

1/24 © EPODOC / EPO

PN - [CN207135962U](#) U 20180327
PR - CN20172499895U 20170508
AP - CN20172499895U 20170508
DT - I
PA - WUJIANG CITY CELEBRITY IND BREEDING CENTER
TI - Leech room of resting
AB - The utility model provides a leech room of resting, including the box, set up in the inside soil horizon of box, with irrigation equipment that the soil horizon corresponds and the warm light who is connected with the box top. The utility model provides a leech room of resting uses warm light to heat for the leech, can change at the lower or temperature of temperature to guarantee the leech required temperature of growing in great, utilizes the temperature and humidity in the temperature **sensor** real -time supervision box simultaneously, and the convenient environment that in time changes in the box makes the environment in the box satisfy the demand that the leech rested all the time. And it has the **plant to plant** in the soil horizon, make the soil horizon have good gas permeability, through irrigating the **plant**, make soil **moisture** more even, avoid soil **drying**.

2/24 © EPODOC / EPO

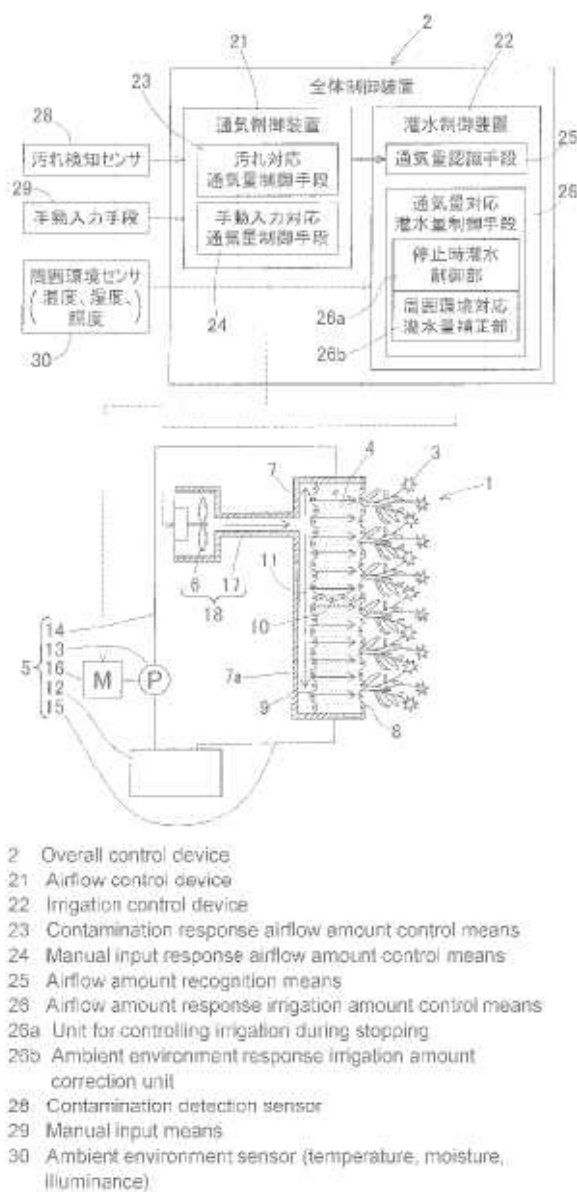
PN - [CN206687021U](#) U 20171201
PR - CN20172486747U 20170504
AP - CN20172486747U 20170504
DT - I
PA - XU NIANFANG
TI - Chinese yam seed storage device
AB - The utility model discloses a chinese yam seed storage device, including the bin, bin bottom be connected with function box, function box upper surface one side be equipped with the control box, function box's bottom be equipped with the wheel that rolls, the bin in be equipped with rhizome head apotheca, chinese yam beans apotheca, rhizome head apotheca, chinese yam beans apotheca pass through ventilated box and connect, ventilated box pass through the pipeline and the **drying** device, the refrigerating **plant** that set up in function box are connected, the bin in a medial surface be equipped with a plurality of humidity transducer, temperature **sensor**, the utility model discloses simple structure, it is portable, the utility model discloses a **drying** device, refrigerating **plant** and ventilated box realize carrying out temperature, **moisture** content control to rhizome head apotheca, chinese yam beans apotheca, guarantee the storage condition of chinese yam seed, realize that chinese yam seed storage effect is good, have guaranteed the rate of sprouting of chinese yam seed, are convenient for deposit.

3/24 © EPODOC / EPO

PN - [JP2017176045](#) A 20171005
 PR - JP20160068864 20160330
 AP - JP20160068864 20160330
 DT - I
 CUI - [A01G9/02](#) ; [A01G25/16](#) ; [A01G27/00](#)
 CCA - [Y02A40/27](#) ; [Y02A40/268](#)
 FI - A01G27/00&504Z; A01G9/24&G;
 A01G9/24&X
 FT - 2B029/PA01; 2B029/PA10;
 2B029/XA10
 PA - DAIWA HOUSE IND
 TI - PLANTING SYSTEM AND WATERING
 METHOD
 AB - PROBLEM TO BE SOLVED: To

provide a planting system that is capable of performing appropriate watering to suppress over- **moisture** and over- **drying**, and requires no soil **moisture sensor** and no consideration of the accuracy and lifetime of sensors.

SOLUTION: According to the present invention, there is provided a planting system comprising: a planting device 1 having a **plant growth substrate** 4 on which a **plant** 3 is planted, a watering device 5, and a fan 6; and a watering control device 22. Here, the watering control device 22 controls an amount of watering in accordance with the amount of aeration in the **plant growth substrate** 4 by the fan 6. The watering control device 22 may define a constant amount of watering to be performed at one time and adjust the interval of watering or may control an amount of watering to be performed at one time on the basis of the predetermined time of watering. SELECTED DRAWING: Figure 1



4/24 © EPODOC / EPO

PN - [CN107155832](#) A 20170915
 PR - CN20171252203 20170418
 AP - CN20171252203 20170418
 DT - I
 CNOI - [A01G25/06](#) ; [A01G25/167](#)
 PA - HENAN INST SCIENCE & TECH
 TI - Garden green land soil humidity monitoring system
 AB - The invention discloses a garden green land soil humidity monitoring system, and relates to the technical field of **plant** protection. The garden green land soil humidity monitoring system includes a soil humidity measurement device, an adjustment device and a control device; the soil humidity measurement device includes a measurement rod, humidity sensors, and **moisture** sensors; a plurality of grooves having different

heights are formed in the measurement rods; a humidity **sensor** and a **moisture sensor** are arranged in each groove; the humidity sensors and the **moisture** sensors are electrically connected to the control device; and the adjustment device includes a water storage device, a watering device and an air **drying** device. The humidity sensors and the **moisture** sensors can comprehensively detect the soil humidity and can detect soil in different stratus; the detection precision of soil is improved; and the soil is watered fully through a plurality of circular pipes, and local watering can be performed only.

