolator
and condensate **collecting** tray
AB - A high-side portion of a
refrigeration **system** is
supported on a
condensate **collecting** tray
formed in a **single piece**
of **molded** plastic which
includes in combination a
condensate **water** overflow
containment area and a drop-in
rotary compressor mounting
arrangement wherein the
compressor is resiliently
supported in the overflow
containment area with its axis in
a vertical position in a manner
which provides torsional and
vertical vibration isolation, the
containment area being



dimensioned so that only an overflow of condensate **water** will come in contact with the compressor.

46/71 © EPODOC / EPO

PN - [US3881200](#) A 19750506
PR - DE19732314789 19730324
AP - US19740452624 19740319
DT - **
CT - [US1676116](#) A []; [US2076950](#) A [];
[US2184722](#) A []; [US2315928](#) A [];
[US2552546](#) A []; [US2879519](#) A []
CCI - [E03C1/01](#)
PA - MAIER GERBER H W
TI - Washing **apparatus**
AB - A washing **apparatus** which comprises a wash basin and seat washing basin combined to form a functional unit and having a **single** common battery of fittings for a feed of mixed **water** to be conducted optionally into the wash basin or into the seat washing basin which has a common wash-**water** discharge. A base under the wash basin supports the seat washing basin such that it can be swung out of a position of rest concealed in the base into a position of use and from there back into the position of rest. A hollow bottom part of the base is formed as a supporting arm in the form of a hollow **molding** which, in an axis of rotation of the seat washing basin, has a wash-**water** inlet which discharges into an adjoining **water collecting** space. A pump, and a pressure transmitter contained in the **water collecting** space for the



connecting of the pump, the latter arranged in another adjoining pump space which is separated off by a partition having a passage, are provided.

47/71 © EPODOC / EPO

PN - [US5547013](#) A 19960820

PR - US19930033605
19930317; US19940308539
19940921; WO1996CA00473
19960718; US19950419114
19950410

AP - US19950419114 19950410

DT - *

CT - [US441643](#) A []; [US3659643](#) A [];
[US4589470](#) A []; [FR1301977](#) A [];
];
[JPS58205660](#) A []; [JPS59127955](#)
A [];
[JPS6072651](#) A []; [SU908493](#) A1 []

CCI - [B22D11/0634](#)

TI - Rotary wheel casting machine

AB - A casting wheel carries a rotating inner-radius **mold** wall along its rim and features a non-rotating **mold** segment incorporating the outer-radius **mold** wall, circumferentially oscillated about an external stationary support. The casting wheel includes circumferential guide tracks around the wheel periphery, along which cam guide rollers carrying the non-rotating segment act to maintain a closely controlled interface clearance between the inner and outer-radius **mold** wall edges throughout the rotation. The non-rotating **mold** segment may be constructed as a **single** box or multiple box segments hinged together for oscillation by a **single** oscillator, each segment



incorporating its own guide roller **system**. Each box inside wall doubles as the **mold** envelope outside wall, against which **water** sprays may be directed from nozzles within the box enclosure, which is **drained** by gravity from an outlet proximate the lower end. Because of the rigid construction of both wheel and closure, wide slab sections for flat-rolled products can be cast by simply increasing the width of the wheel in relation to the depth of the **mold** envelope. Adjustable-width side dams can be used for adjusting cast slab width, extra clearance for entry of submerged shrouds for casting of this slab sections, and is adaptable for a variety of near net shape products including structural sections. Box enclosures carrying a series of idler rollers can be used in place of the outer-radius **mold** wall, following the formation of a cohesive solid skin on the section being cast. This eliminates significant closure friction and assures non-sliding contact at controlled pressure between stock and wheel, thereby propelling the stock by static friction along the arc of contact with the wheel, rather than by pulling with withdrawal rollers following discharge, or with driven rollers along the containment section. A mechanical-hydraulic oscillator transmission can be employed to accomplish the rapid oscillation characteristic of high speeds of continuous casting.

PNFP	- US6893087 B2 20050517	
PR	- US20020298099 20021118	
AP	- US20020298099 20021118	
DT	- *	
CT	- (B2) US1882169 A []; US3078101 A []; US3112956 A []; US3222694 A []; US4370767 A []; US4416462 A []; US4852362 A []; US4912788 A []; US4945591 A []; US4953913 A []; US5275315 A []; US5275463 A []; US5326152 A []; US5352023 A []; US5624157 A []; US5785427 A []; US6256819 B1 []	
CCI	- B62J1/18 ; B62J1/12	
PA	- (B2) STEARNS INC [US]	
TI	- (A1 B2) ALL TERRAIN VEHICLE SEAT CUSHION	
AB	- (A1 B2) A seat cushion for use on all terrain vehicles and snowmobiles made of a single piece of molded foam having a skin covering a foam core, a front portion with a curved leading edge to fit against a gas tank filler spout, outer edges hinged to bend over a vehicle seat, straps connected to the outer edges to secure the cushion to a vehicle frame or housing and an air circulating and water drainage system formed on central areas of the cushion and with foam cushion areas formed between grooves of the air circulating and water	

drainage system to support the bones of the buttocks of a user seated on the cushion.

49/71 © EPODOC / EPO

PN - [US2003024568](#) A1 20030206

PNFP - US6651272 B2 20031125

PR - US20020184312
20020627; US20000703205
20001031; US19990330797
19990614; US19970957517
19971024

AP - US20020184312 20020627

DT - *; Rep

CCI - [B01D61/10](#)

CCA - [Y10T137/3294](#)

TI - (A1 B2)
Reject **water drain** line
installation **system**
and **apparatus** for under sink
reverse osmosis filter **system**

AB - (A1 B2)
Reject waste **water** adapter
coupling fitting, for use with a
household undercounter reverse
osmosis (R/O) **water** filtration
installation associated with an
in-counter sink with its outlet
connected by standard slip fit S/J
plumbing fittings to a sink **drain**
trap plumbed to the household
sewer **system**. The R/O reject
waste **water drain** line is
coupled into the sink **drain** trap
by various improved adapter
coupling embodiments: e.g., a
ball-and-cage type back check
valve in the adapter; a modified
S/J branch tail **piece** having a
special adapter fitting that is
permanently joined to the inlet
of the branch stem tube of the
tail **piece**; and a standard
disposal EII with a waste **water**
drain inlet protuberance
integrally **molded** at the outside
corner of the junction of a



quarter-turn curved elbow
portion with a straight sleeve
portion of the Ell.

