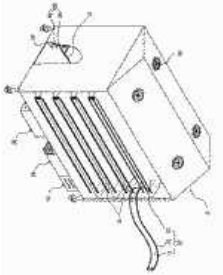
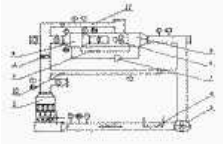
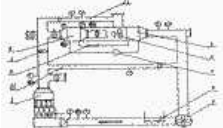
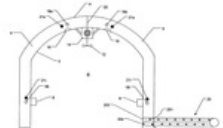
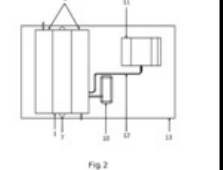
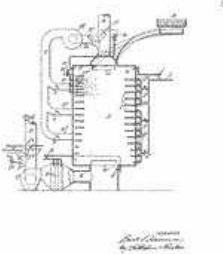


Patent families - 41 results

#	 	Title	Publication number	Publ. date	Applicant/Assignee	
1.		Drying machine for agricultural and marine products	KR200193192	2000-08-16	BAEK, NAM CHOON	100 %
The present invention relates to a device for drying agricultural and marine products, the present invention relates to agricultural and marine products for accommodating the storage rack (12) is respectively installed, formed on the front surface of the solar transmission means is provided in (20) a body (10) closing; mounted on the floor of the (10) body for selectively supplying hot air into the inside thereof so that the hot air generating member (30); mounted on the floor of the (10) body for selectively cooling with cooling pipes (42) so as to supply refrigeration member (40) selectively; of circulating air within the main body (10) so that the circulating unit (50); the temperature inside the housing (10) and adapted to sense the humidity sensing unit (60); and said sensing portion (60) for receiving each of the detection signal, a signal generating member (30) which receives the hot air circulating unit (50) and the refrigeration member (40) and a control section (70) to control of the present invention. The present invention relates to, the front face of the transparent body (10) by forming, by using natural sunlight drying grain can be simultaneously forced drying as well as hot air can be forced drying, concentration by using a refrigeration member (40), number, axis, the forest can be lyophilized and stored at a low temperature, the moving wheel body (10) is provided and can be conveniently moved, the body (10) is composed of small manufacturing costs can be saved and the effect is provided.						
						
2.		Heat pump and hot blast combined drying apparatus	CN1884944	2006-12-27	FOODSTUFF ENGINEERING INNOVATION CENTER JIANGXI ACADEMY OF SCIENCES	81 %
The invention relates to dewater vegetable heat pump-hot wind coupled drier, wherein the invention is formed by drying room, expanding valve, inlet air door, vaporizer, condenser, condenser fan, compressor and cycle fan; the condenser and the drying room are connected via tube and cycle fan; the drying room via tube and air door is connected to the vaporizer; the vaporizer and the condenser have control expanding valve between them; the condenser is arranged with condenser fan; the entrance of compressor is connected to the vaporizer and the condenser; the auxiliary heating device is arranged between the drying room and the cycle fan; and the invention has branch tube and bypass tube. The invention has high drying speed, non-microbe pollution, low cost and high quality.						
						
3.		Dryer integrated with the heat pump and hot air	CN200965390	2007-10-24	FOODSTUFF ENGINEERING INNOVATION CENTER JIANGXI ACADEMY OF SCIENCES	81 %
The utility model discloses a heat pump and hot-air combined drying device used for dehydrating vegetables. The utility model comprises a drying chamber, an expanding valve, an air-intake door, an evaporator, a condenser, a condensing fan, a compressor and a circulating fan. The condenser is connected with the drying chamber through a pipeline and the circulating fan. The drying chamber is connected with the evaporator through the pipeline and an air-door. The expanding valve used for controlling is arranged between the evaporator and the condenser. A condensing fan is arranged on the condenser. The outlet and inlet of the compressor are communicated with the evaporator and the condenser. An assistant heater is additionally arranged between the drying chamber and the circulating fan. And a bypass pipe and a branch pipe are also arranged between the drying chamber and the circulating fan. The utility model has the advantages of quick and equal drying speed, large disposing quantity without the microbe pollution, better quality after drying, low manufacturing cost and energy consumption. And the 'three wastes' are not generated in the manufacturing process. The utility model is especially suitable for the further process of various green foods, especially for the drying of vegetables and materials containing a high quantity of sugar or albumen. The utility model can be widely applied to the industries such as biology, pharmacy and chemistry, etc.						
						