5/24 © EPODOC / EPO

- PN - [RU2606415](#) C1 20170110
- PR - RU20160126326 20160630
- AP - RU20160126326 20160630
- DT - I
- CT - || STSE (C1)
[RU39856U](#) U1 20040820 [];
[RU2105736](#) C1 19980227 [] (DIKKERKHOFF A G [DE]);
[SU1576345](#) A1 19900707 [] (MO N PROIZV OB STR DOROZH MASH [SU]);
[US4185431](#) A 19800129 [] (BROWNLEE ROBERT O)
- CNOI - [G05B99/00](#)
- CNOA - [B28C7/04](#); [B28C5/08](#)
- PA - PYANKOVSKIY EVGENIJ BORISOVICH [RU]
- TI - COLORED MASONRY DRY MIXTURES AND COLORED COMMERCIAL CONCRETES PREPARATION **PLANT**
- AB - FIELD: construction.SUBSTANCE: invention relates to used in construction colored masonry dry mixtures and colored commercial concretes preparation devices. **Plant** includes mixer with mixed components loading device, **moisture sensor**, colour characteristics determination spectral **sensor** and illumination source, dry fillers bins, dry binder bins, coloring pigment bins. All bins are equipped with proportioner and **moisture** sensors and connected by conveyors, equipped with weighing system, with mixer. Additionally chemical **drying** agent bin is provided, equipped with proportioner and connected with mixer. Colour characteristics determination spectral sensors, as well as all said proportioning systems, **moisture** sensors, weighing systems and conveyors are connected by two-way communication with control device, made with possibility of automatic calculation of colour characteristics, weight and/or volumetric characteristics of mixture and chemical **drying** agent each component.EFFECT: enabling production process reduced power consumption due to elimination of initial components thermal **drying**, as well as improvement of finished product quality.1 cl, 1 dwg

6/24 © EPODOC / EPO

- PN - [RU2578782](#) C1 20160327
- PR - RU20150109205 20150316
- AP - RU20150109205 20150316
- DT - I
- PA - FEDERALNOE G BJUDZHETNOE OBRAZOVATELNOE UCHREZHDENIE VYSSHEGO PROFESSIONALNOGO OBRAZOVANIJA RJAZANSK [RU]
- TI - BEEBREAD **DRYING PLANT**
- AB - FIELD: agriculture.SUBSTANCE: invention relates to agriculture, particularly to installations for **drying** of bee-bread. Beebread **drying plant** consists of case, inner volume of which by means of partition and guide is divided into a **drying** chamber and air duct. **Plant** is equipped with two outer and one inner air valves. In the front part there is a door, on which by means of brackets are fixed infrared radiators. There is a fan. **Plant** is equipped with control unit, as well as **moisture sensor** and introduced in bee-bread temperature **sensor**. On the walls of the **drying** chamber are intended for tiered placement of trays. Tray consists of a frame, the lower part of which has mesh parabolic base and transverse partition walls.EFFECT: invention shall improve efficiency of **drying** process while reducing power consumption of beebread **drying plant**.2 cl, 6 dwg

7/24 © EPODOC / EPO

PN - [CN204891551U](#) U 20151223
 PR - CN20152386945U 20150608
 AP - CN20152386945U 20150608
 DT - I
 PA - HANGZHOU BODA PURIFYING EQUIPMENT CO LTD
 TI - Freezing formula compression heat regeneration compressed air **drying** machine suitable for mill
 AB - The utility model discloses a freezing formula compression heat regeneration compressed air **drying** machine suitable for mill, including compressor, air **drying** filter, **moisture** evaporation **plant**, the compressor top is connected with the compressed air inlet port, the choke valve is installed to the compressor lower extreme, high low - voltage protective switch is installed to the choke valve below, high low -voltage protective switch installs the below the air **drying** filter, air **drying** filter lower extreme is connected with the mobile pipeline of air, the pressure check table is installed to the mobile pipeline top of air, the mobile pipeline right side of air is being connected **moisture** evaporation **plant**, **moisture** evaporation **plant** installs air condensing equipment in the upper end. The utility model discloses simple structure, it is convenient to remove, can be strong carry out thorough **drying** to the air, and can intelligent control refrigerated temperature through the detection of **sensor**.

8/24 © EPODOC / EPO

PN - [CN204560904U](#) U 20150819
 PR - CN20142855797U 20141230
 AP - CN20142855797U 20141230
 DT - I
 PA - KAI COUNTY RENDAJIE AGRICULTURAL DEV CO LTD
 TI - **Drying**-machine is used in vegetables dehydration
 AB - The utility model discloses a **drying**-machine is used in vegetables dehydration, including vegetables dewatering and **drying** device and dehydrated vegetable packing **plant**, vegetables dewatering and **drying** device includes the stoving drain sump, and stoving drain sump bottom is provided with hot air inlet, can carry out dewatering and **drying** with getting into vegetables in the stoving drain sump, and stoving drain sump middle part is provided with temperature **sensor**, steerable with set for **drying** temperature, dehydrated vegetable packing **plant** includes the dehydrated vegetable collecting vat, can be used to collect dehydrated vegetable, is provided with the **moisture** detection instrument in the dehydrated vegetable collecting vat, detectable dehydrated vegetable's **moisture**, dehydrated vegetable collecting vat side is dehydrated vegetable dehydrated vegetable 6, makes things convenient for dehydrated vegetable's dehydrated vegetable 8 the utility model provides a pair of **drying**-machine is used in vegetables dehydration can realize automatic continuous dewatering and **drying** vegetables, and dewatering and **drying** is efficient, and the packaging process is totally closed from **drying**, has avoided the pollution of external environment to dehydrated vegetable, is suitable for the industrialization and uses

9/24 © EPODOC / EPO

PN - [CN203278046U](#) U 20131106
 PR - CN20132280639U 20130522
 AP - CN20132280639U 20130522
 DT - I
 PA - STATE GRID CORP CHINA; PANJIN POWER SUPPLY CO LTD LIAONING ELECTRIC POWER CO LTD
 TI - Movable vehicle-borne insulation tool **drying** box
 AB - The utility model relates to a movable vehicle-borne insulation tool **drying** box comprising a box body which is internally provided with a temperature and humidity **sensor**. The temperature and humidity **sensor** transmits collected data to a temperature and humidity controller which controls a heating plate. A silicon box is installed on the heating plate. According to the movable vehicle-borne insulation tool **drying** box, a high precision intelligent programmable digital temperature and humidity controller is adopted, a user can freely set a definite value of temperature and humidity starting control according to season and climate conditions, two **moisture**

removing means of the heating plate and the silicon box are employed as complement, the needs of different areas are satisfied, the all-weather real-time **drying** is achieved, the personal safety of an operator is ensured, the movable vehicle-borne insulation tool **drying** box can be used in a vehicle, and is suitable for the preservation and transportation of substation or power **plant** insulated tools.

