



New connection on: : 07-11-2017 : 20:19:10 - Last disconnection on: : 07-11-2017 : 15:55:26

V 4.0.0.44176(LP,U,linux) (Rev:41675 2016-01-15 13:33:59 +0100#(D201713)) (RPM D201713)

Welcome to EPOQUE Rebuild under the Production Environment

[PATENW: SS 7] (moist+ or humid+) and water

Results in PATENW **1.864.606**

[SS 8] ..fi

Select a database: ..FI EPODOC

 Database: EPODOC

[EPODOC: SS 1] (moist+ or humid+) and water

Results in EPODOC **191.164**

[SS 2] 1 and (dewater+ or dehumid+ or desic+)

Results in EPODOC **7.347**

[SS 3] 2 and heat+

Results in EPODOC **3.714**

[SS 4] 3 and (ambient or air)

Results in EPODOC **2.834**

[SS 5] 4 and (vacuum or void)

Results in EPODOC **45**

[SS 6] 5 and liquid

Results in EPODOC **11**

[SS 7] ..li



1/11 © EPODOC / EPO

PN - [CN106800320](#) A 20170606

PR - CN2017116073 20170110

AP - CN2017116073 20170110

DT - I

CNOI - [C02F1/043](#) ; [C02F1/10](#) ; [C02F1/14](#)

CNOA - [C02F2103/08](#) ; [C02F2209/42](#) ; [C02F2301/046](#)

PA - UNIV NORTHWESTERN POLYTECHNICAL

TI - **Heat** accumulating type **humidification** and **dehumidification** solar seawater desalination system and technological method thereof

AB - The invention discloses a **heat** accumulating type **humidification** and **dehumidification** solar seawater desalination system and a technological method thereof. A **heat** tube-vacuum tube type solar thermal collector is used for directly **heating** the **air** and the seawater in a bubbler; a porous bubbling discharge pipe is dipped into the seawater so as to enable the **air** to bubble and **humidify** adding in the seawater in a spraying way; a **humidifier** is simple in structure, and easy to processing, disassembly and descaling. The condensation latent **heat** of vapor is recovered by the lower part of a fin inorganic **heat** tube in a **dehumidifier** and is then transmitted to a phase-change material and the seawater; part of the **heat** is used for **heating** and **humidifying** the **air** above a seawater desalter by means of the seawater desalter so as to generate fresh **water**, and the other part of **heat** is stored in a solid-liquid form and is released out at night; therefore, the condensation latent **heat** utilization rate and the fresh **water** yield are higher. The phase-change material is used for storing **heat**, so that the temperature at a **heat** exchange cold end of the **heat** tube is constant, and the **heat** exchange effect is good. A power grid or an independent photovoltaic power generation system is used for supplying power for the seawater desalination system, so that the seawater desalination system is flexible in scale and wide in application range, and can be used for desalting the coastal and island seawater and desalting the bitter salt **water** in inland remote and border areas.

2/11 © EPODOC / EPO

PN - [CN105540636](#) A 20160504

PR - CN20151935853 20151215

AP - CN20151935853 20151215

DT - I

CT - || STSE (A)
[CN2094377U](#) U 19920129 [Y] (GUO WEI [CN])
[Y] 1-4
* 说明书第2页第7行至第3页第2行及附图1 *;
[CN104689637](#) A 20150610 [Y] (HANDAN TONGDA MINE USED ELECTRICAL APPLIANCE CO LTD)
[Y] 1-4
* 说明书第[0025]、[0015]段及附图1 *

CNOI - [C02F11/12](#) ; [C02F11/121](#)

CNOA - [C02F2303/06](#)

PA - JINJIANG SHILONG KITCHEN EQUIPMENT CO LTD

TI - Sludge **dewatering** and drying method

AB - The invention provides a sludge **dewatering** and drying method. The method comprises the following steps: a pressurization apparatus enhances pressure in an upper tank, a **vacuum** tank reduces pressure in a lower tank to a **vacuum** state, so that

a large pressure difference is formed between the upper tank and the lower tank; **water** in mixed **liquid** with sludge containing **water** in the upper tank can rapidly pass a filter layer, and the sludge remains in the upside of the filter layer; the pressure difference formed between the upper tank and the lower tank ensures rapid solid- **liquid** separation; after the solid-**liquid** separation finishes, a microwave emitter is started for emitting microwave, action between microwave and **water** molecules in the sludge is carried out for **heating**, so that **moisture** in the sludge diffuses and volatilizes to **air**, and efficacy for drying sludge is realized.

3/11 © EPODOC / EPO

- PN - [CN204987306U](#) U 20160120
- PR - CN20152312423U 20150514
- AP - CN20152312423U 20150514
- DT - I
- CCA - [Y02B10/22](#) ; [Y02B10/24](#)
- PA - ANHUI CHEARI ZHIRUI TECH CO LTD
- TI - Use multipurposely solar energy light and **heat** and photoelectrical technique's domestic dc -inverter **air** conditioning system
- AB - The utility model discloses an use multipurposely solar energy light and **heat** and photoelectrical technique's domestic dc -inverter **air** conditioning system, including solar energy optoelectronic system, solar energy light and **heat** system, **dehumidification** system, dc -inverter **air** conditioner and control system, solar energy optoelectronic system includes solar photovoltaic board, control module, battery and boost circuit, solar energy light and **heat** system includes solar **vacuum heat** collection tube, holding **water** box, **dehumidification heat** exchanger, changes white **heat** exchanger, circulating **water** pump, **dehumidification** system includes **dehumidifier**, **dehumidification liquid** storage pot, **dehumidification** system **heat** exchanger, solution circuit pump, regenerator and regeneration **liquid** storage pot, the dc -inverter **air** conditioner includes indoor set and off -premises station, control system includes temperature controller, **humidity** controller and electrical source controller. The utility model discloses an use multipurposely solar energy light and **heat** and photoelectrical technique's domestic dc -inverter **air** conditioning system can be **air** conditioning system **heat** supply and power supply, reduce advantages such as the demand of commercial power, energy savings for **heat** energy and electric energy solar energy conversion.

4/11 © EPODOC / EPO

- PN - [RU2534264](#) C1 20141127
- PR - RU20130126917 20130613
- AP - RU20130126917 20130613
- DT - I
- PA - FEDERALNOEG BYUDZHETNOE OBRAZOVATELNOE UCHREZHDENIE VYSSHEGO PROFESSIONALNOGO OBRAZOVANIYA VORON GU [RU]
- TI - CONTROL METHOD FOR PROCESSES OF DRYING AND STORAGE OF PLANT MATERIALS WITH INCREASED CONTENT OF FATTY ACIDS
- AB - FIELD: **heating**, drying.SUBSTANCE: invention relates to automation of technological processes of drying and storage of crops, especially oil-bearing-crops. The method comprises drying oscillating in the temperature regime of plant materials in gravitationally moving layer of shaft dryer consisting of alternating in series zones of **heating** and cooling; processing of raw materials with antioxidant and feeding it to

the silo storage with periodic active ventilation; supply of exhaust **air** after **heating** zones for preheating of plant materials; the discharge of the resulting steam-**air** mixture of the exhaust **air** after zones of cooling, preheating of plant materials and active ventilation in a cyclone for removal of suspended particulate matter comprised in it, followed by cooling and **dehumidifying** in the evaporator and **heating** first in the condenser of the **heat** pump and then in the **heater**; feeding of the prepared in a **heat** pump conditioned **air** to the zones of **heating** and cooling to form a closed loop, and stabilization of hydrothermal characteristics of the raw materials during drying and storage with impact on the flow rate, temperature and **moisture** content of the conditioned **air** supplied to the zones of **heating** and cooling of the dryer, and the flow rate of antioxidant depending on the flow rate of the dried plant raw material the novelty is the fact that after each **heating** zone mixing of plant raw material with an antioxidant is carried out, and for obtaining conditioned **air** the steam ejector **heat** pump is used, comprising a steam generator with electric **heating** elements and the safety valve, the ejector, the evaporator, the cold-receiver, the **heat**-exchanger-wasteheat exchanger, the condenser, the thermal expansion valve, the condensate collector working in a closed thermodynamic cycle; in the cold-receiver of the steam ejector **heat** pump the steam-**air** mixture is cooled to the dew point temperature and its **dehumidification** is carried out by condensation of **moisture** contained in it on the cooling surface of the cold-receiver in the form of droplet **liquid**; the resulting conditioned **air** from the cold-receiver is discharged in three flows: one is directed to the cooling zones of the dryer, the second for the active ventilation, and the third in series to the **heat**-exchanger-wasteheat exchanger, the condenser of steam ejector **heat** pump, the **heaters** and then to the **heating** zones of the dryer; in the steam generator working steam is obtained and fed in two flows, one of which is directed to **heaters** for additional **heating** the conditioned **air** prior to supply to the **heating** zones of the dryer, and the other - to the ejector nozzle, creating **vacuum** in the evaporator with lower temperature of the coolant boiling, which is used as **water**; the mixture of the coolant steams and working steam after ejector is fed to the condenser for **heating** the conditioned **air** prior to the **heaters**; one part of the condensate formed in the condenser is fed into the evaporator to replenish the loss of **water** and its another part to the **heat**-exchanger-wasteheat exchanger and further with the condensate formed in the cold-receiver and the **heaters** is first discharged into the collector of condensate, and then into the steam generator to form a closed loop; according to the current values of **humidity** of plant raw materials in the zones of **heating** the flow rate of the antioxidant is determined at the steps of mixing; according to the amount of **water** steam in the steam-**air** mixture after drying and silos the ejection coefficient of steam ejector **heat** pump is determined with the impact on the ratio of the working steam flow supplied to the ejector nozzle, and the ejected coolant steam from the evaporator by varying the flow rate of the working steam, and the productivity of the steam generator is determined based on the influence on power efficiency of its electric **heating** elements, depending on the working steam pressure supplied to the ejector.EFFECT: invention enables to provide stabilization of quality of plant raw materials with increased content of fatty acids.1 dwg