50/71 © EPODOC / EPO

PN - [US2003228956](#) A1 20031211

PNFP - US6849031 B2 20050201

PR - US20020162618 20020606

AP - US20020162618 20020606

DT - *; Rep

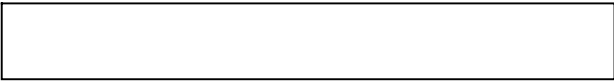
CT - || STSE (B2)
[US4747538](#) A 19880531 [
] (DELTA TECH INC [US])
[US4750733](#) A 19880614 [
] (FOTH ISTVAN [SE])
[US4754571](#) A 19880705 [
] (RIECHMANN WOLFGANG [CA])
[US5194048](#) A 19930316 [
] (BRIGGS RICK A [US])
[US5234728](#) A 19930810 [
] (CHIANG MING ANN [TW])
[US5637361](#) A 19970610 [
] (SCHEURICH RONALD [DE])
[US5775260](#) A 19980707 [
] (JANSEN JOHN [US])
[US6527257](#) B1 20030304 [
] (RPS PRODUCTS INC [US])
- || R141 (A1)
[US5194048](#) A [];
[US6527257](#) B1 [];
[US4747538](#) A [];
[US4750733](#) A [];
[US5637361](#) A [];
[US4754571](#) A [];
[US5775260](#) A [];
[US5234728](#) A []

CCI - [A63B69/0048](#)

CCA - [B05B17/08](#) ; [A63B2009/008](#)

TI - (A1 B2)
ARTIFICIAL WATERFALL CLIMBING
STRUCTURE

AB - (A1 B2)
The invention provides a unique
interactive waterfall-climbing
structure. The invention provides
a tower, based on the use of



polystyrene foam, cut into various shapes to create a series of descending depressions and ledges to simulate a waterfall. The foam **mold** is covered with fiberglass to form a rigid, solid **single** panel. A steel frame is then attached to the one-**piece** fiberglass shell, allowing the structure to stand self-supported. The invention also provides a waterfall **system** including a dispensing tank at the top to allow **water** to overflow outward and cascade down the climbing surface and a reservoir tank to **collect** the **water**. The invention further provides a pump for re-circulating the **water** and a conduit to direct **water** from the reservoir upwardly to the dispensing tank.

51/71 © EPODOC / EPO

PN - [WO9310891](#) A1 19930610
 PR - US19910799410 19911127
 AP - WO1992US10202 19921124
 DT - *; Rep
 CT - |US| ISR (A1)
[FR1158377](#) A [X];
[US4521350](#) A [Y];
[DE1451155](#) A1 [Y];
[US3739556](#) A [Y];
[US4301097](#) A [Y];
[JPS5226645](#) A [Y];
[US2445908](#) A [Y];
[US2780306](#) A [Y];
[US3253819](#) A [Y];
[US3168596](#) A [Y];
[US2250978](#) A [Y];
[US3363885](#) A [Y];
[US4416836](#) A [Y]
 CCI - [F28F25/02](#) ; [F28C1/02](#)
 PA - CURTIS HAROLD D [US]
 TI - MODULAR COOLING TOWER
 AB - A direct forced draft



counterflow **water** cooling tower module (10) includes an integral one-**piece** frame (12) and basin (32) preferably constructed from **molded** fiberglass. The cooling tower includes a liquid distribution **system** (116), fill material (128) located below the liquid distribution **system**, a **drainage collection system** (82) located below the fill material and at least one fan (38) located below the **drainage collection system**. The fan (38) blows cooling air directly upward through the **drainage collection system** (82) and then through the fill material (128).

52/71 © EPODOC / EPO

PN - [US4221441](#) A 19800909

PR - US19790028572 19790409

AP - US19790028572 19790409

DT - *

CT - [US2419319](#) A []; [US2550539](#) A [];
[US3862534](#) A []; [US3992848](#) A []

CCI - [A47K4/00](#) ; [E04B1/34869](#)

PA - BAIN WILLIAM J

TI - Prefabricated kitchen-bath utility **system**

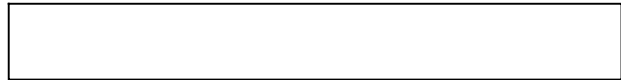
AB - A modular prefabricated kitchen/bath/utility **system** is disclosed for home or apartment installation. The **system** is provided with all utility services and may be built in three sections or modules for ease of transportation and introduction into a building or built as a **single** section. A first module is made up of two open-ended, back-to-back units, one unit supporting a range/oven unit, adjacent under-counter storage and overhead cabinet storage and the other back-to-back unit incorporating a space heating



unit and a hot **water** heating unit. A second module adapted to fit adjacent the first module incorporates space for a refrigerator, under-counter cabinet storage and overhead cabinet storage with a counter and sink unit covering the under-counter cabinet storage units. A third module fits back-to-back against the second module and includes a one- **piece molded** tub/shower unit, an adjacent lavatory unit and a **water** closet. Wastewater **drainage** and **water** supply means are located in a space between the back wall of the third module and the back wall of the second module. The wastewater **drainage system** is operatively connected to the tub/shower unit, lavatory, kitchen sink and **water** closet. The **water** supply connections are also made so that, when the unit is installed, it can be quickly connected to existing sewer and **water** supplies. Access to the utility space is provided through a panel behind the **water** closet.