10/24 © EPODOC / EPO

- PN - [EP2418075](#) A2 20120215
- PNFP - EP2418075 A3 20131106
- PR - DE20101036920 20100809
- AP - EP20110176508 20110804
- DT - *; Rep
- CT - || STSE (A3)
[EP1306199](#) A2 20030502
 [XYI] (ECOTRE SYSTEM S R L [IT])
 [X] 1,8,9,11,12,15-17
 * the whole document *
 [Y] 2-7,13,17,18
 [I] 10,18;
[DE202007005577U](#) U1 20070614
 [Y] (STRAUTMANN & SOEHNE [DE])
 [Y] 2-7,17,18
 * paragraphs [0013] - [0031];
 figure - *;
[DE202009003247U](#) U1 20090625
 [Y] (BIOCALOR EN AUS BIOMASSE GMBH [DE])
 [Y] 13
 * abstract *;
[KR100901792B](#) B1 20090625
 [X] (DRYING ENGINEERING INC [KR])
 [X] 1,2,4,15,16
 * abstract *;
[AT503111](#) A4 20070815
 [X] (KASMANHUBER TECH BUERO GES M B [AT])
 [X] 1,15
 * pages 5-6; figure - *;
[KR20020088307](#) A 20021127 [X] (KIM YOUNG GUN [KR])
 [X] 1
 * abstract *;
[US4015951](#) A 19770405
 [A] (GUNNERMAN RUDOLF WILHELM)
 [A] 1,15
 * abstract *
- CCI - [B01F7/007](#) ; [B01F7/242](#) ;
[B01F15/00155](#) ; [B01F15/00175](#) ;
[B01F15/0024](#) ; [B01F15/063](#) ;
[B30B15/308](#) ; [C10L5/363](#) ;
[C10L5/442](#) ; [C10L5/445](#) ; [F26B23/001](#)
- CCA - [Y02E50/10](#) ; [Y02E50/30](#) ;
[C10L2290/24](#) ; [C10L2290/145](#) ;
[C10L2290/146](#) ; [B01F2015/062](#) ;
[C10L2290/08](#) ; [C10L2290/28](#) ;
[C10L2290/58](#) ; [C10L2290/567](#) ;
[C10L2290/40](#) ; [Y02P70/405](#)
- PA - (A2 A3)
 ROELL WILHELM [DE]; HEINZ ULLRICH [DE]

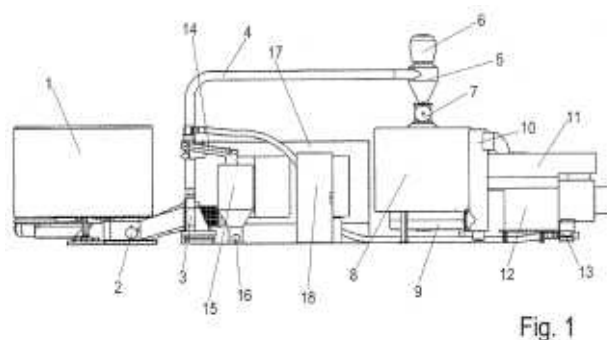


Fig. 1

- TI - (A2 A3)
Method and device for producing pellets made of biomass
- AB - (A2)
The device comprises: a mixer (1), which is filled with a raw material; crushing device for crushing the raw material; a collection device (3) for collecting and conveying the crushed raw material; a pelletizing **plant** (12), which is produced by the pellets pressed from the crushed raw material; a measuring device for detecting a **moisture** content of an uncrushed and/or crushed raw material; and control device (18) depending on the **moisture** content of a humidifying device and a **drying** device. The measuring device for detecting the **moisture** content comprises a **sensor** in or on the mixer. The device comprises: a mixer (1), which is filled with a raw material; crushing device for crushing the raw material; a collection device (3) for collecting and conveying the crushed raw material; a pelletizing **plant** (12), which is produced by the pellets pressed from the crushed raw material; a measuring device for detecting a **moisture** content of an uncrushed and/or crushed raw material; and control device (18) depending on the **moisture** content of a humidifying device and a **drying** device. The measuring device for detecting the **moisture** content comprises a **sensor** in or on the mixer. The **drying** device comprises a blower for blowing of heated air or a heated air mixture in the mixer with the raw material. A rotatable agitator is arranged in the mixers, and comprises a hollow shaft by which the heated air or the air mixture is blown into the raw material. A cutting device for crushing the raw material is arranged in a bottom region of the mixer, which comprises a bottom side of an opening adjustable in a size. A metal cutter and a mineral separator are provided behind the mixer. The crushing device comprises a hammer mill. The crushed material is supported by the crushing device over a cyclone to the collecting device. The collecting device and the

humidifying device for increasing the **moisture** content of the crushed material are provided. The agitator and the crushing device are driven by a motor (17) whose waste heat is used for heating the air or the air mixture of the **drying** device. A tube-shaped conveying device is moved behind the pelletizing **plant** in which a cooling blower flow is conducted. An independent claim is included for a method for producing pellets made of biomass.