5/11 © EPODOC / EPO
 PN - [CN202393293U](#) U 20120822
 PR - CN20112525224U 20111215
 AP - CN20112525224U 20111215
 DT - I
 CCA - [Y02C10/04](#)

PA - UNIVSOUTHEAST

TI - Device for improving cooling effect of cooling tower by means of reducing **air moisture**

AB - The utility model relates to a device for improving the cooling effect of a cooling tower by means of reducing **air moisture**. The device is characterized by comprising a cooling **water** subsystem of a power plant, a CO2 trapping subsystem and a **liquid desiccant** subsystem, wherein the cooling **water** subsystem of the power plant and the CO2 trapping subsystem are integrated by the **liquid desiccant** subsystem, the cooling **water** subsystem of the power plant comprises the cooling tower (18), the CO2 trapping subsystem comprises an absorption tower (1), a rich liquor pump (2), a rich and barren liquor **heat** exchanger (3), a regenerating tower (4), a regenerative gas cooler (5), a gas-**liquid** separator (6), a barren liquor pump (7), a barren liquor **heat** exchanger (8), a reboiler (9), a barren liquor **water-cooling heat** exchanger (19) and a regenerative gas **water-cooling** cooler (20), and the **liquid desiccant** subsystem comprises a **dehumidifier** inlet fan (10). The **vacuum** degree of a condenser is improved, generating efficiency is increased, coal consumption is reduced, and the influence of a CO2 trapping system on power plant efficiency is decreased.

6/11 © EPODOC / EPO

PN - [US2004187999](#) A1 20040930

PNFP - US7261795 B2 20070828

PR - US20030745953
20031224; US20020436691P
20021227

AP - US20030745953 20031224

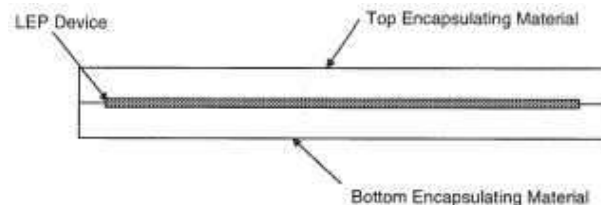
DT - **

CT - || STSE (B2)
[US6049167](#) A 20000411 [
] (ONITSUKA OSAMU [JP], et al)
[US6118426](#) A 20000912 [
] (ALBERT JONATHAN D [US], et
al)
[US6198217](#) B1 20010306 [
] (SUZUKI MUTSUMI [JP], et al)
[US6429584](#) B2 20020806 [
] (KUBOTA HIROFUMI [JP])
[US6573652](#) B1 20030603 [
] (GRAFF GORDON LEE [US], et
al)
- || R141 (A1)
[US5734225](#) A [];
[US6198217](#) B1 [];
[US6049167](#) A [];
[US6573652](#) B1 [];
[US6429584](#) B2 [];
[US6118426](#) A []

CCI - [H01L51/524](#) ; [H01L51/5253](#) ;
[H01L51/56](#)

CCA - [Y10T156/103](#) ; [Y10T156/109](#)

PA - (B2)



ADD VISION INC [US]

TI

- (A1)
Method for encapsulation of light emitting polymer devices and apparatus made by same
- (B2)
Method for encapsulation of light emitting polymer devices

AB

- (A1 B2)
A cost effective manufacturing process encapsulates a light emitting polymer (LEP) device between two flexible sheet materials, where one sheet may act as the substrate for the LEP device and the other sheet may act as a cover for the LEP device, and at least one of the sheets is transparent. Both encapsulating sheets and, as required, an adhesive system binding the sheets together provide sufficient environmental barriers with low **moisture** vapor transmission rates (MVTR) and oxygen transmission rates (OTR). The encapsulating sheets may, for example, be laminated together, sandwiching the LEP device in a **vacuum**, or oxygen/**moisture** free, and inert gas environment. Prior to encapsulation the LEP device may be **heated** and placed in a **vacuum** to remove **moisture**, **air** and residual solvents. The process may also be designed for roll to roll, sometimes called web based processing, where the LEP device and/or encapsulating sheet material are in a continuous roll format with an adhesive with low **air** permittivity, such as some UV or thermal curable epoxies, or a melt lamination process used to attach the encapsulating sheets. For LEP devices with short lifetime requirements, the

encapsulating material may be in **liquid** form and applied by spraying, dipping, doctor balding, and the like, or printing, such as screen printing, roller coating or lithographic application in single or multiple layers. Such material may also contain **desiccants** to further remove **water** and/or oxygen.

7/11 © EPODOC / EPO

PN - [WO2004061993](#) A2 20040722

PNFP - WO2004061993 A3 20041223

PR - US20020436691P 20021227

AP - WO2003US41398 20031224

DT - *; Rep

CT - [EP] ISR (A3)

[EP0751699](#) A2 19970102

[YA] (HEWLETT PACKARD CO [US])

[Y] 1,3,35

* column 2, line 45 - line 54 *

* column 3, line 5 - line 9 *

* column 5, line 2 - line 17 *

[A] 4,37,38;

[RU2123773](#) C1 19981220

[Y] (NEKOMMERCHESKOE

PARTNERSTVO PO, et al)

[Y] 1,3,35

* abstract *;

[WO0105205](#) A1 20010118 [A] (INST MATERIALS RESEARCH & ENG [SG], et al)

[A] 1,5-7,13,20,25,29,37

* page 9, line 13 - page 10, line 2;
claim - *;

[US5734225](#) A 19980331

[DA] (BIEBUYCK HANS [CH], et al)

[DA] 1,10,12,13,25

* column 4, line 64 - column 5,
line 40 *

CCI - [H01L51/524](#) ; [H01L51/5253](#) ;
[H01L51/56](#)

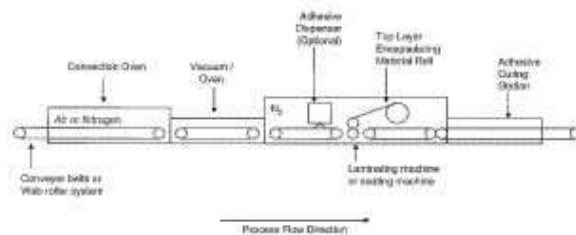
CCA - [Y10T156/103](#) ; [Y10T156/109](#)

PA - (A2 A3)

ADD VISION INC [US]

TI - (A2)

METHOD FOR ENCAPSULATION OF
LIGHT EMITTING POLYMER DEVICES
AND APPARATUS MADE BY SAME



- (A3)
METHOD FOR ENCAPSULATION OF
LIGHT EMITTING POLYME DEVICES
AND APPARATUS MADE BY SAME

AB - (A2 A3)
A cost effective manufacturing process encapsulates a light emitting polymer (LEP) device between two flexible sheet materials, where one sheet may act as the substrate for the LEP device and the other sheet may act as a cover for the LEP device, and at least one of the sheets is transparent. Both encapsulating sheets and, as required, an adhesive system binding the sheets together provide sufficient environmental barriers with low **moisture** vapor transmission rates (MVTR) and oxygen transmission rates (OTR). The encapsulating sheets may, for example, be laminated together, sandwiching the LEP device in a **vacuum**, or oxygen/**moisture** free, and inert gas environment. Prior to encapsulation the LEP device may be **heated** and placed in a **vacuum** to remove **moisture**, **air** and residual solvents. The process may also be designed for roll to roll, sometimes called web based processing, where the LEP device and/or encapsulating sheet material are in a continuous roll format with an adhesive with low **air** permittivity, such as some UV or thermal curable epoxies, or a melt lamination process used to attach the encapsulating sheets. For LEP devices with short lifetime requirements, the encapsulating material may be in **liquid** form and applied by spraying, dipping, doctor balding, and the like, or printing, such as screen printing, roller coating or lithographic application in single or multiple layers. Such material may also contain **desiccants** to further remove **water** and/or oxygen.