4.		Solar-powered drying, heating and air-conditioning system	EP2577199	2013-04-10	SOLARKILNS HOLDINGS SOLARKILNS	81 %
A system for drying or heating product using solar energy comprising an enclosure defining a kiln chamber in which a charge of the product is placed, the enclosure having at each side of the chamber at least one passage through which air from the kiln chamber can pass to be heated by solar energy impinging on the enclosure, and an air flow system comprising at least one fan for generating a circulating air flow within the kiln chamber whereby air passes from one side of the charge to the other, and air supply means for drawing air into each passage from the bottom part of the kiln chamber at opposite sides of the charge to move through the passage into an upper portion thereof for discharge into an upper part of the kiln chamber through one or more outlets leading into the upper part of the kiln chamber.						
						
5.		Betel nut drying process for heat pump type fruit and vegetable drying machine	CN104764294	2015-07-08	JIANGXI TIANQUAN THERMAL TECHNOLOGY	80 %
The invention relates to a betel nut drying process for a heat pump type fruit and vegetable drying machine, in particular relates to a process for drying betel nuts, and belongs to the technical field of drying machines. The process comprises the steps of a) feeding the betel nuts into a drying area to be preheated; 2, 2) forcibly dehumidifying in the first stage, and entering the next stage when the humidity of the drying area reaches 75%; 3) forcibly dehumidifying in the second stage, entering the next stage when the humidity of the drying area reaches 65%; 4) concentrating and humidifying, and entering the next stage when the humidity of the drying area reaches 55%; 5) concentrating and shaping, and entering the next stage when the humidity of the drying area reaches 45%; 6) drying at high temperature, and entering the next stage when the humidity of the drying area reaches 32%; 7) uniformly drying to enable uniform dryness of the betel nuts. The process has the advantages that 1, the concentrating and dryness meet the user requirement, and the quality and taste of the dried betel nuts can be ensured; 2, large social and economic benefits are brought.						
6.		A multipurpose solar dryer	IN201721034865	2019-07-12	AISECT UNIVERSITY	80 %
A multipurpose solar dryer is disclosed. The multipurpose solar dryer comprises a transparent lid 1 adapted to be secured with a metal box 2 at the top open end thereof, removably. A reflector 3 is provided with the box 2 such that to direct solar irradiance inside the dryer box 2. A honeycomb type structure 4 is provided below the metal box 2 for facilitating air cross ventilation. A stand 6, adapted to be mounted on a base plate 7, is provided for supporting the dryer box 2 thereon. An automated piston cylinder arrangement 8 is provided below the dryer box 2 such that to tilt the dryer box 2 as and when required so as to tilt the box in order to receive maximum sunlight. An insulated cooling box 9 is provided to store a cooling fluid and supply the same to the cooling coil 10 so as to provide cooling effect to the dryer box 2. A controller 12 is provided to maintain drying characteristic and temperature inside the dryer box 2 needed to retain the nutritious value of goods dried in the multipurpose solar dryer. A solar photo voltaic system 13 is provided to generate electric energy needed to operate different electric components of the solar dryer.						
						
7.		Apparatus for drying materials	US1408456	1922-03-07	CARRIER	80 %
No abstract available						
						

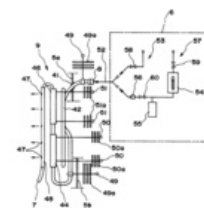
8. Heat treatment system using superheated steam US20050254803

2005-11-17

AOKI KOGYO KABUSHIKIKAISHA
AOKI INDUSTRIAL
AOKI INDUSTRIES
AOKI KOGYO
TATSUNORI ONO KANAGAWA
PREFECTURE YOKOHAMA SHI
GREEN DISTRICT TERAYAMA CHO 1 8
3 1 D 1 0 4