11/24 © EPODOC / EPO

PN - [CN101561426](#) A 20091021
 PNFP - CN101561426 B 20130109
 PR - CN2009127151 20090522
 AP - CN2009127151 20090522
 DT - I
 PA - (A)
 NANJING SHENG TANG ELECTRIC CON [CN]
 - (B)
 NANJING SHENG TANG ELECTRIC CONTROLLED SYSTEM CO LTD
 TI - (A B)
 Humidity measuring method and measuring device used for CEMS system
 AB - (A)
 The invention discloses a humidity measuring method and a measuring device used for CEMS system, **moisture** in flue gas to be detected in a flue is separated to an independent pipeline introduced with dry air by a Nafion **drying** tube, humidity of separated **moisture** is detected, and humidity of flue gas to be detected is obtained. The invention provides the humidity measuring method and the device which is applicable for long term usage and is resistant to dust and corrosion, and has an excellent application effect on CEMS system. Accuracy of measurement is not affected, and the service life of a humidity **sensor** is long. The invention solves the problem that the humidity **sensor** for **moisture** measurement on CEMS system in desulphurization of a domestic power **plant** is liable to be blocked by dust in the flue and corroded by aggressive gas in the flue which results in the current situation of the very low service life of the **sensor**, has wide application prospect and wide application range, is suitable for measurement of humidity in high corrosive environment with large amount of dust and is especially suitable for application of humidity measurement on CEMS system in the power **plant**.

12/24 © EPODOC / EPO

PN - [RU2355162](#) C1 20090520
 PR - RU20070138296 20071015
 AP - RU20070138296 20071015
 DT - I
 CCA - [Y02A40/237](#)
 PA - G OBRAZOVATEL NOE UCHREZHDENIE [RU]
 TI - METHOD OF AMELIORATION AND DEVICE FOR IRRIGATION CONTROL
 AB - FIELD: agriculture. ^ SUBSTANCE: plots for irrigation are divided into upper and lower halves for carrying out amelioration. Permanent broad seedbeds are made in the plots. Narrow trenches are made along the centres of the seedbeds, the upper part of the trenches is placed in active soil layer and filled with **plant** residues and manure, and separated by the clay layer from the lower part filled with sand and gravel. The surface of the seedbeds is inclined to the centre of the seedbeds and mulched with **plant**

residues. Screens made of bands of the polyethelene film are fixed under the irrigation furrows in active soil layer. Soil **drying** control in the upper and lower horizons of the active soil layer is executed according to readings of soil **moisture sensor** mounted in the upper and lower horizons of the active soil layer. The soil **moisture** sensors are made in the form of horizontally placed porous tube, in the centre of which hair is strained. The hair is connected with a converter of hair length change to electric signal, attached to control irrigation unit. Irrigation by sprinkler is carried out within decreasing of soil **moisture** in the upper horizon of the active soil layer to the set level. ^ EFFECT: quality increase of amelioration of irrigated plots. ^ 2 cl, 3 dwg

13/24 © EPODOC / EPO

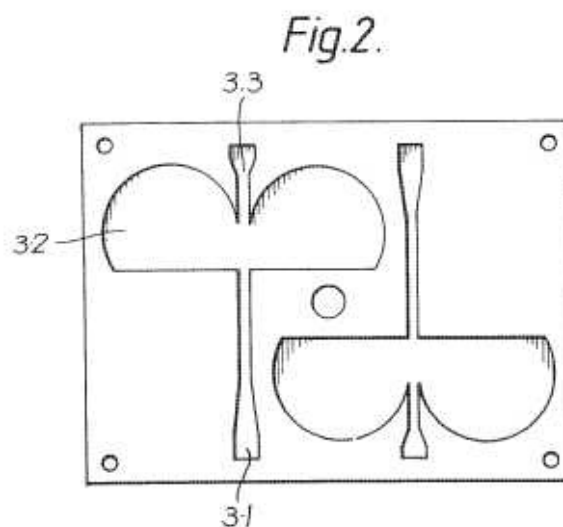
- PN - [US6371174](#) B1 20020416
- PR - US20010768612 20010125
- AP - US20010768612 20010125
- DT - *
- CT - [US5862841](#) A []
- CCI - [B05C11/1042](#) ; [B29B13/022](#)
- CCA - [B29C2037/90](#) ; [B29K2105/0097](#)
- PA - ILLINOIS TOOL WORKS [US]
- TI - Adhesive application system and method of use
- AB - An adhesive supply unit for melting solid and quasi/solid materials, such as polyurethane (PUR) and other hot melt adhesives, is disclosed. The unit features an air control system that automatically starts, when the hopper lid is closed, to remove **moisture** from the **moisture** laden air in the hopper interior by alternately applying a vacuum to the hopper interior and then replacing the air with **plant** air that has passed through a series of dryers and filters. The dryers/filters, valving mechanisms and tubing are mounted directly to the machine body with a panel bolted to the machine, eliminating the need for storing the air control system on a separate cart. A **sensor** verifies that the hopper lid is securely closed before automatically initiating the **drying**/purging cycles which are repeated a number of times to assure appropriate dehumidification of air to acceptable levels. The control system utilizes a pressure transducer instead of a fixed timer to operate each cycle until predetermined pressure levels are reached. A unique arrangement for securely clamping the hopper lid to the hopper to assure an air tight seal is also disclosed.

14/24 © EPODOC / EPO

- PN - [KR20000033217](#) A 20000615
- PR - KR19980049979 19981120
- AP - KR19980049979 19981120
- DT - I
- CNOI - [C04B35/047](#) ; [C04B35/46](#)
- CNOA - [G01N27/605](#)
- PA - KOREA ELECTRIC POWER CORP
- TI - METHOD OF PREPARING CERAMIC **MOISTURE SENSOR** DEVICE FOR DETECTING LEAKAGE OF PIPING OF ATOMIC POWER **PLANT**
- AB - PURPOSE: A method of preparing ceramic **moisture sensor** device for detecting leakage of piping of atomic power **plant** is provided, which is able to early detect a sign of piping's cutoff by detecting the change of **moisture** around piping caused by vapor leakage from a defect parts of the piping through measurement of an electric conductivity. CONSTITUTION: The ceramic **moisture sensor** device is prepared by: (i) mixing MgO, Cr2O3 and TiO2 powder with ethanol and alumina ball and **drying** and calcine a ting the mixture to prepare MgCr2O4-TiO2; (ii) giving cold equilibrium pressure to the prepared MgCr2O4-TiO2; and (iii) sintering and heat-treating the ceramic composition of MgCr2O4-TiO2, wherein the MgCr2O4 and the TiO2 is composed in a ratio of 70: 30 mol% and the sintering temperature is 1,350-1,440°C and the heat-treating is performed at a temperature of 950-1,050°C for 24 hours.