TXT - anneal

8/11 © EPODOC / EPO

PN - [JPH01139393](#) A 19890531

PNFP - JP2565519B B2 19961218

PR - JP19870296495 19871125

AP - JP19870296495 19871125

DT - I

FI - B65B3/04; B67C3/14

FT - 3E018/AA02; 3E018/AB06; 3E018/BA08; 3E018/CA07; 3E018/CA10; 3E018/EA01;
3E018/EA02; 3E079/AA04; 3E079/AA10; 3E079/AB06; 3E079/BB07; 3E118/AA02;
3E118/AB14; 3E118/BA20; 3E118/CA07; 3E118/CA20; 3E118/EA02; 3E118/EA03;
3E118/EA04

PA - (A)
YOSHINO KOGYOSHO CO LTD

TI - (A)
METHOD OF FILLING BOTTLE BODY WITH **HEAT**

AB - (A)
PURPOSE: To improve a **heat** resistance when the **heated liquid** is injected and filled for sterilization and pasteurization by performing the **dehumidifying** treatment for reducing the **water** content to a bottle formed by the blow molding of a biaxial oriented polyethylene terephthalate(PET) resin. CONSTITUTION: As a means for keeping the **moisture** content of a PET bottle body in a remarkably low condition immediately after the molding, e.g. a large amount of **dehumidifying** agent such as silica gel or the like is placed in a wall, the **dehumidifying** treatment is performed onto a wall outer face, and further the PET bottle body of small **moisture** content immediately after the molding, is stored and held in a large housing made of a synthetic resin and having a special structure for inhibiting the going in and out of the **air** as much as possible. Further as a means for forcibly **dehumidifying** the PET bottle body just before the **heat** filling, the PET bottle body is **dehumidified** to some degree by utilizing the **dehumidifying** agent or the like in advance, and the PET bottle body of comparatively small **water** content is forcibly **dehumidified** by a **vacuum** drier.

9/11 © EPODOC / EPO

PN - [GB478944](#) A 19380124

PR - USX478944 19350904

AP - GB19360011605 19360423

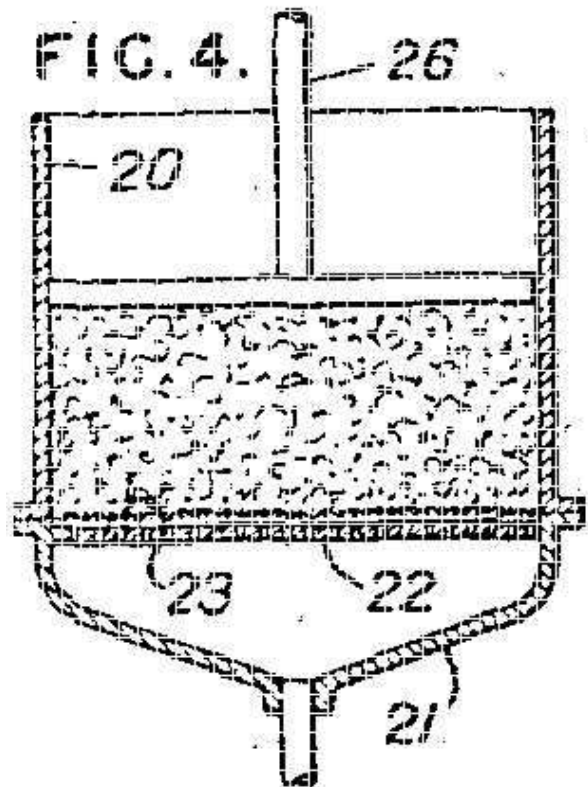
DT - *

CCI - [D21C9/083](#)

PA - CELLULOSE RES CORP

TI - System of obtaining and treating cellulose and product thereof

AB - <PICT:0478944/IV/1> A process for the preparation of highly purified reactive and permeable wood cellulose suitable for the production of paper or of cellulose derivatives, comprises producing or selecting a raw pulp obtained from wood by a relatively mild delignifying digestion process which causes no substantial degradation of the cellulose, chlorinating the pulp with no more than the amount of chlorine that will promptly react with the constituents of the pulp, removal of the chlorination products, bleaching with a hypochlorite solution and thereafter treating with an alkali solution of not less than 4 per cent strength under non-mercerizing conditions. Wood, e.g. spruce, may be subdivided, preimpregnated and digested with ammonium bisulphite liquor as described in Specification 478,943. The washed pulp so obtained is defibred, its consistency adjusted to 3--10 per cent and chlorine equal to 16 per cent of the bleachability added. For pulps with cuprammonium viscosities of less than 25 centipoises, more chlorine may be added. The chlorine treatment is continued for 45 minutes to allow acid formed to act upon the ash content of the cellulose. Sodium



hydroxide of not more than 7 per cent is then added, to bring the concentration in the slurry to 1 per cent, and the slurry **heated** to 100 DEG C. or just sufficient caustic soda is added to neutralize the pulp. It is then filtered, washed and neutralized if necessary. Calcium hypochlorite is added and the pulp treated at 20--25 DEG C. Variation of the temperature of this treatment enables the cuprammonium viscosity of the pulp to be regulated. The pulp is then washed, its consistency adjusted to 4--12 per cent and treated with 7 per cent caustic soda at 100 DEG C., presence of oxygen being avoided as far as possible. It is then washed until neutral. The pulp may then be mercerized with 10--18 per cent sodium hydroxide at 20--25 DEG C. and 4--12 per cent consistency. This mercerization treatment may replace the final alkali treatment and follow immediately after bleaching. The pulp is finally classified to remove fines in a rubber-lined tank with Alleghany metal agitators and an 80 mesh Alleghany metal screen cover, against which the pulp is thrown by the agitation. The wet cellulose is dehydrated in a tank 20, with detachable bottom 21, and a perforated Alleghany metal plate 22 covered with a 50 mesh Alleghany metal screen 23, **water** being sucked from the pulp to form a cake to which pressure is applied by a plunger 26. A second cake may be formed on top of this first one. When no more **water** can be drawn off, glacial acetic acid or some other suitable **liquid** employed in the manufacture of the cellulose

derivative is poured on top of the cake and allowed to soak into the pulp. Partial **vacuum** together if desired with pressure may be applied to pass the acid through the cake, displacing the **water**. By this means the pulp is maintained in wet swollen condition throughout the whole series of operations. The acid discharged from the cake is preserved for re-use and/or regeneration. The acid saturated cake is defibred, exposure to **air** being avoided, and then discharged into an acetylator and treated with glacial acetic acid and concentrated sulphuric acid. Not more than 2,2 parts of acetic anhydride are added to 1 part of cellulose, and the pulp is acetylated. At the desired viscosity, the acetylation is terminated by adding acetic acid of 50 per cent strength containing sulphuric acid, and the cellulose acetate is hydrolized to the desired acetic acid content. Hydrolysis is terminated by addition of sodium acetate in acetic acid. The solution of cellulose acetate is filtered, precipitated with **water** or dilute acetic acid, drained and dried. The whole acetylation treatment only takes about $2\frac{1}{2}$ hours, of which $\frac{1}{2}$ hour is taken for impregnation with acetic acid and catalyst. The acetate yields brilliant acetone solutions and is therefore eminently suitable for photographic films, lacquers and non-shatterable glass. In a modification described in example B, yellow birch, maple, aspen, tulip or poplar is pre-impregnated and digested with caustic soda as described in Specification

478,943, and the pulp subjected to a multi-stage bleach comprising a chlorination washing, with addition of lime and one or two treatments with hypochlorite. In this case, the final treatment with alkali may be omitted. Definitions are given in the Specification of a -cellulose, soda soluble material and bleachability and the Specification also gives typical analyses of pulp produced according to the invention, which may contain less than 4 per cent soda soluble material over 94 or even over 98 per cent a - cellulose. Specification 410,005 also is referred to. The Specification as open to inspection under Sect. 91 includes descriptions of the properties of different types of wood and relates to the selection of wood suitable for the process of the invention. Experiments are described to illustrate the difficulties of removing all the **air** from the interstices of wood chips, and the Specification contains descriptions relating to desirable properties of a cellulose pulp, terms such as permeability, reactivity, fibre saturation point, colour and haze of acetate solutions are defined. A modified dehydration procedure is described in which the pulp is formed into a sheet through which glacial acetic acid or other **liquid** used in the manufacture of cellulose derivatives is passed to displace the **water**. An example describes the reconditioning of a typical prior art commercial grade of rayon pulp to permit its esterification. The dried pulp laps are shredded, mixed into

a slurry with **water** and agitated. The pulp is then immersed and agitated in 10--18 per cent NaOH at 20--25 DEG C. The caustic soda is removed by draining or centrifuging, and the pulp washed at 18--22 DEG C. to bring its pH to 7,0--10,0. These treatments are repeated and the pulp then treated with dilute hydrochloric or acetic acid, washed, first with cold, and then with hot **water**, and then **dewatered** to 50 per cent **moisture** content and dehydrated and acetylated. This subject-matter does not appear in the Specification as accepted.