53/71 © EPODOC / EPO

PN - [WO2004007029](#) A1 20040122
 PNFP - WO2004007029 A8 20050317
 PR - US20020162618 20020606
 AP - WO2002US25755 20020816
 DT - **
 CT - |US| ISR (A1)
 [US6083142](#) A 20000704
 [A] (WILSON JEFFREY D [US]);
 [US5967901](#) A 19991019
 [A] (BRIGGS RICK A [US]);
 [US5820471](#) A 19981013
 [A] (BRIGGS RICK A [US])
 CCI - [A63B69/0048](#)
 CCA - [B05B17/08](#) ; [A63B2009/008](#)



PA - (A1 A8)
PACI LAERCIO [US]

TI - (A1 A8)
ARTIFICIAL WATERFALL CLIMBING
STRUCTURE

AB - (A1 A8)
The invention provides a unique interactive waterfall-climbing structure (10). The invention provides a tower, based on the use of polystyrene foam, cut into various shapes to create a series of descending depressions and ledges to simulate a waterfall. The foam **mold** is covered with fiberglass to form a rigid, solid **single** panel. A steel frame (26) is then attached to the one-**piece** fiberglass shell, allowing the structure to stand self-supported. The invention also provides a waterfall **system** including a dispensing tank (20) at the top to allow **water** to overflow outward and cascade down the climbing surface and a reservoir tank (20) to **collect** the **water**. The invention further provides a pump for re-circulating the **water** and a conduit to direct **water** from the reservoir upwardly to the dispensing tank.

54/71 © EPODOC / EPO

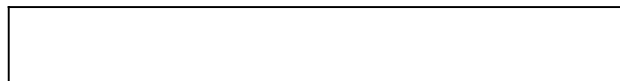
PN - [US6015489](#) A 20000118

PR - US19980009442 19980119

AP - US19980009442 19980119

DT - *

CT - [US506267](#) A []; [US672868](#) A [];
[US693511](#) A []; [US783556](#) A [];
[US1397471](#) A []; [US1666756](#) A [];
];
[US1711674](#) A []; [US3587239](#) A [];
];
[US3797188](#) A []; [US3881832](#) A [];
];



[US3914911](#) A []; [US3945746](#) A [];
[US4301557](#) A []; [US4345998](#) A [];
[US4356087](#) A []; [US4419323](#) A [];
[US4460462](#) A []; [US4561975](#) A [];
[US4594157](#) A []; [US4610566](#) A [];
[US4883590](#) A []; [US4935132](#) A [];
[US5024550](#) A []; [US5037541](#) A [];
[US5069781](#) A []; [US5130016](#) A [];
[US5223154](#) A []; [US5232587](#) A [];
[US5284580](#) A []; [US5376264](#) A [];
[US5403474](#) A []; [US5480254](#) A [];
[US5587072](#) A []; [US5702595](#) A [];
[FR2376918](#) A1 []; [GB470992](#) A []

- CCI - [E03F5/0404](#) ; [E03F5/046](#) ; [E03F5/06](#)
- PA - ALLEN LARRY J [US]; ALLEN BRIDGETT L [US]
- TI - Plastic self-relieving curb inlet filter
- AB - A self-relieving curb inlet filter, for intercepting debris, to be positioned in the opening of conventional pre-cast and cast-in-place curb inlets, for reducing **water** pollution in lakes, rivers, streams, and oceans. The present invention is one-piece molded apparatus with screened grid configuration of vertical and horizontal members spaced to allow liquids and small debris to go into the storm sewer **system** while intercepting large sized debris. The present invention permits accumulated

debris **collected** to be released into the storm sewer **system**, usually during heavy rainfall events, when flow/debris pressure, against the present invention, increases sufficiently to move/open the present invention. The present invention moves/returns to the original position when flow/debris accumulation pressure decreases from the present invention.

55/71 © EPODOC / EPO

PN - [KR20030041840](#) A 20030527

PNFP - KR100527800B B1 20051115

PR - JP20010355660 20011121

AP - KR20020072636 20021121

DT - I

CCI - [B29B17/02](#)

CCA - [B29K2105/065](#) ; [B29L2009/005](#) ;
[B29K2711/12](#) ; [B29K2033/18](#) ;
[B29L2031/744](#) ; [B29K2023/06](#) ;
[B29K2023/12](#) ; [B29K2025/00](#) ;
[B29K2027/06](#) ; [B29K2055/02](#) ;
[B29K2067/00](#) ; [B29K2067/006](#) ;
[B29K2069/00](#) ; [B29K2075/00](#) ;
[B29K2077/00](#) ; [B29K2081/06](#) ;
[B29B2017/0289](#) ;
[B29B2017/0436](#) ;
[B29B2017/0452](#) ; [B29K2027/00](#) ;
[Y02W30/521](#) ; [Y02W30/625](#) ;
[Y02W30/622](#)

PA - (A)
 TECHNO POLYMER CO LTD

TI - (A)
 CLEANING **APPARATUS** FOR
 POLYMER **PIECE**

- (B1)
APPARATUS FOR CLEANING
 POLYMERIC PIECES

AB - (A)
 PURPOSE: To provide a
 cleaning **apparatus** capable of
 sufficiently removing foreign

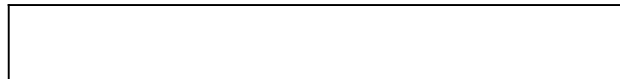


substances such as a coating film and a label from the surface of crushed pieces of a recovered polymer **molded** article.

CONSTITUTION: The cleaning **apparatus** has a cleaning tank 30 which is provided with a rotating shaft 35 in the longitudinal direction and has a **water** supply port 11a, a **drain** port 12a and a charging port 21 for polymer pieces, a discharge port 22 therefor, a screw part 41 which is provided for the rotating shaft and has a screw, and a flow passage regulating part 45 having a fixed plate which is so erected from the inside of the cleaning tank 30 as to suppress the advance of **water** brought about by the screw and of which the surface is roughened partially at least.