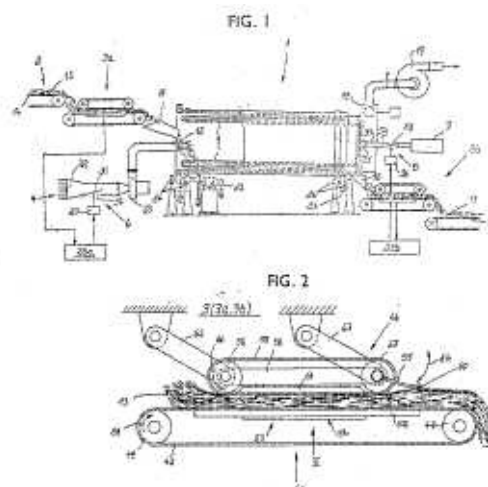
15/24 © EPODOC / EPO

PN - [GB2102572](#) A 19830202
PR - DD19810231532 19810707
AP - GB19820015711 19820528
DT - *
CCI - [G01N29/024](#)
PA - REGLERWERK DRESDEN VEB [DD]
TI - Fluidic-electric **sensor** for determining the composition of gas mixtures
AB - The invention has the aim of simplifying the determination of the composition of gases, especially the **moisture** content of the waste air of an industrial **drying plant**, and thus enabling minimisation of the energy consumption of such **plant**. The **sensor** is to be usable in extreme environmental conditions and to supply electric frequency-analog signals which can be transmitted without additional amplification over at least 100 metres by ordinary leads and can then still possess specific, if necessary standardised, amplitudes and frequency values. As **sensor** there is used a flat fluidic oscillator in which an inlet nozzle is coupled through resonance chambers with an outlet nozzle. Means for jet smoothing are provided in the inlet nozzle. The defining surface of the resonance chambers are adjustable partially or wholly perpendicularly of the oscillator plane and formed as pressure-sensitive devices. <IMAGE>



16/24 © EPODOC / EPO

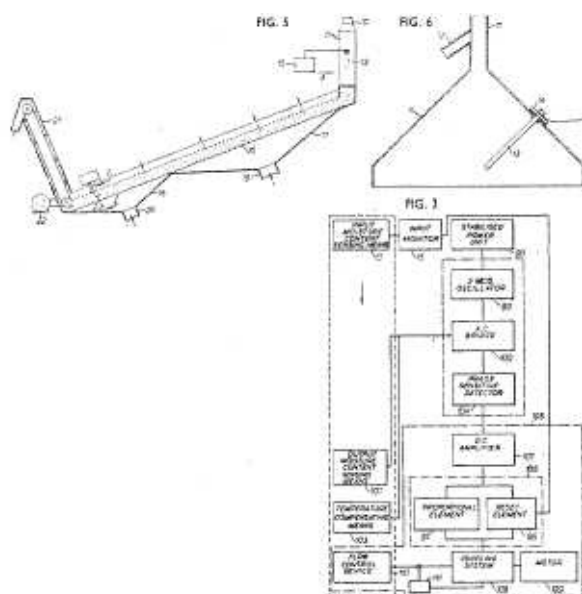
PN - [GB1415180](#) A 19751126
PR - DE19712165819 19711231
AP - GB19720058698 19721220
DT - **
CCI - [A24B9/00](#) ; [G01N27/223](#)
PA - HAUNI WERKE KOERBER & CO KG
TI - METHOD OF AND APPARATUS FOR ASSESSING THE **MOISTURE** OF TOBACCO OR THE LIKE
AB - 1415180 **Drying** tobacco HAUNI-WERKE KORBER & CO KG 20 Dec 1972 [31 Dec 1971] 58698/72 Heading F4G [Also in Division G1] A tobacco **drying plant** includes capacitive **moisture sensor** devices 3a, 3b and control circuits 28a, 28b (see Division G1). Tobacco 13 from a feeder 2 passes on to an endless



conveyer 42, Fig. 2, and a presser conveyer 44 presses the tobacco down on to an insulating plate 52 on the underside of which are electrodes 53, 54 of a capacitive **moisture sensor**. A feeler member 55 carrying a thermometer resistor element 60 is also provided. The tobacco then enters rotatable **drying drum** 1 where it is dried by air from an air heating device 4, controlled by circuit 28a, Fig. 5 (not shown), in accordance with the **sensor** 3a and thermometer 60 outputs, and which blows hot air through inlet 12 into the drum. Tobacco leaves drum 1 via shoot 16 and its **moisture** content is again measured by a second device 3b which via circuit 28b controls the adjuster 8 of a steam generator 7 which supplies steam to pipes 9 to remove any residual **moisture**.

17/24 © EPODOC / EPO

- PN - [GB1176135](#) A 19700101
- PR - GB19660010942 19660311
- AP - GB19660010942 19660311
- DT - **
- CCI - [F26B17/122](#) ; [F26B25/22](#) ; [G05D22/02](#)
- PA - NAT RES DEV [GB]
- TI - Improvements in or relating to Control Apparatus for a **Drying Plant**
- AB - 1,176,135. Controlled dryers. NATIONAL RESEARCH DEVELOPMENT CORP. 9 March, 1967 [11 March, 1966], No. 10942/66. Heading F4G. [Also in Divisions A2 and G3] Apparatus for controlling a **plant** or dryer for **drying** material comprises: input and output **moisture** sensors respectively positioned adjacent to the input and output points of the **drying plant** through which the material is passed, means for providing a control signal which varies with changes in the **moisture** content of the material sensed by the output sensor, a reset device for imposing an additional control factor on the control signal when the sensed output **moisture** content passes out of a selected range, and means for imposing on the signal a further control factor which varies in accordance with variations in the **moisture**



content of the material sensed at the input sensor. A dryer, Figs. 5 and 6, for **drying** particulate material such as grain, peas and beans, comprises an inlet duct 10 for incoming moist material leading into distributing shoot 11 having an overflow pipe 12. One electrode 13 of a resistance-type sensor, for sensing the **moisture** content of the incoming material, is located in the shoot 11, and is insulated therefrom by an insulating sleeve 14. The shoot 11 constitutes the other electrode of said **sensor**. The electrode 13 and the shoot 11 are connected to an input monitoring unit 15. The material passes, in a downwardly inclined path, beneath an upper inclined, perforated plate and over a similarly inclined, perforated bed-plate 16, beneath which are arranged two air manifolds 17 and 18. Heated air is supplied, through a duct 19 to the manifold 18, and thence passes upwardly through the material. Cooling air is supplied, through a duct 20, into the manifold 18 and thence passes upwardly through the material. The rate of flow of material through the dryer is controlled by the rate of oscillation of an oscillating grid (not shown) located above the bed-plate 16, or by the speed of a buckettype discharge elevator 21, which is driven by a variable-speed motor 22. Near the lower, output end of the dryer is located a capacitortype **sensor** 23, which is indicated, in Fig. 3, by the numeral 101 and is connected to an A.C. bridge circuit 100, which is connected to a 2 Mc/s. oscillator 99 powered by a stabilized power unit 98. A.C. signals from the circuit 100 are converted, by a phase-sensitive detector 104, into D.C. control signals corresponding in voltage to the difference between the sensed **moisture** content of the outgoing material and a predetermined "datum" **moisture** content. The polarity of the signals indicates whether said difference is positive or negative. These signals are sent to control means 105 where they are amplified by an amplifier 107