80 %

The present invention provides a heat treatment system, which includes a treatment chamber having an input port and a discharge port for charging and discharging materials to be treated. A heating system including a plurality of pipe-like heaters positioned one after another in serial arrangement is provided so that the heating temperature is gradually increased for heating the steam or the atomized water introduced from the water feeding system into the heaters by applying voltage on the heaters to turn the steam and the atomized water to superheated steam, and for performing heat treatment on the materials to be treated by injecting the superheated steam into the treatment chamber. A circulating system is provided for sucking the superheated steam and the **dry** distillation gas in the treatment chamber and for supplying the steam and the gas again into the treatment chamber after deodorizing and filtering, and a control unit is provided for controlling operating conditions such as supply quantity of the steam, duration of treatment, etc.



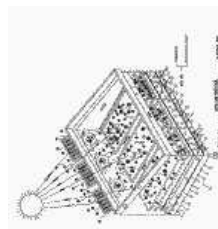
9. Solar powered closed cabinet food dryer with electric stand-by facility IN0326/CHE/1999

2006-10-13

Rao Mallavarapu Ramakrishna (I)

80 %

The invention relates to Solar Powered Closed Cabinet Food Dryer with electric stand-by facility for dehydration of fruits and **vegetables** and other applications. The design of this dryer is based on the combination of solar thermal and solar photovoltaic technologies in aluminum closed cabinet dryer in a forced circulation mode with exhaust **fan**, driven by power generated by solar photovoltaic panels. The ambient **air** enters into the cabinet through bottom louvers of the closed cabinet and gets heated up by solar radiation that enters through glass on the top which is placed in oblique angle to the horizontal plane of the cabinet. Exhaust **fan** facilitates removal of hot **air** containing moisture from the material kept in for drying. The numbers of food trays are adjusted proportional to volume of cabinet and area of trays for effective drying. The dryer is high efficient and maintains higher temperature over ambient. The process of dehydration of products in a clean, environment meets hygienic and safe food practices applications.



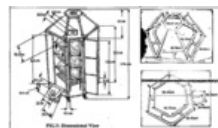
10. Elongated hexagonal pyramid shaped portable solar dryer IN201841025031

2018-07-13

T Rajamanikandan

80 %

The elongated hexagonal pyramid shaped portable (EHPP) solar dryer is made up of mild steel square pipe, PET sheet. The EHPP solar dryer is mainly consists of three major parts, i) Elongated pyramid shaped top chamber, ii) Elongated hexagonal shaped bottom chamber and iii) Electronic controller setup. Wherein the advantages of the elongated hexagonal pyramid shaped portable solar dryer are i) Uniform hot **air** spreads to entire dryer, ii) 24x7 operation is possible, iii) Easy portability and iv) Less weight and Low cost and v) Less drying time.



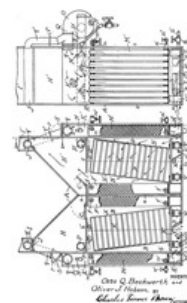
11. Process and apparatus for dehydrating US1420679

1922-06-27

ANHYDROUS FOOD PRODUCTS COMPANY

80 %

No abstract available



12. A solar operated apparatus for grain drying IN201921005003

2019-03-01

DHANDE Himanshu Kishor
KHOPE Pravin Balkrishnaji

80 %

The present invention relates to a solar operated apparatus for grain drying for the preservation of the food. It comprises of solar collector (reflector), adjusting slot, connector, **air** heater chamber, stand, drying chamber, helical screw assembly, handle, hopper and hose pipe. The entire structure is supported on a stand. The stand is made up of mild steel square bar and drying chamber along with helical screw assembly are thread bolted to the square mild steel bar. **Air** heater chamber is also thread bolted to the downside of the stand. Solar collector (reflector) is clamped to **air** heater with the help of screw. A connector is provided on a frame to adjust the angle of solar collector (reflector) by adjusting its position in adjusting slot. Hot **air** of **air** heater is passed through the nozzle via hose pipe to the drying chamber to **dry** the food grains. Grains need to be dried, inserted through the trapezoidal hopper provided on the top surface drying chamber. Grains are forwarded through the helical screw assembly which is rotated manually with the help of handle. Exit for food grains is provided on the lower side of the drying chamber. In this innovation, the heated **air** from a separate solar collector is passed through a grain bed, and at the same time, the drying cabinet absorbs solar energy directly through the reflector. The dryer exhibited sufficient ability to **dry** food items reasonably rapidly to a safe moisture level and simultaneously it ensures a superior quality of the dried product.