10/11 © EPODOC / EPO

PN - [GB478943](#) A 19380124

PR - USX478943 19350424

AP - GB19360011604 19360423

DT - *

CCI - [D21C1/10](#)

PA - CELLULOSE RES CORP

TI - System of obtaining and treating cellulose and product thereof

AB - In a process for preparing highly reactive and permeable wood cellulose for paper or for the manufacture of cellulose derivatives comprising impregnating pieces of wood of suitable size with a delignifying liquor under non-delignifying conditions and subjecting the wood to delignification, the wood is first brought into contact with an aqueous **liquid heated** to or above the boiling point of **water** to displace the **air** in the wood by steam, the steam is then condensed to draw **liquid** into the interstices of the wood which is then subjected to uniform delignification with a delignifying liquor. The aqueous **liquid** may be the delignifying solution itself, or particularly in the case of an alkaline cooking process, a non-delignifying solution of an electrolyte of specific concentration, e.g. sodium chloride of 10<-2> molar strength or aluminium sulphate of 10<-5> molar, which permits subsequent uniform dispersion of delignifying reagent throughout the chips. In a modification employing longer chips, the chips are first submerged and boiled in **water** for about 30 minutes, the **water**, maintained at a vigorous boil being then displaced from the bottom of the digester by means of super-**heated** steam added above the liquor level. Condensation of the steam by addition of treating liquor at a temperature below 100 DEG C. then creates a **vacuum** which draws the delignifying liquor into the chips. Boiling with the aqueous liquor is conducted under freely vented conditions; ebullition throughout the mass being obtained by closing the digester, **heating** to above the boiling point of the liquor at the bottom of the digester, and releasing pressure through a vent. Condensation of the steam is thereupon effected by closing the digester and, while keeping the chips submerged, raising the pressure or lowering the temperature. In a modification, the chips may be impregnated with ammonium or other sulphite

solution and SO₂ subsequently added. The process of the invention permits reduction of cooking time, temperature, concentration of reagent and/or ratio of reagent to wood. All these factors may be varied to suit the material being treated and to obtain the desired product. In an example, freshly cut spruce wood is debarked, washed, cut to chips $\frac{1}{4}$ " long, or into flakes 1" long and $\frac{1}{32}$ " thick, and charged into a rotary, chrome-nickel steel digester. The temperature is raised to about 60 DEG C. with steam, pressure due to expanded **air** being released. Ammonium bisulphite cooking liquor **heated** to 90 DEG C. in a separate accumulator is added and the whole **heated** to 90 DEG C. for 1 hour, and then raised during 2 hours to 122 DEG C. Short pressure reliefs are made to the atmosphere at 103--106 DEG C. to remove **air**. These reliefs cause boiling of the entire contents of the digester which may cause a lowering of the temperature. Increase of pressure on closing of the relief valve causes condensation of the steam within the chips. The temperature is maintained at 122 DEG C. for 4 hours and then raised to 135 DEG C. during $\frac{1}{2}$ hours and maintained there for $\frac{1}{4}$ hours. Reliefs may be practised during the step from 122 to 135 DEG C. to prevent excessive pressure. Reliefs during the cooking process are practised through the accumulator tank which is at lower pressure than the digester and has a valve set at a desired pressure, e.g. 40 pounds. Release of pressure through the accumulator after cooling permits recovery of SO₂. Used treating liquor is also drawn off and conveyed to a liquor recovery system. **Water** at 100--150 DEG C. is injected into the digester which is rotated. The washing operation is repeated, **air** being excluded. The pulp is then discharged to a dump pit and violently agitated to break down fibre bundles. It is then treated with chlorine **water** at 20 DEG C., washed, boiled with 1 per cent NaOH, again washed, bleached with hypochlorite at 20--25 DEG C., again boiled with alkali, and again bleached. It is then treated with 13--18 per cent NaOH at 20--25 DEG C., drained, washed and again mercerized. Finally, it is classified through an Alleghany metal screen against which the pulp in a rubber lined tank is thrown with a pulsating action by an agitator. The long fibred fraction of the pulp is treated with dilute hydrochloric acid at 20--23 DEG C., washed at 60--70 DEG C. in purified **water** and again at 20 DEG C. and then **dewatered** to the desired **moisture** content. All these operations are carried out with exclusion of **air** and with at least 50 per cent **moisture** in the pulp. In a second example, flakes or chips of yellow birch, maple, aspen, tulip or poplar are filled into a digester, covered and boiled at atmospheric pressure with 10--5% M. aluminium sulphate solution. The **liquid** is then cooled to 97--98 DEG C. and allowed to stand for one hour, drained and caustic soda added to the pulp at 70 DEG C. The alkaline liquor is circulated by drawing off at the bottom and spraying in at the top and steam at 200 DEG C. is added. Relief of pressure during initial steaming allows **air** above the **liquid** to escape. The temperature is maintained at 96--98 DEG C. for 1 hour, and then raised to 170 DEG C. during $\frac{1}{2}$ --2 hours, and held there for 1 hour. The pulp is then discharged to a blow pit, being directed at a steel target to break it down. Waste black liquor from a previous digestion aids the discharge. The pulp is vigorously agitated in **water**, and then chlorinated, treated with lime, washed and treated with bleaching powder, again washed and again bleached. Preferably, when pulping mixed woods, woods with similar absorptive capacities are employed, and the differing absorptive capacities of heartwood and sapwood from the same species are also taken into account. The Specification as open to inspection under Sect. 91 comprises also matter relating to selection of wood for desirable pulping properties to yield cellulose for making cellulose derivatives, to the desirability of pure **water** supply for treating pulp, to the material of the vessels employed for various treatments and to the subsequent conversion of the purified cellulose into cellulose acetate, this conversion involving replacement of the **water** content of the pulp with an organic swelling agent, e.g. acetic acid, without drying of the pulp. Apparatus for effecting this dehydration is described either as a continuous or a discontinuous

operation, the material being treated with the swelling agent either as a cake or as a sheet between two screen wire belts passing over suction boxes and through drying chambers to remove some of the **moisture**. The preparation and ripening of the cellulose acetate are also described. An example is also given of a treatment of a commercial wood pulp to bring it to suitable condition for esterification with repeated mercerizing and washing treatments followed by an acid treatment. Definitions are given of permeability, reactivity, viscosity measurements, and colour and haze measurements. This subject-matter does not appear in the Specification as accepted. Most of it is to be found in Specification 478,944 which is referred to.

11/11 © EPODOC / EPO

PN - [CN200978683Y](#) Y 20071121

PR - CN20062111813U 20061129

AP - CN20062111813U 20061129

DT - I

PA - XIAO CHUNWEN [CN]

TI - Oil-filtering machine dedicated for full-automatic steam turbine oil

AB - A full automatic special oil filter for turbine oil comprising an oil **liquid** inlet, a temperature control electric **heater**, an oil pump, a **vacuum** pump, a three-dimensional **vacuum** flasher, an oil outlet and an **air** exhaust pipe, the input end of the temperature control electric **heater** is communicated with the oil inlet, the output end of the temperature control electric **heater** is communicated with the oil outlet by the three-dimensional **vacuum** flasher and the oil pump in order. The utility model is characterized in that a **water** segregating filter provided between the temperature control electric **heater** and the three-dimensional **vacuum** flasher. The **air** exhaust of the three-dimensional **vacuum** flasher is communicated with the **air** exhaust pipe by a **moisture** separator, a gale condenser, a **vacuum** buffer room and the **vacuum** pump in order, and the other ends of the **moisture** separator and the **vacuum** surge room are communicated with a **dewatering** installation. The special oil filter has advantages of easy operation, of safe and reliable. The special oil filter utilizes cascade filtration, and the density of the filters is increased gradually to improve the filter fineness obviously. Filters are utilized to improve the emulsion-breaking ability and the filtering effect is excellent, the service life of the three-dimensional **vacuum** flasher is prolonged.

[SS 7] liquid and (desiccant+ or dewater+ or agent)

Results in EPODOC **163.070**

[SS 8] 7 and (dehumid+ or dewater+ or demoist+) and (humidi+ or moist+)

Results in EPODOC **586**

[SS 9] 7 and vacuum and heat

Results in EPODOC **478**

[SS 10] 8 and vacuum and heat+

Results in EPODOC **15**



1/15 © EPODOC / EPO

- PN - [CN106766684](#) A 20170531
- PR - CN20171164715 20170320
- AP - CN20171164715 20170320
- DT - I
- CNOI - [F26B3/08](#) ; [F26B21/14](#) ; [F26B25/002](#) ; [F26B25/005](#)
- PA - JIANGSU HUIMAI POWDER TECH CO LTD
- TI - Dryness and **humidity** control system for battery powder materials
- AB - The invention discloses a dryness and **humidity** control system for battery powder materials. The dryness and **humidity** control system for the battery powder materials is provided with a balance tank, a raw material box, a finished product material collector, a nitrogen source **heating** system, a material drying unit and a nitrogen **dewatering** and recycling unit; the material drying unit conveys dried materials to the finished product material collector; the nitrogen **dewatering** and recycling unit **dewaters** nitrogen output from the material drying unit and then recycles the nitrogen into the balance tank; and the nitrogen source **heating** device is connected with the balance tank and is arranged between the balance tank and the material drying unit, and conveys the nitrogen into the material drying unit after **heating** the nitrogen output from the balance tank. The system can be arranged between a sintering force and a raw material tank, and is used for strictly controlling the powder **humidity** and making powder meet the production requirement. Process gas used for being conveyed is purified through a precision filter, a gas-**liquid** separator and a molecular sieve drier; and a MVR **vacuum** pressurization technology is adopted to pressurize and **heat** up the process gas at the same time, and in this way, nitrogen consumption can be reduced to 1/3 that of a traditional process or even much less.