and passed through a control circuit 106 (comprising a proportioning element 97 and the re-set device 96, which imposes the additional control on the signals) to a coupling system 108, which comprises a variable-speed magnetic clutch and connects the driving shaft of a reversible, constant-speed motor 109 with a shaft actuating a flow-control device 110, e.g. associated with said oscillating grid, and a tacho-generator 111 providing feed-back signals, which are balanced against the control signals. In an alternative arrangement, the signals from the circuit 106 control the speed of the motor 22.

18/24 © EPODOC / EPO

- PN - [EP1849672](#) A2 20071031
- PNFP - EP1849672 A3 20090107
- PR - DE20061019865 20060428
- AP - EP20070008381 20070425
- DT - **
- CT - || STSE (A3)
[WO9116224](#) A1 19911031 [XY] (ALLIED SIGNAL INC [US])
[X] 18
* the whole document *
[Y] 1,8,10,11,15,19-23;
[DE202004017303U](#) U1 20050105 [Y] (FESTO AG & CO KG [DE])
[Y] 1,8,10,11,15,19-23
* the whole document *;
[DE3932096](#) A1 19900510 [A] (AUTOIPARI KUTATO FEJLESZTOE [HU])
[A] 1,12,14,18,23
* the whole document *;
[WO9305867](#) A1 19930401 [A] (ALLIED SIGNAL INC [US])
[A] 1,18,23
* the whole document *;
[EP1495934](#) A2 20050112 [A] (KNORR BREMSE SYSTEME [DE])
[A] 1,18,23
* the whole document *;
[DE202004019045U](#) U1 20050317 [A] (MANN & HUMMEL GMBH [DE])
[A] 1,18,23
* the whole document *
- CCI - [B01D53/0415](#) ; [B01D53/0454](#) ; [B01D53/261](#) ; [B60T17/004](#)
- CCA - [B01D2257/70](#) ; [B01D2257/80](#) ; [B01D2259/40009](#) ; [B01D2259/40081](#) ; [B01D2259/40086](#) ;
[B01D2259/4566](#)
- PA - (A2 A3)
HALDEX BRAKE PROD GMBH [DE]
- TI - (A2 A3)
Cartridge, compressed air reprocessing **plant** and method for operating a compressed air reprocessing **plant**
- AB - (A2)
A cartridge (1) for purifying and/or **drying** compressed air in a compressed air processing **plant** (47), including a treatment system with a pre-filter, cyclone, coalescence filter and **drying** agent, has a **sensor** (38) for evaluating the operating condition of the treatment system. Independent claims are included for: (1) a compressed air processing **plant** (47) with a cartridge as above, an air processing circuit

(48), a regeneration circuit (53), a control device for operation-dependent activation of the air processing and/or regeneration circuit and a receiver for data or signals from a transmitter in the cartridge; (2) a method for operating the compressed air processing **plant**, in which a measured value from the **sensor** (38) is monitored by the control device, and if this value (or a variant of the value) exceeds or falls below a threshold value, the control device (a) initiates regeneration operation, (b) adjusts regeneration operation, (c) generates a signal for exchange of the cartridge, (d) initiates compressed air processing operation and/or (e) adjusts compressed air processing operation; and (3) a variant of the compressed air processing **plant**, with: a cartridge having a treatment system as above, which adjusts the physical properties of the compressed air in an air processing circuit; a regeneration circuit, in which the compressed air is pretreated for further processing; and a control device to control or regulate alternation or the ratio between the processing and alternation circuits; the novel features being that (i) the air fed through the cartridge contacts a **moisture** evaluation **sensor** at the outlet side of the cartridge and (ii) the controller determines, in dependence on the air **moisture** content, one or more of the operability of the cartridge and the necessity for initiation or termination of regeneration or processing operation.

19/24 © EPODOC / EPO

PN - [EP1226875](#) A2 20020731

PNFP - EP1226875 A3 20060111

- EP1226875 B1 20080723

PR - US20010768612 20010125

AP - EP20020000625 20020111

DT - **

CT - || STSE (A3)

[US4392804](#) A 19830712 [A] (PUSHEE JOAN C, et al)

[A] 1-8

* column 1, line 26 - column 3, line 42; figures 1,2 *;

[EP0913205](#) A2 19990506 [DA] (ITW DYNATEC KABUSHIKI KAISHA [JP])

[DA] 1

* paragraph [0016] - paragraph [0025] *;

[US5632918](#) A 19970527 [A] (ZOOK JON C [US], et al)

[A] 1-8

* column 2, line 1 - line 55; figures 1,3 *;

[US5470656](#) A 19951128 [A] (KENNARD JEFFREY L [US], et al)

[A] 1-8

* column 2, line 40 - column 3, line 26; figure 1 *;

[EP0899071](#) A1 19990303 [A] (YKK CORP [JP])

[A] 1-8

* paragraph [0011] - paragraph [0012] *

* paragraph [0016] - paragraph [0026] *

* figure 1 *

CCI - [B05C11/1042](#); [B29B13/022](#)

CCA - [B29K2105/0097](#); [B29C2037/90](#)

PA - (A2 A3 B1)

ILLINOIS TOOL WORKS [US]

TI - (A2 A3 B1)

Adhesive application system and method of use

AB - (A2)