56/71 © EPODOC / EPO

PN - [JP2008180400](#) A 20080807
PR - JP20070012292 20070123
AP - JP20070012292 20070123
DT - I
FI - C02F1/66&510Q;
C02F1/66&521C;
C02F1/66&521D;
C02F1/66&530B;
C02F1/66&530K;
C02F1/66&530P; F24D17/00&G;
F24D17/00&H; F24D17/00&N;
F24D3/08&C; F24H1/14&B;
F24H1/52; F24H8/00;
F24H9/00&B
FT - 3L034/BA25; 3L034/BA26;
3L034/BB03; 3L034/BB06;
3L036/AA14; 3L070/BB03;
3L070/BB18; 3L070/BC02;
3L070/BC14; 3L070/CC03;
3L070/CC07; 3L070/CC08;
3L073/AA02; 3L073/AA13;
3L073/AA18



- PA - MATSUSHITA ELECTRIC IND CO LTD
- TI - HOT-**WATER** SUPPLY HEATING DEVICE
- AB - PROBLEM TO BE SOLVED: To reduce the dimension and weight of an **apparatus** and to improve efficiency by performing hot-**water** supply, air heating and bathing by a **single** heat source by combining a hot **water** supply heat exchanger and a latent heat recovery heat exchanger.
- SOLUTION: A hot **water** supply circuit is formed from a **water** supply passage 1 to a hot **water** supply passage 3 through the latent heat recovery heat exchanger 16 and the hot **water** supply heat exchanger 15, and a hot **water** supply circulation circuit 19 is formed so that hot **water** is taken out from the hot **water** supply heat exchanger 15, then supplied to a use-side heat exchanger 18, and returned to the latent heat recovery heat exchanger 16 through a circulation pump 17. A receiving pan 16j for receiving the dew condensation **water** is disposed at a lower part of the latent heat recovery heat exchanger 16, and a neutralizing device 42 is disposed to neutralize and discharge the received **water**. The neutralizing device 42 is composed of a neutralizer constituted by integrally **molding** a neutralizing agent charging chamber 42e of a trap structure and a **drain** passage 42f in a state of partitioned by a partitioning plate 42d, an electrode 42a disposed in a storage chamber, and a bypass circuit j raised higher than the electrode 42a and opened to the atmospheric air at its tip.

- COPYRIGHT: (C)2008,JPO&INPIT

57/71 © EPODOC / EPO

PN - [JP2008175333](#) A 20080731

PR - JP20070010583 20070119

AP - JP20070010583 20070119

DT - I

FI - F16F15/02&C; F16F15/08&K

FT - 3J048/AA02; 3J048/AD07;
3J048/BA17; 3J048/BA19;
3J048/BF02; 3J048/DA01;
3J048/EA36

PA - BRIDGESTONE CORP

TI - VIBRATION-PROOFING
APPARATUS, AND ITS
MANUFACTURING METHOD

AB - PROBLEM TO BE SOLVED: To
provide a vibration-
proofing **apparatus**
preventing **water** from staying
on a rubber elastic body 17
without complicating the
manufacturing process.

- SOLUTION: In a cab mount 10,
the upper end face of an elastic
connecting body 66 is below an
upper end of a supporting fitting
40 and an upper end of a holder
fitting 62, and the elastic
connecting body 66 has a
recessed section 76 formed on
the upper end face thereof. Even
when **water** enters onto the
elastic connecting body 66,
this **water** is discharged
downward through a **water drain**
hole 96 of the elastic connecting
body 66 and a through-hole 98
of a damper stopper section 48,
preventing the **water** from
staying in the recessed section
76 (on the elastic connecting
body 66). The **water drain** hole
96 is formed by using a **single**
mold pin at the time of
the **molding**, preventing
occurrence of burr or the like of



rubber which must be removed
at the subsequent processes.
- COPYRIGHT: (C)2008,JPO&INPIT

58/71 © EPODOC / EPO

PN - [JP2003211517](#) A 20030729

PR - JP20020009941 20020118

AP - JP20020009941 20020118

DT - I

FI - B29C47/02; E02D3/10&103

FT - 2D043/DA09; 4F207/AG03;
4F207/AH43; 4F207/KA01;
4F207/KA17; 4F207/KW41

PA - KYOWA SHIZAI KK

TI - METHOD FOR
MANUFACTURING **DRAIN**
MATERIAL FOR IMPROVING
GROUND AND
MANUFACTURING **APPARATUS**
THEREFOR

AB - PROBLEM TO BE SOLVED: To
provide a method for
manufacturing a **drain** material
for improving the ground,
capable of shortening a
manufacturing process for
the **drain** material for improving
the ground by dispensing with a
cooling process for curing the
core material of the **drain**
material before the fusion-
bonding of a nonwoven fabric to
the core material and a process
for reheating the surface of the
core material, and a
manufacturing **apparatus**
therefor.

- SOLUTION: The method for
manufacturing the **drain** material
for improving the ground
comprises a process for **molding**
the core material 2 having a
plurality of **water** passing
groove parts 4 provided to
the **single** surface or both
surfaces thereof by
extrusion **molding** and fusion-



bonding the nonwoven fabric 3
to the **single** surface or both
surfaces of the core material 2
while guiding the **water** passing
groove parts 4 of the core
material 2 by a guide part 13
before the curing of the extruded
core material 2.

- COPYRIGHT: (C)2003,JPO

59/71 © EPODOC / EPO

- PN - [JP2003154522](#) A 20030527
- PNFP - JP3681677B B2 20050810
- PR - JP20010355660 20011121
- AP - JP20010355660 20011121
- DT - I
- CCI - [B29B17/02](#)
- CCA - [B29K2105/065](#) ; [B29L2009/005](#) ;
[B29K2711/12](#) ; [B29K2033/18](#) ;
[B29L2031/744](#) ; [B29K2023/06](#) ;
[B29K2023/12](#) ; [B29K2025/00](#) ;
[B29K2027/06](#) ; [B29K2055/02](#) ;
[B29K2067/00](#) ; [B29K2067/006](#) ;
[B29K2069/00](#) ; [B29K2075/00](#) ;
[B29K2077/00](#) ; [B29K2081/06](#) ;
[B29B2017/0289](#) ;
[B29B2017/0436](#) ;
[B29B2017/0452](#) ; [B29K2027/00](#) ;
[Y02W30/521](#) ; [Y02W30/625](#) ;
[Y02W30/622](#)
- FI - B08B3/04&Z; B29B13/10;
B29B15/06; B29B17/00
- FT - 3B201/AA46; 3B201/AB02;
3B201/BA04; 3B201/BB02;
3B201/BB21; 3B201/BB83;
3B201/BB87; 3B201/BB92;
4F201/AA50; 4F201/BA09;
4F201/BC02; 4F201/BC25;
4F201/BC37; 4F201/BK69;
4F201/BP27; 4F201/BQ16;
4F201/BQ45; 4F401/AA03;
4F401/AA08; 4F401/AA09;
4F401/AA10; 4F401/AA11;
4F401/AA12; 4F401/AA13;
4F401/AA17; 4F401/AA18;
4F401/AA22; 4F401/AA23;
4F401/AA24; 4F401/AA25;