2/15 © EPODOC / EPO

- PN - [CN206069806U](#) U 20170405
- PR - CN20162955570U 20160826
- AP - CN20162955570U 20160826
- DT - I
- PA - SHENGLI OILFIELD HAIBO IND TRADE CO LTD
- TI - Multi -functional automatic oil filter
- AB - The utility model provides a multi -functional automatic oil filter. Its technical scheme does: mainly by a **dewater** solenoid valve (1), strainer (2), solenoid valve (3) are entered in the dehydration, backwashing solenoid valve (4), the **heater** enters solenoid valve (5), centrifugal oil filter entry solenoid valve (6), oil level control solenoid valve (7), **heater** (8), **vacuum** flash device (9), condenser (10), strainer (11), oil bath (12), oil transportation solenoid valve (13), sewer solenoid valve (14), support (15), mend oily solenoid valve (16), centrifugal oil filter (17), solenoid valve (18) are strained to the essence, gear pump (19), base (20), oil tank (21), **liquid** crystal display (22), operating keyboard (23), switch board (24), buffer tank (25), **vacuum** pump (26) and blowdown solenoid valve (27) constitute. The utility model relates to a rationally, supplying the fresh oil to the oil bath, carrying out secondary filter, breakdown of emulsion, dehydration are carried out to the **moisture** back of oil bath petroleum company of the people's republic of china, to the filter washing of turning over, automatic drain water automatically.

3/15 © EPODOC / EPO

- PN - [CN106373780](#) A 20170201
- PR - CN20161787746 20160831
- AP - CN20161787746 20160831
- DT - I
- PA - ANHUI HERO ELECTRONIC SCIENCE AND TECH CO LTD
- TI - Low-voltage power capacitor impregnant and production method thereof
- AB - The invention discloses a low-voltage power capacitor impregnant and a production method thereof. The production method comprises the following steps: weighing raw materials in a proportion, wherein the raw materials comprise 10% to 15% of microcrystalline wax and 60% to 70% of polyisobutene in terms of total weight, firstly mixing the microcrystalline wax and the polyisobutene and stirring for 30 to 50 minutes at normal temperature, uniformly mixing to obtain a mixture, then adding 15% to 30% of polypropyl ester, and then stirring for 30 to 50 minutes at normal temperature so as to obtain a mixture required for pouring; enabling the mixture required for pouring to pass through pipelines of a pouring **heating** system pouring mechanism, flowing into a **heating dehumidifying** mechanism, and **heating** until 80 to 120 DEG C; vacuumizing while stirring in a stirring system, closing a slide valve pump when time is up so as to break **vacuum**. The low-voltage power capacitor impregnant has the advantages of good **liquid** flowability, high **heat** resistance, high cold resistance and the like; a pouring **agent** thereof has the characteristics that the electrical property is stable and excellent insulation and **moisture** resistance are maintained; and the impregnant has the characteristics that the impregnant is high in adhesive force, does not flow at an operating temperature, and is not unshelled during cooling.

4/15 © EPODOC / EPO

- PN - [CN105540636](#) A 20160504
- PR - CN20151935853 20151215
- AP - CN20151935853 20151215
- DT - I
- CT - || STSE (A)
[CN2094377U](#) U 19920129 [Y] (GUO WEI [CN])
[Y] 1-4
* 说明书第2页第7行至第3页第2行及附图1 *;
[CN104689637](#) A 20150610 [Y] (HANDAN TONGDA MINE USED ELECTRICAL APPLIANCE CO LTD)
[Y] 1-4
* 说明书第[0025]、[0015]段及附图1 *
- CNOI - [C02F11/12](#) ; [C02F11/121](#)
- CNOA - [C02F2303/06](#)
- PA - JINJIANG SHILONG KITCHEN EQUIPMENT CO LTD
- TI - Sludge **dewatering** and drying method
- AB - The invention provides a sludge **dewatering** and drying method. The method comprises the following steps: a pressurization apparatus enhances pressure in an upper tank, a **vacuum** tank reduces pressure in a lower tank to a **vacuum** state, so that a large pressure difference is formed between the upper tank and the lower tank; water in mixed **liquid** with sludge containing water in the upper tank can rapidly pass a filter layer, and the sludge remains in the upside of the filter layer; the pressure

difference formed between the upper tank and the lower tank ensures rapid solid-**liquid** separation; after the solid-**liquid** separation finishes, a microwave emitter is started for emitting microwave, action between microwave and water molecules in the sludge is carried out for **heating**, so that **moisture** in the sludge diffuses and volatilizes to air, and efficacy for drying sludge is realized.

5/15 © EPODOC / EPO

PN - [JP2014209862](#) A 20141113
 PR - JP20130087107 20130418
 AP - JP20130087107 20130418
 DT - I
 FI - A23L1/16&C; A23L1/162; A23L7/109&C; A23L7/113
 FT - 4B046/LA01; 4B046/LB04; 4B046/LB06; 4B046/LC11; 4B046/LE18; 4B046/LP73
 PA - KIMURA ENGINEERING KK
 TI - MANUFACTURING METHOD OF CANNED NOODLE
 AB - PROBLEM TO BE SOLVED: To provide a canned food including noodles only, in which no seasoning **liquid** such as soup or broth is encapsulated together. SOLUTION: Boiled noodles are washed with water, **dewatered** to have a water content of 90 to 105%, and packed in a can. Can seaming is performed under a **vacuum** of -92 kpa or more. Commercially sterile conditions are achieved by **heat** sterilization corresponding to the degree of **vacuum** during can seaming. After cooling, the canned noodles are stored at normal temperature for 3 days or more. The can seaming and the **heat** sterilization are applied to the noodles having a relatively low water content due to a substantially shortened boiling time compared to the necessary boiling time for eating, preventing the noodles from sticking to each other to form into a rice cake form or dumpling form. The internal part of the can is filled with water vapor generated during **heat** sterilization under high **vacuum**, so that the **moisture** moves gradually from a site with high water content to a site with low water content in the noodles due to diffusion. Consequently, although a part of noodles in contact with the inner surface of the can is hard and dry immediately after **heat** sterilization, the whole has a uniform, good texture after storage at normal temperature for 3 months or more.

6/15 © EPODOC / EPO

PN - [CN103319647](#) A 20130925
 PR - CN20131284039 20130708
 AP - CN20131284039 20130708
 DT - I
 PA - LI DAN
 TI - VCM (vinyl chloride monomer) modified polymer resin and synthesis method thereof
 AB - The invention discloses a production technology of a VCM (vinyl chloride monomer) modified polymer resin. The production technology comprises the following steps of: 1) adding a dispersing **agent** to a polymeric kettle after dissolving, adding deionized water and other materials, agitating and evenly mixing; 2) **heating** the polymeric kettle to 200-300 DEG C to react for 6-12 hours, and stopping the polymerization reaction when the polymerization pressure is reduced to 3-5 kg/cm³; 3) recovering a monomer gas after the polymerization reaction is ended, recovering un-reacted vinyl chloride and hydroxypropyl methacrylate in the resin into a middle tank to recycle after **heating**, compressing condensation and **vacuum** supply; 4) feeding the unrecovered polymerization reaction product to a centrifugal machine, and adding a

condensed **liquid** to a condensation kettle of the centrifugal machine, and carrying out centrifugal **dewatering**, so as to obtain a wet material of which the **moisture** content is 20%; and 5) carrying out airflow cyclone drying on the wet material to obtain the product. By adopting the production technology, the waste can be recycled to the maximal extent; emission of the waste is reduced when resources are saved; protection of the environment is facilitated; and the modified polymer resin has good practicability.