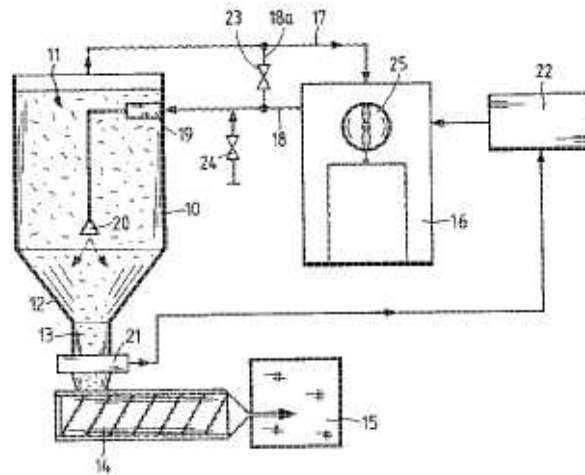
An adhesive supply unit for melting solid and quasi/solid materials, such as polyurethane (PUR) and other hot melt adhesives, is disclosed. The unit features an air control system that automatically starts, when the hopper lid (14) is closed, to remove **moisture** from the **moisture** laden air in the hopper interior (12) by alternately applying a vacuum to the hopper interior and then replacing the air with **plant** air that has passed through a series of dryers and filters (18). The dryers/filters, valving mechanisms and tubing are mounted directly to the machine body with a panel bolted to the machine, eliminating the need for storing the air control system on a separate cart. A **sensor** verifies that the hopper lid is securely closed before automatically initiating the **drying**/purging cycles which are repeated a number of times to assure appropriate dehumidification of air to acceptable levels. The control system utilizes a

pressure transducer instead of a fixed timer to operate each cycle until predetermined pressure levels are reached. A unique arrangement for securely clamping the hopper lid to the hopper to assure an air tight seal is also disclosed.

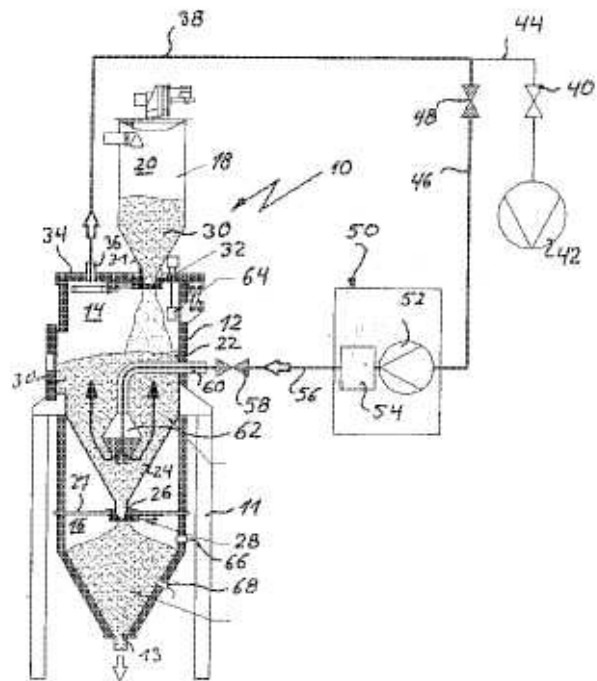
20/24 © EPODOC / EPO

- PN - [DE102006019865](#) B3 20070823
- PNFP - DE102006019865 C5 20120503
- PR - DE20061019865 20060428
- AP - DE20061019865 20060428
- DT - *; Rep
- CT - || STSE (B3)
[DE202004019045U](#) U1 20050317 [] (MANN & HUMMEL GMBH [DE])
 - || STSE (C5)
[DE102005039059](#) B3 20060928 [] (HALDEX BRAKE PROD GMBH [DE]);
[DE102005057628](#) A1 20070606 [] (MAHLE INT GMBH [DE]);
[DE102005050635](#) A1 20070503 [] (KNORR BREMSE SYSTEME [DE]);
[DE102004005569](#) A1 20050825 [] (DAIMLER CHRYSLER AG [DE]);
[DE10329401](#) A1 20050120 [] (KNORR BREMSE SYSTEME [DE]);
[DE10313575](#) A1 20040930 [] (WABCO GMBH & CO OHG [DE]);
[DE10240359](#) A1 20040311 [] (WABCO GMBH & CO OHG [DE]);
[DE3932096](#) A1 19900510 [] (AUTOIPARI KUTATO FEJLESZTOE [HU]);
[DE3724149](#) A1 19881117 [] (AUTOIPARI KUTATO FEJLESZTOE [HU]);
[DE3139682](#) A1 19830505 [] (BOSCH GMBH ROBERT [DE]);
[DE202004019045U](#) U1 20050317 [] (MANN & HUMMEL GMBH [DE]);
[DE29905469U](#) U1 19990624 [] (INST LUFT KALTETECH GEM GMBH [DE], et al);
[US3142830](#) A 19640728 [] (ALPHA RES AND DEV INC);
[EP1813491](#) A2 20070801 [] (BENDIX COMMERCIAL VEHICLE SYS [US]);
[WO0126783](#) A1 20010419 [] (HALDEX BRAKE PROD AB [SE], et al)
- CCI - [B01D53/0415](#) ; [B01D53/0454](#) ; [B01D53/261](#) ; [B60T17/004](#)
- CCA - [B01D2257/70](#) ; [B01D2257/80](#) ; [B01D2259/40009](#) ; [B01D2259/40081](#) ; [B01D2259/40086](#) ;
[B01D2259/4566](#)
- PA - (B3 C5)
 HALDEX BRAKE PROD GMBH [DE]
- TI - (B3)
 Cartridge for purifying and/or **drying** compressed air in processing **plant** of vehicle, includes **sensor** for evaluating operating condition and determining necessity for regeneration
- AB - (B3)
 A cartridge (1) for purifying and/or **drying** compressed air in a compressed air processing **plant** (47), including a treatment system with a pre-filter, cyclone, coalescence filter and **drying** agent, has a **sensor** (38) for evaluating the operating condition of the treatment system. Independent claims are included for: (1) a compressed air processing **plant** (47) with a cartridge as above, an air processing circuit (48), a regeneration circuit (53), a control device for operation-dependent activation of the air processing and/or regeneration circuit and a receiver for data or signals from a transmitter in the cartridge; (2) a method for operating the compressed air processing **plant**, in which a measured value from the **sensor** (38) is monitored by the control device, and if this value (or a variant of the value) exceeds or falls below a threshold value, the control device (a) initiates regeneration operation, (b) adjusts regeneration operation, (c) generates a signal for exchange of the cartridge, (d) initiates compressed air processing operation and/or (e) adjusts compressed air processing operation; and (3) a variant of the compressed air processing **plant**, with: a cartridge having a treatment system as above, which adjusts the physical properties of the compressed air in an air processing circuit; a regeneration circuit, in which the compressed air is pretreated for further processing; and a control device to control or regulate alternation or the ratio between the processing and alternation circuits; the novel features being that (i) the air fed through the cartridge contacts a **moisture** evaluation **sensor** at the outlet side of the cartridge and (ii) the controller determines, in dependence on the air **moisture** content, one or more of the operability of the cartridge and the necessity for initiation or termination of regeneration or processing operation.