4F401/AA26; 4F401/AA28;
4F401/AC05; 4F401/AC06;
4F401/AC13; 4F401/AD02;
4F401/BA13; 4F401/CA02;
4F401/CA03; 4F401/CA14;
4F401/CA17; 4F401/CA19;
4F401/CA25; 4F401/CA28;
4F401/CA35; 4F401/CA48;
4F401/CB15

- PA - (A)
TECHNO POLYMER CO LTD
- TI - (A)
CLEANING **APPARATUS** FOR
POLYMER **PIECE**
- AB - (A)
PROBLEM TO BE SOLVED: To
provide a cleaning **apparatus**
capable of sufficiently removing
foreign substances such as a
coating film and a label from the
surface of crushed pieces of a
recovered polymer **molded**
article. SOLUTION: The
cleaning **apparatus** has a
cleaning tank 30 which is
provided with a rotating shaft 35
in the longitudinal direction and
has a **water** supply port 11a,
a **drain** port 12a and a charging
port 21 for polymer pieces, a
discharge port 22 therefor, a
screw part 41 which is provided
for the rotating shaft and has a
screw, and a flow passage
regulating part 45 having a fixed
plate which is so erected from
the inside of the cleaning tank 30
as to suppress the advance
of **water** brought about by the
screw and of which the surface
is roughened partially at least.

60/71 © EPODOC / EPO

- PN - [JPH09324729](#) A 19971216
- PR - JP19960166847 19960606
- AP - JP19960166847 19960606
- DT - I



FI - F02N11/00&T

PA - MITSUBA CORP

TI - **DRAINING** STRUCTURE OF
STARTING **SYSTEM** FOR ENGINE

AB - PROBLEM TO BE SOLVED: To carry
out the **water**-proof for a
solenoid in the starting **system**
for an engine with a simple
structure. SOLUTION: A **draining**
hole 12 having a **water** drop port
opening to a bottom surface
which is the lowest part in the
installation state of a casing 5
for forming the shift room of a
starter is provided and a
tongue **piece** shape check valve
13, by which the valve of
the **draining** hole 12 can be
closed, is formed by an
integral **molding** in the plunger
cover 14 of a magnet switch 7.
The check valve 13 is opened by
the own weight of **water** stored
in the casing 5 after being
sucked in at the flooding and
cooling time and dropped in
the **water** drop port and **water** is
discharged to the outside.
The **water** reversely streamed
from the outside can be
obstructed by the elastic
repulsion force in the valve close
direction of the check valve 13.

61/71 © EPODOC / EPO

PN - [JPH02311394](#) A 19901226

PR - JP19890132484 19890525

AP - JP19890132484 19890525

DT - I

FI - C23C14/34; C23C14/34&A;
C30B11/00&Z; C30B29/02

FT - 4G050/DB14; 4G050/DB26;
4G077/AA02; 4G077/BA01;
4G077/CD00; 4G077/EG15;
4G077/EJ03; 4G077/HA20;
4G077/MB14; 4G077/MB26;
4K029/BA02; 4K029/BD02;



4K029/DC03; 4K029/DC08

PA - DAIDO STEEL CO LTD

TI - WTARGET MATERIAL

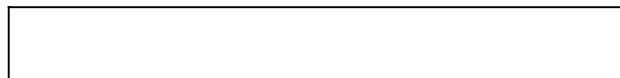
AB - PURPOSE:To provide an easily machinable target material having low content of impurity elements and giving a high-quality W thin film by using a giant **single** crystal of W produced by electron beam melting process and forming a target material for sputtering, etc., from the **single** crystal.

CONSTITUTION:The melting raw material rod 2 to be used in the present process is made of a W metal material such as sintered material produced by powder metallurgy and preferably subjected to melting and solidifying process. The lower end of the rod 2 is irradiated with electron beam EB1 generated by an electron beam irradiation **apparatus** 4. The surface of the raw material 2 is melted and the molten drops 2a fallen from the lower end of the raw material rod 2 is **collected** and continuously cast by the use of a cylindrical **water-cooled mold** 6 for conventional continuous casting use. Concretely, a block 8 made of W metal is placed in a **water-cooled mold** 6. The molten drops 2a are **collected** on the block 8 to form a pool 10 of molten liquid and the pool is solidified by cooling from the circumference with the **water-cooled mold** 6. At the same time, the block 8 is slowly lowered to continuously produce an ingot 12.

62/71 © EPODOC / EPO

PN - [JPH09304565](#) A 19971128

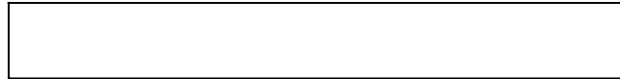
PNFP - JP3897313B B2 20070322



PR	- JP19960125749 19960521
AP	- JP19960125749 19960521
DT	- I
FI	- G21B1/00&D; G21B1/00&C+ZAA; G21B1/05; G21B1/17&B; G21B1/17&C
PA	- (A) TOSHIBA CORP
TI	- (A) SHIELD DEVICE OF NUCLEAR FUSION APPARATUS
AB	- (A) PROBLEM TO BE SOLVED: To facilitate the assembling and disassembling work and obtain an inexpensive and high reliable shield capacity by constitution a shield device so that cooling water can be introduced in the many holes of a porous block made by compacting small metal substance which is raw material. SOLUTION: A porous metal block 10 made by compacting a small metal substance such as spherical, cylindrical and piece -like shape which is raw material is disposed between an inside wall 1 and an outside wall 2. Sub- channels 11, 12 are provided on the block 10, and constitution is performed in that cooling water can be supplied and drained in the many holes 13 of the block 10 from the sub-channels 11, 12. The many holes 13 are reticulate, they are connected to one another in the holes 13, and the block 10 is molded so that they are flow passages of cooling water . After the general part of the vacuum vessel welds a poloidal rib to the inside wall, the block 10 is inserted by a cassette type and thereafter the outside wall 2 is stuck to make the block 10.