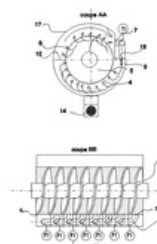
13. Fluidised bed dryer having an archimedean screw WO2013/002625

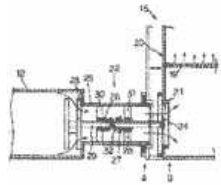
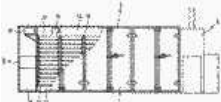
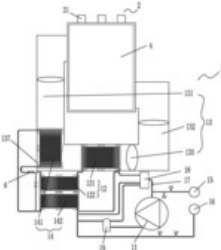
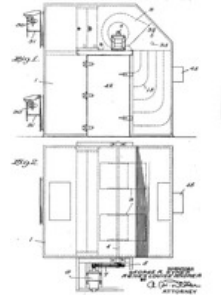
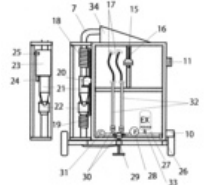
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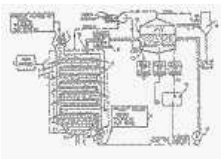
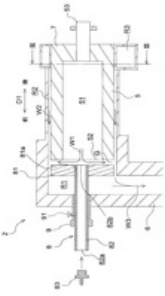
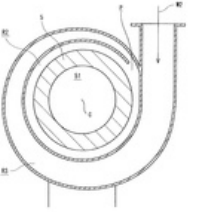
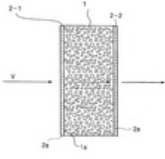
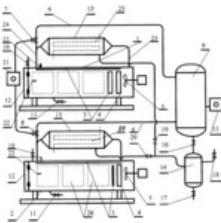
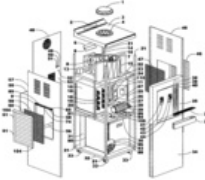
UNIVERSITY SIDI MOHAMED BEN ABDELLAH

80 %

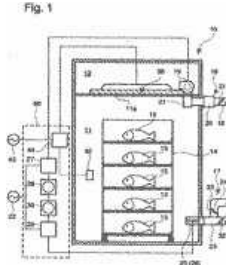
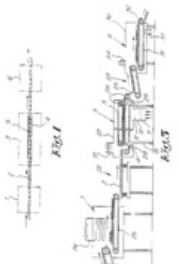
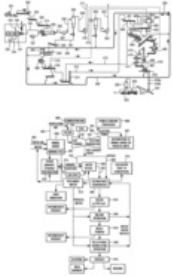
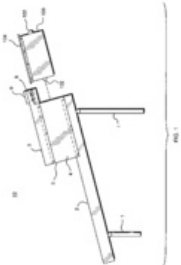
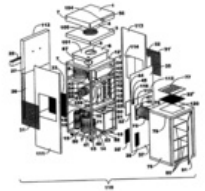
The invention relates to the field of drying solid bodies, which is an integral operation in process engineering. The invention relates to a unit for drying solid bodies in the form of granules. The invention relates to a continuous drying method using convection as a heating mode in a fluidised solid gas medium. The flow of the product is caused by an Archimedean screw, and the aeraulic circuit is provided by passing through the product, creating gas/solid fluidisation along a helical path.

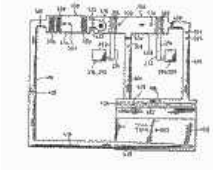
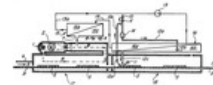
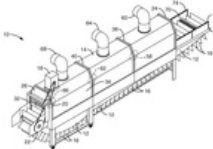
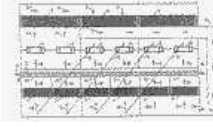
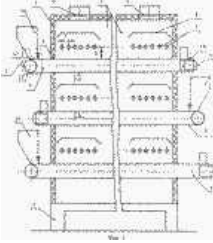