7/15 © EPODOC / EPO

PN - [CN103265435](#) A 20130828

PR - CN20131247020 20130620

AP - CN20131247020 20130620

DT - I

CT - || STSE (A)

[WO2005028446](#) A1 20050331 [A] (SUMITOMO CHEMICAL CO [JP], et al)
[A]

[CN1469859](#) A 20040121 [Y] (QUEEN S UNIV OF BELFAST [GB])
[Y]

[US6420616](#) B1 20020716 [A] (GUERTLER CHRISTOPH [DE], et al)
[A]

[CN102249927](#) A 20111123 [Y] (JIANGSU DAHUA CHEMICAL INDUSTRY CO LTD)
[Y]

[XP001039147](#) A 00000000 [A]

CTNP - || STSE (A)

[A] Kun Qiao等, "Acidic ionic liquid modified silica gel as novel solid catalysts for esterification and nitration reactions", <<J.Mol.Catal.A:Chem.>>, (20060301), vol. 246, PAGE 65 - 69

[A]
第65-69页

[A] Laali K K,Gettewert V J., "Electrophilic Nitration of Aromatics in Ionic Liquid Solvents", <<J.Org.Chem.>>, (20001214), vol. 66, doi:doi:[10.1021/jo000523p](#), PAGE 35 - 40, XP001039147

[A]
第35-40页

[A] Keith Smith等, "Regioselective Mononitration of Simple Aromatic Compounds under Mild Conditions in Ionic Liquids", <<Ind. Eng. Chem. Res.>>, (20050419), vol. 44, PAGE 8611 - 8615

[A]
第8611-8615页

CCA - [Y02P20/584](#) ; [Y02P20/542](#)

PA - JIANGSU DAHUA CHEMICAL IND CO LTD

TI - Clean preparation method of 4-chlorine-3-nitrobenzotrifluoride

AB - The invention relates to a preparation method of a pesticide chemical product, and particularly relates to a preparation method of 4-chlorine-3-nitrobenzotrifluoride. A 4-chlorine-3-nitrobenzotrifluoride compound is obtained by taking p-trifluoromethyl chlorobenzene and ammonium nitrate as raw materials and ionic **liquid** as a catalyst and a solvent and completing nitration reaction by **heating** at ordinary pressure; the structural formula of the ionic **liquid** catalyst is as follows; an upper product is

removed through phase separation after the nitration reaction, a refined 4-chlorine-3-nitrobenzotrifluoride product is obtained through washing, neutralization and **vacuum dewatering**; and a lower **moist** ionic **liquid** catalyst is **dewatered**, deaminized and dried and then recycled. Compared with the prior art, the preparation method disclosed by the invention adopts the ammonium nitrate to replace nitric acid and the ionic **liquid** to replace concentrated sulfuric acid as the catalyst and the solvent, has the advantages of wide raw material source, less corrosion, biodegradability and good industrialization prospect and reduces the environment pollution because the ionic **liquid** catalyst can be recycled without being discharged.

8/15 © EPODOC / EPO

PN - [CN102741168](#) A 20121017

PNFP - CN102741168 B 20141105

PR - WO2010JP67172 20100930; JP20100042051 20100226

AP - CN2010862878 20100930

DT - I

CT - || STSE (A)
[JPH11151419](#) A 19990608 [Y] (MITSUBISHI HEAVY IND LTD)
[Y]
[JP2002186805](#) A 20020702 [Y] (MITSUBISHI HEAVY IND LTD)
[Y]
[JP2006110426](#) A 20060427 [YX] (ISHIKAWAJIMA HARIMA HEAVY IND)
[Y]
[X]

CCI - [B01D53/504](#) ; [C01F11/464](#)

CUI - [B01D33/04](#)

CQI - [B01D53/501](#)

CCA - [B01D53/75](#) ; [G01N22/04](#) ; [B01D2251/404](#) ; [B01D2251/606](#) ; [B01D2258/0283](#)

CUA - [C02F2103/18](#)

CQA - [B01D2201/204](#)

PA - (A B)
MITSUBISHI HEAVY IND LTD

TI - (A B)
Gypsum **dewatering** device for desulfurization facility

AB - (A)
Disclosed is a gypsum **dewatering** device (2): which is disposed within a desulfurization facility (105) in which the sulfur oxide contained in an exhaust gas (G) is absorbed by the limestone in an absorption **liquid** (A) within an absorption tower (1); and which is provided with a belt filter (22) for removing water from the gypsum slurry (SS), that is supplied from the absorption tower (1) and that absorbed the sulfur oxide, and for forming a gypsum cake (SC), and a **vacuum** suction mechanism (23) for sucking the **moisture** in the gypsum cake (SC) via the belt filter (22). Specifically, disclosed is a gypsum **dewatering** device (2) which is also provided with a **moisture** measuring means (H1) which measures the **moisture** concentration in the gypsum cake (SC) that was **dewatered** by means of the belt filter (22), a **heating** means (25) which **heats** the gypsum cake (SC), that was **dewatered** by means of the belt filter (22), using hot water or vapor, and a control means (26) which controls the **heating** conditions of the **heating** means (25) when the **moisture** concentration in the gypsum cake (SC), which was inputted by means of the **moisture**

measuring means (H1), exceeds a predetermined level.

9/15 © EPODOC / EPO

PN - [CN202393293U](#) U 20120822

PR - CN20112525224U 20111215

AP - CN20112525224U 20111215

DT - I

CCA - [Y02C10/04](#)

PA - UNIVSOUTHEAST

TI - Device for improving cooling effect of cooling tower by means of reducing air **moisture**

AB - The utility model relates to a device for improving the cooling effect of a cooling tower by means of reducing air **moisture**. The device is characterized by comprising a cooling water subsystem of a power plant, a CO2 trapping subsystem and a **liquid desiccant** subsystem, wherein the cooling water subsystem of the power plant and the CO2 trapping subsystem are integrated by the **liquid desiccant** subsystem, the cooling water subsystem of the power plant comprises the cooling tower (18), the CO2 trapping subsystem comprises an absorption tower (1), a rich liquor pump (2), a rich and barren liquor **heat** exchanger (3), a regenerating tower (4), a regenerative gas cooler (5), a gas-**liquid** separator (6), a barren liquor pump (7), a barren liquor **heat** exchanger (8), a reboiler (9), a barren liquor water-cooling **heat** exchanger (19) and a regenerative gas water-cooling cooler (20), and the **liquid desiccant** subsystem comprises a **dehumidifier** inlet fan (10). The **vacuum** degree of a condenser is improved, generating efficiency is increased, coal consumption is reduced, and the influence of a CO2 trapping system on power plant efficiency is decreased.

10/15 © EPODOC / EPO

PN - [WO2011104919](#) A1 20110901

PR - JP20100042051 20100226

AP - WO2010JP67172 20100930

DT - **

CT - |JP| ISR (A1)

[JPH11151419](#) A 19990608
[A] (MITSUBISHI HEAVY IND LTD);

[JP2002233730](#) A 20020820
[A] (MITSUBISHI HEAVY IND LTD)

CCI - [B01D53/504](#) ; [C01F11/464](#)

CUI - [B01D33/04](#)

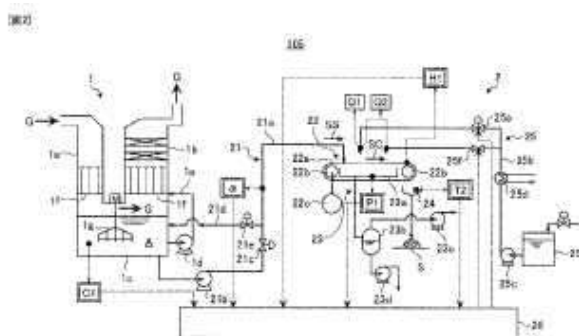
CQI - [B01D53/501](#)

CCA - [B01D53/75](#) ; [G01N22/04](#) ;
[B01D2251/404](#) ;
[B01D2251/606](#) ;
[B01D2258/0283](#)

CUA - [C02F2103/18](#)

CQA - [B01D2201/204](#)

PA - MITSUBISHI HEAVY IND LTD
[JP]; ITO HIDEKI; KAMIYAMA



NAOYUKI; TSUTSUI MAKOTO;
KAGAWASEIJI; NAGAYASU
TATSUTO; INABA NORIKAZU

TI - GYPSUM **DEWATERING** DEVICE
FOR DESULFURIZATION FACILITY

AB - Disclosed is a
gypsum **dewatering** device (2):
which is disposed within a
desulfurization facility (105)
in which the sulfur oxide
contained in an exhaust gas
(G) is absorbed by the
limestone in an
absorption **liquid** (A) within an
absorption tower (1); and
which is provided with a belt
filter (22) for removing water
from the gypsum slurry (SS),
that is supplied from the
absorption tower (1) and that
absorbed the sulfur oxide, and
for forming a gypsum cake
(SC), and a **vacuum** suction
mechanism (23) for sucking
the **moisture** in the gypsum
cake (SC) via the belt filter
(22). Specifically, disclosed is
a gypsum **dewatering** device
(2) which is also provided
with a **moisture** measuring
means (H1) which measures
the **moisture** concentration in
the gypsum cake (SC) that
was **dewatered** by means of
the belt filter (22), a **heating**
means (25) which **heats** the
gypsum cake (SC), that
was **dewatered** by means of
the belt filter (22), using hot
water or vapor, and a control
means (26) which controls
the **heating** conditions of
the **heating** means (25) when
the **moisture** concentration in
the gypsum cake (SC), which
was inputted by means of
the **moisture** measuring
means (H1), exceeds a
predetermined level.