63/71 © EPODOC / EPO

PN - [JP559202823](#) A 19841116
PNFP - JPH0361577B B2 19910920
PR - JP19830077827 19830502
AP - JP19830077827 19830502
DT - I
CCI - [B29C44/445](#)
CCA - [B29C33/442](#)
FI - B29C33/00&X
FT - 4F012/XX00
PA - (A)
KANEGAFUCHI CHEMICAL IND
TI - (A)
METHOD AND **APPARATUS** FOR
RELEASING **MOLDED** SHAPE
FROM **MOLDS** IN **MOLDING**
THERMOPLASTIC FOAMING RESIN
IN **MOLDS**
AB - (A)
PURPOSE:To suck and hold
a **mold piece** securely to the
cavity side as a condition to take
out the **molded piece** by making
the negative pressure level of a
cavity side vapor chamber
higher than that of a core side
vapor chamber when **molds** are
opened completely.
CONSTITUTION:After a **molded**
shape 3 is completed in **molds**,
the **molds** are cooled, an exhaust
port 12', a **drain** port 12, a vapor
pipe 7, etc. are closed, the
negative pressure level in a core
side vapor chamber 6' is made
higher than that in a cavity side
vapor chamber 6 to move
slightly the core 2 sucking
the **molded** shape 3 in the **molds**
toward the core 2 side, inducing
the atmospheric air into the
space between the cavity 1 and
the **molded** shape 3, **water** suck
to the side of the cavity of
the **molded** shape 3 is



discharged into the vapor chamber 6 by sucking the atmospheric air into the vapor chamber 6 through slit 4.... Thereafter, the core 2 is moved to close the **molds**, the negative pressure level of the vapor chamber 6 is made higher than that of the vapor chamber 6', the **water** stuck to the core side of the **molded** shape 3 is discharged into the vapor chamber 6', then, the core is moved further, to open the **molds** completely and take out the **molded** shape 3 with an ejector pin 16.

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PN - [JPS60215915](#) A 19851029
 PNFP - JPH0229806B B2 19900703
 PR - JP19840073788 19840411
 AP - JP19840073788 19840411
 DT - I
 CT - || STSE (A)
[JPS6070634U](#) U 19850518 []
 CCI - [E02D3/10](#)
 FI - E02D3/10&103
 FT - 2D043/DA09; 2D043/DC14;
 2D043/DD03; 2D043/DD13;
 2D043/EB04
 PA - (A)
 KINJIYOU GOMU KK
 TI - (A)
 METHOD AND **APPARATUS** FOR
 MANUFACTURING **DRAINING**
 MATERIAL WITH **PIECE** TO BE
 DETECTED
 AB - (A)
 PURPOSE:To manufacture
 a **draining** material with good
 efficiency by a method in which
 pieces to be detected are put at
 almost equal intervals on a resin
 base plate with uneven surface,
 being traveled horizontally, and



a **water**-permeable sheet is continuously bonded to the base plate being traveled orderly from the downstream side.

CONSTITUTION: A synthetic resin base plate 10 is continuously formed by an extruder **molding** machine 2, and pressed rotationally by a pair of roll dies 21 having uneven surface and back faces to form an uneven pattern on the surface of the base plate 10. Pieces 12 to be detected are attracted by the suction pad 34 of a **piece** supplier 3 and put at equal intervals on the base plate 10. Sheets 11 are laid on both sides of the base plate 10 from rolls 11a and hot-bonded continuously.

65/71 © EPODOC / EPO

- | | | |
|-----|--|-------------|
| PN | - GB192701 A 19230802 | <div></div> |
| PR | - FRX192701 19220203 | |
| AP | - GB19230002926 19230131 | |
| DT | - * | |
| CCI | - B67C3/16 | |
| IDT | - 64B22A | |
| PA | - EMILE BRUMM | |
| TI | - Improved apparatus for filling bottles and other receptacles with gaseous liquids or the like and corking the receptacles | |
| AB | - 192,701. Brumm, E. Feb. 3, 1922, [Convention date]. Bottling; corking.-Relates to apparatus for filling bottles &c. with liquids or other substances that are liable to be impaired through contact with the air and for corking the receptacles, the apparatus being of the kind in which the drawing off occurs at a constant pressure and wherein a vacuum is first formed to remove the air from a bottle and then the bottle is | |

charged with an inert gas before connecting it with the vessel containing the liquid &c. to be bottled. The operations of forming the vacuum in a bottle and of the subsequent filling of the bottle with neutral or inert gas are effected in a series of bottles by one and the same distributing appliance fixed in the interior of the drawing-off appliance and connected to a central conduit. The invention is described in connection with the bottling of a mineral **water** the salts of which are precipitated when the **water** is drawn off in the open air. The pipe 7, Fig. 1, leading from the bell 6 of the gasholder 2 is connected by a branch pipe 8 to the bottling-**apparatus** 9 and by a pipe 10 to the inert-gas distributor 64 of the pressure box 11 of the stopping or corking machine 12. The pipe 7 may also be connected, between the holder 2 and **apparatus** 9, through a joint 7<a> with a storing tank 13. When a sufficient quantity of gas is evolved from the spring, the tank 13 is dispensed with and the holder 2 connected directly to the **apparatus** 9 by a pipe 15a fitted with a valve 16. The vacuum pump 18 is connected by a pipe 19 to a vacuum distributor within the **collector** of the **apparatus** 9, and by a pipe 20 with the distributor 64 of the corking-**apparatus** 12. Figs. 2 and 3 are views of the bottling-device. The supply-tube 22 is connected to a hollow **pillar** 21 having a central chamber 24 and two semi-circular chambers 28, 30. The rod 25 of a float 26 passes through the chamber 24 to a valve 27 to regulate the