14.	Tea seed drying process of heat pump fruit and vegetable dryer	CN105674688	2016-06-15	JIANGXI TIANQUAN THERMAL TECHNOLOGY	80 %
The invention relates to a heat pump fruit and vegetable drying process, in particular to a tea seed drying process of a heat pump fruit and vegetable dryer. The tea seed drying process of the heat pump fruit and vegetable dryer comprises the following steps of (1) the preheating stage, (2) the first stage of powerful humidity elimination, (3) the second stage of powerful humidity elimination, (4) the high-temperature drying stage, and (5) the uniform drying stage. The tea seed drying process has the following advantages that 1, the production efficiency is high, and the process is weatherproof; 2, the social and economical benefits are remarkable; and 3, the tea seed dryness and oil yield meet the requirements of users.					
15.	Air supply swithcing apparatus for rack type dryer and air supply amount controller	JP10122750	1998-05-15	SATAKE ENGINEERING	80 %
PROBLEM TO BE SOLVED: To eliminate an electric facility by mechanically switching air supply of hot air to a plurality of drying containers in rack type dryer. SOLUTION: A containing drying container 15 is moved from a containing position B to a drying position A. Thus, a swithcing valve 23 is pressed by a fixing plate 24 of the container 15, an air duct is connected from an air supply passage to a connecting port 21, and hot air of a dryer 13 is supplied to the container 15. When the container 15 is moved from the position B to the position A, the plate 24 pushes a slide shaft 29, and hence the valve 23 is moved in a direction for communicating with the duct 12 and the port 24 against elasticity of a compression spring 32. On the contrary, when the container 15 is moved from the position A to the position B, the valve 23 is moved in a direction for shutting off the duct 12 from the port 21 by elasticity of the spring 32. COPYRIGHT: (C)1998,JPO					
					
16.	Drier usable as low temperature storehouse for farm and marine products	KR200184463	2000-06-01	SHIN JONG-WOONG SHIN, CHANG HUN	80 %
This invention relates to a low temperature dryer functions as a reservoir to be satisfied concentrations. A low temperature reservoir for marine both as a dryer, the inner wall is retained. One side of the burner (22) body made (4) with insulation and heat sink (24) composed of a warm air (6) blower (26) is installed inside the opening of the main body (4) by a warm air through the passage (12) formed in a lower part and to allow diffusion of the, and a unit cooler (30) body (4) composed of the other cooler (28) connected to the air cooling device (8) is provided that is formed on an inside of the body (4) through the air passage (14) and therefore the refrigeration necessary as a diffusion temperature reservoir and the dryer can be selectively using the invention.					
					
17.	Heat pump-microwave combined drying device	CN103900355	2014-07-02	CHINESE ACADEMY OF AGRICULTURAL MECHANIZATION SCIENCES	69 %
A heat pump-microwave combined drying device comprises a heat pump system, a microwave system and a control system. The heat pump assembly and the microwave system share a drying chamber, the microwave system is installed on the top of the drying chamber, the heat pump system is connected with the drying chamber through a circulating air duct, and the control system is connected with the heat pump system and the microwave system, used for setting and adjusting drying conditions and online monitoring drying parameters, and capable of selecting microwave drying and/or heat pump drying according to the characteristics of materials and finished product requirements so that high water content materials with different shapes and different water contents or under high-humidity conditions can be dried. The heat pump-microwave combined drying device is reasonable in structural layout, easy to use, maintain and repair, uniform in drying, large in processing capacity, efficient, free of microbial pollution and capable of saving energy, the process is advanced, and the quality of dried products is good. The heat pump-microwave combined drying device is especially suitable for drying fruit and vegetables, drying marine products and drying materials which are high in heat sensitivity and prone to oxidization, and applied to the biological industry, the pharmaceutical industry, the chemical industry and the like.					
					