11/15 © EPODOC / EPO

PN - [JPH01139393](#) A 19890531

PNFP - JP2565519B B2 19961218

PR - JP19870296495 19871125

AP - JP19870296495 19871125

DT - I

FI - B65B3/04; B67C3/14

FT - 3E018/AA02; 3E018/AB06; 3E018/BA08; 3E018/CA07; 3E018/CA10; 3E018/EA01;
3E018/EA02; 3E079/AA04; 3E079/AA10; 3E079/AB06; 3E079/BB07; 3E118/AA02;
3E118/AB14; 3E118/BA20; 3E118/CA07; 3E118/CA20; 3E118/EA02; 3E118/EA03;
3E118/EA04

PA - (A)
YOSHINO KOGYOSHO CO LTD

TI - (A)
METHOD OF FILLING BOTTLE BODY WITH **HEAT**

AB - (A)
PURPOSE: To improve a **heat** resistance when the **heated liquid** is injected and filled for sterilization and pasteurization by performing the **dehumidifying** treatment for reducing the water content to a bottle formed by the blow molding of a biaxial oriented polyethylene terephthalate(PET) resin. CONSTITUTION: As a means for keeping the **moisture** content of a PET bottle body in a remarkably low condition immediately after the molding, e.g. a large amount of **dehumidifying agent** such as silica gel or the like is placed in a wall, the **dehumidifying** treatment is performed onto a wall outer face, and further the PET bottle body of small **moisture** content immediately after the molding, is stored and held in a large housing made of a synthetic resin and having a special structure for inhibiting the going in and out of the air as much as possible. Further as a means for forcibly **dehumidifying** the PET bottle body just before the **heat** filling, the PET bottle body is **dehumidified** to some degree by utilizing the **dehumidifying agent** or the like in advance, and the PET bottle body of comparatively small water content is forcibly **dehumidified** by a **vacuum** drier.

PN - [GB478944](#) A 19380124

PR - USX478944 19350904

AP - GB19360011605 19360423

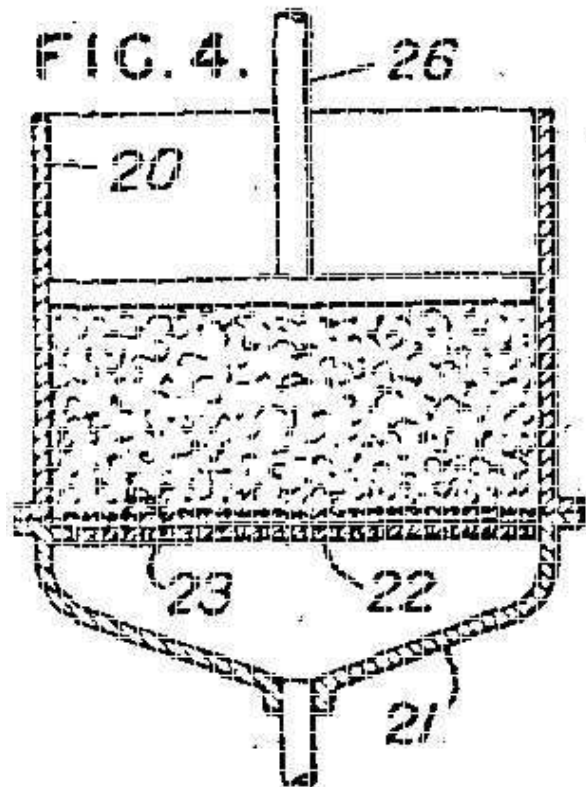
DT - *

CCI - [D21C9/083](#)

PA - CELLULOSE RES CORP

TI - System of obtaining and treating cellulose and product thereof

AB - <PICT:0478944/IV/1> A process for the preparation of highly purified reactive and permeable wood cellulose suitable for the production of paper or of cellulose derivatives, comprises producing or selecting a raw pulp obtained from wood by a relatively mild delignifying digestion process which causes no substantial degradation of the cellulose, chlorinating the pulp with no more than the amount of chlorine that will promptly react with the constituents of the pulp, removal of the chlorination products, bleaching with a hypochlorite solution and thereafter treating with an alkali solution of not less than 4 per cent strength under non-mercerizing conditions. Wood, e.g. spruce, may be subdivided, preimpregnated and digested with ammonium bisulphite liquor as described in Specification 478,943. The washed pulp so obtained is defibred, its consistency adjusted to 3--10 per cent and chlorine equal to 16 per cent of the bleachability added. For pulps with cuprammonium viscosities of less than 25 centipoises, more chlorine may be added. The chlorine treatment is continued for 45 minutes to allow acid formed to act upon the ash content of the cellulose. Sodium



hydroxide of not more than 7 per cent is then added, to bring the concentration in the slurry to 1 per cent, and the slurry **heated** to 100 DEG C. or just sufficient caustic soda is added to neutralize the pulp. It is then filtered, washed and neutralized if necessary. Calcium hypochlorite is added and the pulp treated at 20--25 DEG C. Variation of the temperature of this treatment enables the cuprammonium viscosity of the pulp to be regulated. The pulp is then washed, its consistency adjusted to 4--12 per cent and treated with 7 per cent caustic soda at 100 DEG C., presence of oxygen being avoided as far as possible. It is then washed until neutral. The pulp may then be mercerized with 10--18 per cent sodium hydroxide at 20--25 DEG C. and 4--12 per cent consistency. This mercerization treatment may replace the final alkali treatment and follow immediately after bleaching. The pulp is finally classified to remove fines in a rubber-lined tank with Alleghany metal agitators and an 80 mesh Alleghany metal screen cover, against which the pulp is thrown by the agitation. The wet cellulose is dehydrated in a tank 20, with detachable bottom 21, and a perforated Alleghany metal plate 22 covered with a 50 mesh Alleghany metal screen 23, water being sucked from the pulp to form a cake to which pressure is applied by a plunger 26. A second cake may be formed on top of this first one. When no more water can be drawn off, glacial acetic acid or some other suitable **liquid** employed in the manufacture of the cellulose

derivative is poured on top of the cake and allowed to soak into the pulp. Partial **vacuum** together if desired with pressure may be applied to pass the acid through the cake, displacing the water. By this means the pulp is maintained in wet swollen condition throughout the whole series of operations. The acid discharged from the cake is preserved for re-use and/or regeneration. The acid saturated cake is defibred, exposure to air being avoided, and then discharged into an acetylator and treated with glacial acetic acid and concentrated sulphuric acid. Not more than 2,2 parts of acetic anhydride are added to 1 part of cellulose, and the pulp is acetylated. At the desired viscosity, the acetylation is terminated by adding acetic acid of 50 per cent strength containing sulphuric acid, and the cellulose acetate is hydrolized to the desired acetic acid content. Hydrolysis is terminated by addition of sodium acetate in acetic acid. The solution of cellulose acetate is filtered, precipitated with water or dilute acetic acid, drained and dried. The whole acetylation treatment only takes about $2\frac{1}{2}$ hours, of which $\frac{1}{2}$ hour is taken for impregnation with acetic acid and catalyst. The acetate yields brilliant acetone solutions and is therefore eminently suitable for photographic films, lacquers and non-shatterable glass. In a modification described in example B, yellow birch, maple, aspen, tulip or poplar is pre-impregnated and digested with caustic soda as

described in Specification 478,943, and the pulp subjected to a multi-stage bleach comprising a chlorination washing, with addition of lime and one or two treatments with hypochlorite. In this case, the final treatment with alkali may be omitted. Definitions are given in the Specification of a -cellulose, soda soluble material and bleachability and the Specification also gives typical analyses of pulp produced according to the invention, which may contain less than 4 per cent soda soluble material over 94 or even over 98 per cent a -cellulose. Specification 410,005 also is referred to. The Specification as open to inspection under Sect. 91 includes descriptions of the properties of different types of wood and relates to the selection of wood suitable for the process of the invention. Experiments are described to illustrate the difficulties of removing all the air from the interstices of wood chips, and the Specification contains descriptions relating to desirable properties of a cellulose pulp, terms such as permeability, reactivity, fibre saturation point, colour and haze of acetate solutions are defined. A modified dehydration procedure is described in which the pulp is formed into a sheet through which glacial acetic acid or other **liquid** used in the manufacture of cellulose derivatives is passed to displace the water. An example describes the reconditioning of a typical prior art commercial grade of rayon pulp to permit its esterification. The dried pulp

laps are shredded, mixed into a slurry with water and agitated. The pulp is then immersed and agitated in 10--18 per cent NaOH at 20--25 DEG C. The caustic soda is removed by draining or centrifuging, and the pulp washed at 18--22 DEG C. to bring its pH to 7,0--10,0. These treatments are repeated and the pulp then treated with dilute hydrochloric or acetic acid, washed, first with cold, and then with hot water, and then **dewatered** to 50 per cent **moisture** content and dehydrated and acetylated. This subject-matter does not appear in the Specification as accepted.