height of liquid in the **collector**. The chamber 28- opens at its lower part into the **collector** and carries at its upper part a nozzle 29 for connection with the gas pipe 8. The chamber 30 is connected at its upper end by a nozzle 31 with the pipe 19 and its lower end by a nozzle 32 and joint 33 to the stationary distributor 24. A support 35 at the bottom of the **pillar** 21 carries spring-pressed pushers 36 which force a slide 37 against the ports 53 of the rotary **collector**.. Similar pushers 41 carried by uprights 40 on the support 35 act upon the distributor 34. The bottles 46 are supported on foot-levers 47, Figs. 1 and 3, provided with returning springs 48, and their necks are pressed against india-rubber joints 49 connected with casings 50 which are movable along noses 45 against the action of springs 55. A pipe 52 within each nose 45 connects the interior of the bottle with the pipe 43 bored through the **collector** and terminating at the level of the distributor 34. With the machine revolving in the direction indicated by the arrow in Fig. 3, over the sector 38 to 39 closed by the slide 37 the bottles are isolated from the gas and liquid supplies and can be removed and replaced by others. In the sector 39 to 39<a> the bottles are in communication with the pump 18 through a recess 34<a> of the slide and pipes 33, 30, 31, 19. The plain or full part 39<a> to 42 of the slide 34 closes the hole of the corresponding channel 43 and cuts the bottle off from the pump, and beyond

this part the bottle communicates with the upper part of the body A of the device and is filled with inert gas through the channels 43, 52. At the point 44 of the stationary distributor 37, the bottle communicates through the duct 54 of the nose 45 and the duct 53 of the **collector** with the liquid in the device. 'The liquid flows into the bottle until its level reaches the upper lip of the port 52a of the duct 52. The plate 56 is driven through two fingers 57, the tapered lower ends of which enter grooves at the top of a cram or ring 58 connected by screws 59 to a driving-wheel. The corking- **apparatus** 12 has two stations for the introduction of corks, the filled bottles being placed in cups or bowls 60 on rotary supports 59<a>, and the pressing-device is of ordinary pattern. The device 11 having received a cork 63, Fig. 6, from the corresponding hopper 58<a>, the plunger 67 forces it into the passage 63a so as to leave a small space between the stopper and the lower face of the box 11; the bottle is pressed against the joint 62a, and the small closed chamber thus constituted communicates by the channel 61, 61a and port 61 with the pipe 20 leading to the pump when the distributor 64 is in the position shown in Fig. 6. The revolving distributor 64 next places the port 61a in communication with the gas pipe 10 by a port 61<c> so that the vacuum formed in the neck of the bottle is then filled with inert gas, whereupon the rod 67 descends and forces the cork into the bottle. 'The distributor 64 next cuts off the

pipes 10, 20 so that the bottle can be removed and replaced by another. In a modification with a **single** revolving bottle-holder, the two pressure boxes 11 are mounted on a device with a slide-valve which alternately brings them in line with the axis of the bottle-holder.

66/71 © EPODOC / EPO

PN	- EP0774541 A1 19970521	
PNFP	- EP0774541 B1 20030806	
PR	- WO1995MX00003 19950502; US19940236451 19940502	
AP	- EP19950918774 19950502	
DT	- *	
CCI	- D21F1/02 ; D21F1/20 ; D21F1/483 ; D21F7/001 ; D21F9/02 ; D21F11/04	
PA	- (A1 B1) SMURFIT CARTON Y PAPEL MEXICO [MX]	
TI	- (A1 B1) INCLINED PLANAR FORMER FOR PRODUCING PAPER SHEET UNDER THE FELT FOR THE PRODUCTION OF MULTILAYER OR SINGLE -LAYER PAPER	
AB	- (A1) The equipment of the present invention serves to form a sheet of paper under the felt line, this sheet can be for monolayer or multilayer paper, the paper sheet so formed has superior characteristics to that of a sheet made in a fourdrinier manufacturing table. The fiber suspension is distributed through a head box over the forming table, allowing the fiber to freely orient according to the jet/fabric speeds rate, and to the hydraulic pattern generated by the forming activity lip. The	

effect generated by the activity lip is supplemented by the pulse forming roll allowing the fibers to orient freely or in a controlled fashion according to the roll speed. The **water** remaining in the fiber suspension is **drained** in a box divided in three vacuum compartments, to reach a fixed dryness to make contact with the prior unit sheet or with the felt in the case of being the first unit. The equipment comprises a forming table in which the tilt can be adjusted according to manufacturing requirements, this forming table comprises a fabric to form the paper sheet, a breast roll also serving as fabric stretcher, forming and dewatering foils, a pulse forming roll, flat boxes, a cylinder **mold**, a guide roll and control elements, support structures to support the former equipment, **water collection** trays, rails and rolls for maintenance of the former equipment, which allows the unit to be removed of service without halting production. The equipment also comprises a fiber distribution head box oriented towards the formation table, as well as a suction slider to extract **water** from the inner part of the felt. It also is provided with a rubber couch roll which presses the felt and the sheet in such a manner that the paper sheet adheres to the felt and can be transferred to the next formation unit. The couch roll is provided with a mechanism for setting position against the cylinder **mold** shaft, as well as with a bellows **system** to raise the cylinder **mold** or to apply pressure against said

cylinder **mold**. The equipment comprises showers to keep clean the support roll, the fabric and the breast roll. A doctor blade is located in the breast roll, for keeping the roll clean and to divert the **water drained** in this zone to a tray. This unit has a **system** comprising two vertical structures and a lengthwise beam to provide rigidity thereto.
<IMAGE>

67/71 © EPODOC / EPO

- PN - [DE102007001416](#) B3 20080228
- PR - DE20071001416 20070109
- AP - DE20071001416 20070109
- DT - *; Rep
- CT - || STSE (B3)
[DE102005055053](#) A1 20070524 [] (GOECKELMANN-PESCHANGELIKA [DE]);
[DE19854090](#) A1 20000525 [] (LOH KG HAILO WERK [DE]);
[AT169214B](#) B 19511025 [] (FRANZ MOESSLANG & CO);
[EP1321567](#) B1 20060531 [] (LEIFHEIT AG [DE])
- CCI - [D06F81/10](#)
- PA - LEIFHEIT AG [DE]
- TI - Ironing table lowering humidity by condensing steam, includes lightweight foamed-metal ironing panel, cast-in fastenings, and condensate **collection system**
- AB - The panel (2) of the ironing table (1) is made using metal foam, especially aluminum or one of its alloys. It alternatively contains iron or copper. The table includes additional components which are permanently cast onto or into it. These are fastenings (3) for attachment of accessories, such as an iron rest. The stand (4) frame is attached to them. The additional components can form



parts of the stand or accessory.
 There are recesses in the underside of the table, into which components of the stand are inserted. The table panel is manufactured in a **single piece**, as a **molding**. The metal foam is open- or closed-pored. The table is permeable or impermeable to steam. The design is such that steam used during ironing, condenses in the table.
 A **collection** vessel (5) intercepts the condensed **water**. The vessel is a pan and/or sheet underneath the metal foam.