- PN - [DE102005004533](#) A1 20060810
- PR - DE20051004533 20050131
- AP - DE20051004533 20050131
- DT - *, Rep
- CCI - [B01J19/1862](#) ; [B01J19/20](#) ;
[B01J19/245](#) ; [B01J19/26](#) ;
[B01J4/002](#) ; [B29C45/18](#) ;
[B29B13/065](#) ; [C08G63/90](#) ;
[F26B9/063](#) ; [F26B21/083](#) ;
[F26B25/22](#)
- CCA - [B29K2067/00](#) ; [B01J2219/00063](#) ;
[B01J2219/00123](#) ; [B01J2219/00202](#) ;
[B01J2219/00231](#) ; [B01J2219/00238](#) ;
[B29C2045/0096](#)
- PA - MANN & HUMMEL PROTEC GMBH
[DE]
- TI - **Drying** of polymer granules, e.g.
for polyethylene terephthalate
with low acetaldehyde content,
involves controlling **drying** gas
according to polymer exit
properties
- AB - Polymer granules (11), e.g.
polyethylene terephthalate, are
dried by circulating (17, 18) hot
gas, e.g. air or nitrogen, through
them. The temperature, quantity
and **moisture** content of the gas is
controlled (22) according to the
temperature, residual **moisture**
and density of the polymer as
measured (21) at the exit from
the **drying** vessel (10). The
sensors (21) at the exit can
include a **moisture sensor**, a
capacitance **sensor**, or a
temperature **sensor**. **Moisture**
content of the **drying** gas is
controlled through its dew point
by a by-pass (23) or at the
conditioning **plant** (16). The **drying**
gas is in the temperature range
of 160 to 180 [deg]C and in the
dew point range of -15 to -25
[deg]C.



- PN - [DE102004034293](#) A1 20060209
- PNFP - [DE102004034293](#) B4 20120426
- PR - [DE20041034293](#) 20040715
- AP - [DE20041034293](#) 20040715
- DT - - *, Rep
- CT - || STSE (A1)
[DE19902327](#) A1 20000727 [] (BECKER ACHIM [DE], et al);
[DE4321142](#) A1 19950105 [] (ROTH UDO [DE], et al)
- || STSE (B4)
[DE4321142](#) A1 19950105 [] (ROTH UDO [DE], et al);
[DE19902327](#) A1 20000727 [] (BECKER ACHIM [DE], et al);
[US2002024162](#) A1 20020228 [] (MAGUIRE STEPHEN B [US])
- CCI - [B29B13/065](#) ; [F26B9/103](#) ;
[F26B17/128](#) ; [F26B17/1425](#)
- PA - (A1)
TSCHRITTER THORSTEN [DE]
- (B4)
ALFONS TSCHRITTER GMBH [DE]
- TI - (A1)
Loose particulate material **drying plant**, in particular for plastic granules, comprises vacuum chamber with upper material feed and lower material extraction systems and valves controlling partial material feed and take-off
- AB - (A1)
A vacuum chamber(14), which can be connected to a vacuum source (42), has a material feed(20) above and a material take-off system(16) below. A valve(32) between the tank and material feed opens and closes a material inlet(31) by which loose material falls under gravity into (14). Another valve between (14) and (16) opens and closes an outlet (26) which enables dried loose material(30) to fall out under gravity. Hot dry air is supplied via a feed line(50) to the lower area(24) of the vacuum chamber(14) and the vacuum source(42) is connected at the upper area. A line(38) connecting with the vacuum source can also be connected to the air feed line. A material level recording **sensor** (64) in the vacuum chamber is connected to the upper closure valve(32) and closes the latter when a specific level has been reached. Similarly, in the material take-off system(16) a



second material level **sensor** (66,68) closes or opens the second valve(28) when a specific level has been reached. Material is fed to the upper area of the vacuum chamber via a material storage tank or a gravity feed downpipe. The material take-off system comprises either an extraction chamber(16) or a downpipe. An independent claim is included for a method of **drying** loose particulate material(30) in which: a) loose material is heated in a vacuum chamber(14) to a specific **drying** temperature; b) the chamber is evacuated for a given period to remove residual **moisture**; c) the material is heated to a processing temperature and part of the material is extracted from the vacuum chamber; and d) the chamber is refilled with loose material to be dried.

23/24 © EPODOC / EPO

PN - [DE4441350](#) C1 19960613

PR - DE19944441350 19941121

AP - DE19944441350 19941121

DT - *, Rep

CT - || STSE (C1)
[EP0520322](#) A1 19921230 [] (KRIEG GUNTHER [DE])
[EP0453797](#) A2 19911030 [] (YOKOGAWA ELECTRIC CORP [JP])
[EP0323552](#) A2 19890712 [] (PROCESS AUTOMATION BUSINESS [US])

CCI - [F26B5/048](#) ; [F26B11/14](#) ; [F26B25/22](#) ; [G01N21/3554](#)

PA - BOHLE L B PHARMATECH GMBH [DE]

TI - Infrared spectroscopic measuring system for **moisture** content of materials in mixer and dryer **plant**

AB - **Moisture** content of material in a granulator mixer and vacuum **drying** equipment is measured by an infra-red spectroscopic device with a measuring **sensor** (6) with fibre optic, extending into the material down to the top edge of the stirrer blade and equipped with a viewing window (8) at an angle to the longitudinal axis of the fibre optic. The end of the fibre optic away from the window leads to a detector. A flushing gas nozzle (10) may be provided in the region of the window, at the end of a flushing probe (11) located within the **sensor**.

24/24 © EPODOC / EPO

PN - [DE2150259](#) A1 19730412

PNFP - DE2150259 B2 19780921
 - DE2150259 C3 19790523

PR - DE19712150259 19711008

AP - DE19712150259 19711008

DT - *, Rep

CCI - [B41F23/0426](#)

PA - (A1)
 BURDA FARBEN KG

TI - (B2)
Drying system for intaglio printed web - has closed loop control of solvent recovery

from **drying** air

AB

- (B2)

Drying system for rotary intaglio press has a hood through which **drying** air is passed. The volume of air fed into the hood is regulated by a first closed loop which has feedback from a **sensor** (1) measuring the **moisture** content of the web leaving the dryer. A part of the outflowing air is abstracted (17) for recovery of the ink solvent. A second control loop regulates the minimum volume of the abstracted air in proportion to the total mass flow. A third loop acts on the solvent recovery **plant** to keep the amount of solvent vapour in the abstracted air to a minimum.

[SS 26]