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PN - [GB478943](#) A 19380124

PR - USX478943 19350424

AP - GB19360011604 19360423

DT - *

CCI - [D21C1/10](#)

PA - CELLULOSE RES CORP

TI - System of obtaining and treating cellulose and product thereof

AB - In a process for preparing highly reactive and permeable wood cellulose for paper or for the manufacture of cellulose derivatives comprising impregnating pieces of wood of suitable size with a delignifying liquor under non-delignifying conditions and subjecting the wood to delignification, the wood is first brought into contact with an aqueous **liquid heated** to or above the boiling point of water to displace the air in the wood by steam, the steam is then condensed to draw **liquid** into the interstices of the wood which is then subjected to uniform delignification with a delignifying liquor. The aqueous **liquid** may be the delignifying solution itself, or particularly in the case of an alkaline cooking process, a non-delignifying solution of an electrolyte of specific concentration, e.g. sodium chloride of 10<-2> molar strength or aluminium sulphate of 10<-5> molar, which permits subsequent uniform dispersion of delignifying reagent throughout the chips. In a modification employing longer chips, the chips are first submerged and boiled in water for about 30 minutes, the water, maintained at a vigorous boil being then displaced from the bottom of the digester by means of super-**heated** steam added above the liquor level. Condensation of the steam by addition of treating liquor at a temperature below 100 DEG C. then creates a **vacuum** which draws the delignifying liquor into the chips. Boiling with the aqueous liquor is conducted under freely vented conditions; ebullition throughout the mass being obtained by closing the digester, **heating** to above the boiling point of the liquor at the bottom of the digester, and releasing pressure through a vent. Condensation of the steam is thereupon effected by closing the digester and, while keeping the chips submerged, raising the pressure or lowering the temperature. In a

modification, the chips may be impregnated with ammonium or other sulphite solution and SO₂ subsequently added. The process of the invention permits reduction of cooking time, temperature, concentration of reagent and/or ratio of reagent to wood. All these factors may be varied to suit the material being treated and to obtain the desired product. In an example, freshly cut spruce wood is debarked, washed, cut to chips $\frac{1}{4}$ " long, or into flakes 1" long and .02--.03" thick, and charged into a rotary, chrome-nickel steel digester. The temperature is raised to about 60 DEG C. with steam, pressure due to expanded air being released. Ammonium bisulphite cooking liquor **heated** to 90 DEG C. in a separate accumulator is added and the whole **heated** to 90 DEG C. for 1 hour, and then raised during 2 hours to 122 DEG C. Short pressure reliefs are made to the atmosphere at 103--106 DEG C. to remove air. These reliefs cause boiling of the entire contents of the digester which may cause a lowering of the temperature. Increase of pressure on closing of the relief valve causes condensation of the steam within the chips. The temperature is maintained at 122 DEG C. for 4 hours and then raised to 135 DEG C. during $1\frac{1}{2}$ hours and maintained there for $2\frac{1}{4}$ hours. Reliefs may be practised during the step from 122 to 135 DEG C. to prevent excessive pressure. Reliefs during the cooking process are practised through the accumulator tank which is at lower pressure than the digester and has a valve set at a desired pressure, e.g. 40 pounds. Release of pressure through the accumulator after cooling permits recovery of SO₂. Used treating liquor is also drawn off and conveyed to a liquor recovery system. Water at 100--150 DEG C. is injected into the digester which is rotated. The washing operation is repeated, air being excluded. The pulp is then discharged to a dump pit and violently agitated to break down fibre bundles. It is then treated with chlorine water at 20 DEG C., washed, boiled with 1 per cent NaOH, again washed, bleached with hypochlorite at 20--25 DEG C., again boiled with alkali, and again bleached. It is then treated with 13--18 per cent NaOH at 20--25 DEG C., drained, washed and again mercerized. Finally, it is classified through an Alleghany metal screen against which the pulp in a rubber lined tank is thrown with a pulsating action by an agitator. The long fibred fraction of the pulp is treated with dilute hydrochloric acid at 20--23 DEG C., washed at 60--70 DEG C. in purified water and again at 20 DEG C. and then **dewatered** to the desired **moisture** content. All these operations are carried out with exclusion of air and with at least 50 per cent **moisture** in the pulp. In a second example, flakes or chips of yellow birch, maple, aspen, tulip or poplar are filled into a digester, covered and boiled at atmospheric pressure with 10--5 M. aluminium sulphate solution. The **liquid** is then cooled to 97--98 DEG C. and allowed to stand for one hour, drained and caustic soda added to the pulp at 70 DEG C. The alkaline liquor is circulated by drawing off at the bottom and spraying in at the top and steam at 200 DEG C. is added. Relief of pressure during initial steaming allows air above the **liquid** to escape. The temperature is maintained at 96--98 DEG C. for 1 hour, and then raised to 170 DEG C. during $1\frac{1}{2}$ --2 hours, and held there for 1 hour. The pulp is then discharged to a blow pit, being directed at a steel target to break it down. Waste black liquor from a previous digestion aids the discharge. The pulp is vigorously agitated in water, and then chlorinated, treated with lime, washed and treated with bleaching powder, again washed and again bleached. Preferably, when pulping mixed woods, woods with similar absorptive capacities are employed, and the differing absorptive capacities of heartwood and sapwood from the same species are also taken into account. The Specification as open to inspection under Sect. 91 comprises also matter relating to selection of wood for desirable pulping properties to yield cellulose for making cellulose derivatives, to the desirability of pure water supply for treating pulp, to the material of the vessels employed for various treatments and to the subsequent conversion of the purified cellulose into cellulose acetate, this conversion involving replacement of the water content of the pulp with an organic

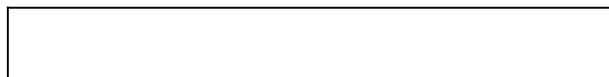
swelling **agent**, e.g. acetic acid, without drying of the pulp. Apparatus for effecting this dehydration is described either as a continuous or a discontinuous operation, the material being treated with the swelling **agent** either as a cake or as a sheet between two screen wire belts passing over suction boxes and through drying chambers to remove some of the **moisture**. The preparation and ripening of the cellulose acetate are also described. An example is also given of a treatment of a commercial wood pulp to bring it to suitable condition for esterification with repeated mercerizing and washing treatments followed by an acid treatment. Definitions are given of permeability, reactivity, viscosity measurements, and colour and haze measurements. This subject-matter does not appear in the Specification as accepted. Most of it is to be found in Specification 478,944 which is referred to.

14/15 © EPODOC / EPO

- PN - [CN200978683Y](#) Y 20071121
- PR - CN20062111813U 20061129
- AP - CN20062111813U 20061129
- DT - I
- PA - XIAO CHUNWEN [CN]
- TI - Oil-filtering machine dedicated for full-automatic steam turbine oil
- AB - A full automatic special oil filter for turbine oil comprising an oil **liquid** inlet, a temperature control electric **heater**, an oil pump, a **vacuum** pump, a three-dimensional **vacuum** flasher, an oil outlet and an air exhaust pipe, the input end of the temperature control electric **heater** is communicated with the oil inlet, the output end of the temperature control electric **heater** is communicated with the oil outlet by the three-dimensional **vacuum** flasher and the oil pump in order. The utility model is characterized in that a water segregating filter provided between the temperature control electric **heater** and the three-dimensional **vacuum** flasher. The air exhaust of the three-dimensional **vacuum** flasher is communicated with the air exhaust pipe by a **moisture** separator, a gale condenser, a **vacuum** buffer room and the **vacuum** pump in order, and the other ends of the **moisture** separator and the **vacuum** surge room are communicated with a **dewatering** installation. The special oil filter has advantages of easy operation, of safe and reliable. The special oil filter utilizes cascade filtration, and the density of the filters is increased gradually to improve the filter fineness obviously. Filters are utilized to improve the emulsion-breaking ability and the filtering effect is excellent, the service life of the three-dimensional **vacuum** flasher is prolonged.

15/15 © EPODOC / EPO

- PN - [CN1256299](#) A 20000614
- PR - CN1998111603 19981209
- AP - CN1998111603 19981209
- DT - I
- PA - YANGKUANSHENG [CN]
- TI - Desiccating and **moisture**-proof sealant made of polyurethane and its preparation
- AB - The desiccating and **moistureproof** sealant as one waterproof building



material contains
polyisocyanic ester, polyether,
flexibilizer, composite
catalytic assistant and mixed
solvent and the proportions of
the ingredients are:
polyisocyanic ester 40-60%,
polyether 18-28%, flexibilizer
18-30%, composite catalytic
assistant 0.5-2% and mixed
solvent 0-30%. The
preparation includes the
processes of **vacuum**
dewatering of polyether in
reactor, adding the rest
ingredients (except mixed
solvent) while **heating** and
stirring, introducing nitrogen,
maintaining the temperature
for certain period, cooling to
room temperature, adding
mixed solvent (if oily **liquid** is
prepared), filtering and sealed
packing.

[SS 11]