68/71 © EPODOC / EPO

- PN - [CN2562739Y](#) Y 20030730
- PR - CN2002273007U 20020902
- AP - CN2002273007U 20020902
- DT - I
- PA - SHENZHEN HOSPITAL BEIJING UNIV [CN]
- TI - Medical multifunctional **water** receptor
- AB - The utility model discloses a medical multifunction drop pan, comprising a trumpet body **collecting** liquid, a liquid **collection** barrel arranged on a lower opening of the trumpet body, a handle arranged on the lower part of the trumpet body, a **water** outlet arranged on the lower end of the liquid **collection** barrel and a fastening strip arranged on the upper edge of the trumpet body, wherein the trumpet body, the liquid **collection** barrel and the handle are in one-**piece** injection **molding**. The utility model has the advantages of having novel imagination, applying the human factors engineering design,



scientifically **collecting** flushing liquid, effectively changing the posture of a patient, avoiding the inconvenience of the dizziness, the ache on neck and back parts and the crying of an ill child caused by the long period of the head-lowering treatment of the patient. The utility model has the advantages of low cost and convenient use; moreover, the utility model is only used for one patient once and is immediately disinfected after use, which effectively prevents the cross infection; therefore, the utility model can be used as the **apparatus** for **water collection** in the diagnosis and the treatment of otolaryngological diseases and popularized to use.

69/71 © EPODOC / EPO

PN - [CA2265104](#) A1 20000909

PR - CA19992265104
19990309; EP19990104683
19990309; DE1997138488
19970904

AP - CA19992265104 19990309

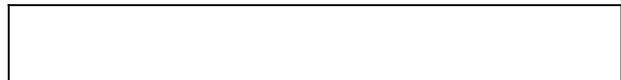
DT - **

CCI - [E21D11/383](#) ; [E21F16/02](#)

PA - FOSROC INTERNATIONAL LTD [GB]

TI - **DRAINAGE SYSTEM** FOR TUNNELS

AB - A tunnel **drainage system** comprises a plurality of plastic parts connected together in the form of: shaped lengths, each with an arched profile having a ribbed surface contour and an angled substantially flat lateral section on each side; and a plurality of **molded** parts for coupling the shaped lengths to each other, and to one or more main **collection** conduits. The shaped lengths, and coupling



parts are made of from high impact and tear resistance high density polyethylene (HDPE) preferably between about 0.8 - 1.5 mm thick using a deep draw process in which films or boards of HDPE are drawn by vacuum over a positive form. **Single** spaced ribs, typically wider than the ribs of the ribbed surface contour of the shaped lengths, may extend across the shaped lengths including the otherwise substantially flat lateral sections. The coupling parts and **collection** conduit may have ribs similar to those of the shaped lengths. The **system** of the invention maintains a proper, sealed, long-life **water** passage for **draining water** from a tunnel even when covered with shotcrete used in tunnel construction.

70/71 © EPODOC / EPO

PN - [CA1233331](#) A 19880301

PR - US19830566789 19831229

AP - CA19840470745 19841220

DT - I

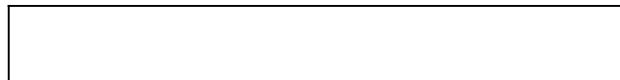
CCI - [F25D21/14](#) ; [F25D23/006](#)

CCA - [F25B2500/13](#)

PA - GEN ELECTRIC

TI - HOUSEHOLD REFRIGERATOR
COMPRESSOR VIBRATION
ISOLATOR AND
CONDENSATE **COLLECTING** TRAY

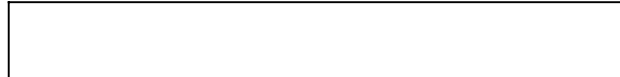
AB - A HOUSEHOLD REFRIGERATOR
COMPRESSOR VIBRATION
ISOLATOR AND
CONDENSATE **COLLECTING** TRAY A
high-side portion of a
refrigeration **system** is
supported on a
condensate **collecting** tray
formed in a **single piece**
of **molded** plastic which



includes in combination a condensate **water** overflow containment area and a drop-in rotary compressor mounting arrangement wherein the compressor is resiliently supported in the overflow containment area with its axis in a vertical position in a manner which provides torsional and vertical vibration isolation, the containment area being dimensioned so that only an overflow of condensate **water** will come in contact with the compressor.

71/71 © EPODOC / EPO

- PN - [CA1105201](#) A 19810721
- PR - US19790028572 19790409
- AP - CA19800347678 19800314
- DT - I
- CCI - [A47K4/00](#) ; [E04B1/34869](#)
- PA - BAIN WILLIAM J
- TI - PREFABRICATED KITCHEN-BATH UTILITY **SYSTEM**
- AB - TITLE PREFABRICATED KITCHEN-BATH UTILITY **SYSTEM** A modular prefabricated kitchen/bath/utility **system** is disclosed for home or apartment installation. The **system** is provided with all utility services and may be built in three sections or modules for ease of transportation and introduction into a building or built as a **single** section. A first module is made up of two open-ended, back-to-back units, one unit supporting a range/oven unit, adjacent undercounter storage and overhead cabinet storage and the other back-to-back unit incorporating a space heating unit and a hot **water** heating unit. A second module adapted



to fit adjacent the first module incorporates space for a refrigerator, under-counter cabinet storage and overhead cabinet storage with a counter and sink unit covering the under-counter cabinet storage units. A third module fits back-to-back against the second module and includes a one- **piece molded** tub/shower unit, an adjacent lavatory unit and a **water** closet. Wastewater **drainage** and **water** supply means are located in a space between the back wall of the third module and the back wall of the second module. The wastewater **drainage system** is operatively connected to the tub/shower unit, lavatory, kitchen sink and **water** closet. The **water** supply connections are also made so that, when the unit is installed, it can be quickly connected to existing sewer and **water** supplies. Access to the utility space is provided through a panel behind the **water** closet.