18.	Process for dehydrating watercontaining materials	US2318027	1943-05-04	LOUISE ANDREA AGNES SYKES GEORGE A	68 %
No abstract available					
					
19.	Solar and electric energy dryers	EP2215417	2010-08-11	VESELINOVIC MILOS VESELINOVIC NENAD	68 %
Solar and electric energy dryers use the sun as a main energy source, and electric power as an additional energy source. Dryer has a single pipe system, the flow being regulated by a microprocessor /8/ and electromagnetic valves/30/. Pipes wind the inside of the dryer and gradually climb up to the top of the dryer, and then descend and fill in the horizontal space all up to the end of the dryer, at the same time these enable equal temperature balance along the cubic volume of the dryer. At the top of the dryer there is a outlet dome /34/ that accepts evaporations, directs it into a outlet pipe /7/, which is enclosed either by a cooling tank /23/ or a cooling spiral /18/ and extends the condenser /49/. Ventilator /22/ pushes into the air through the input pipe/13/ and back into the dryer. Solar panel /44/ is coupled to the dryer in an elastic coupling /17/ and makes a functional unity. The angle of the solar panel /44/ is adjusted by the hook /15/ of the solar panel and it depends on the latitude and the position of the sun. The invention is intended for drying: wholesome, spicy and aromatic herbs, mushrooms, fruits and vegetables.					
					
20.	Portable bench-type kitchen garbage drying processing machine	CN101191694	2008-06-04	NOBUHIRO INDUSTRY	68 %
The present invention provides a kind of lightweight portable table kitchen garbage dry processor. It is quiet and safe for human body. This kind of lightweight portable table kitchen garbage dry processor (1) comprises: an inner-pot (2), which is used for dealing with garbage in kitchen; a kitchen garbage processing shell (3), which comprises a department used for holding the said inner-pot (3), the said inner-pot can be loaded or unloaded act as holding department; an lid (4), it fixes on the kitchen garbage processing shell (3), and can be equal to kitchen garbage processing shell (3) for open and close, used for covering the upper of the kitchen garbage processing shell (3), and seal the inlet of the said inner-pot (2). It is characterized in that it comprises: an air-entering access, which fixes in the said lid (4), and communicates with the said inner-pot (2); air-exhausting exit, which fixes in the said lid and communicates with the said inner-pot; equiblast devices, which is used for air-supply to the said inner-pot through the air-entering access; heating-parts, which is used for heating the said inner-pot.					

21.	Method for drying by vapor compression	EP0084031	1983-07-27	ERIDANIA BEGHIN SAY BEGAN SEI BEGHIN SAY	68 %	
Method for drying damp material by vapor recompression. The vapor (8) released by the damp material (4) circulating on the heating elements (2) of a vertical dryer is recompressed by means of a motor-compressor (9) so as to provide the heat-conveying fluid to the heating elements (2) of the dryer. Application to the drying of damp vegetables.						
22.	Hot air generation device and dryer	JP2019070481	2019-05-09	KANSAI SANGYO	68 %	
PROBLEM TO BE SOLVED: To provide a dryer which can adjust internal pressure of a combustion furnace without affecting an air quantity of a dry gas. SOLUTION: A dryer includes: a combustion furnace 5 including a burner; and a baffle plate 81 which is provided facing a hot air outlet 52 of the combustion furnace 5. Hot air W1 blown from the hot air outlet 52 flows through a gap G between the combustion furnace 5 and the baffle plate 81. The baffle plate 81 is provided so as to move along a fore and aft direction D1 in a direction such that the baffle plate 81 moves close to the hot air outlet 52 and in a direction such that the baffle plate 81 spaces away from the hot air outlet 52. SELECTED DRAWING: Figure 2 COPYRIGHT: (C)2019,JPO&INPIT						
23.	Hot air generation device and dryer	JP2019070482	2019-05-09	KANSAI SANGYO	68 %	
PROBLEM TO BE SOLVED: To provide a hot air generation device which can introduce outer air into an outer air supply passage uniformly. SOLUTION: A hot air generation device includes: a mixing chamber; a combustion furnace 5 for generating hot air by a burner to supply the hot air to the mixing chamber; an outer air supply passage R2 communicating with the mixing chamber and extending in a predetermined direction; and an outer air introduction passage R3 for introducing outer air W2 and supplying the outer air to the outer air supply passage R2. The outer air W2 introduced into the outer air introduction passage R3 flows through the outer air supply passage R2 in the predetermined direction and flows into the mixing chamber to be mixed with the hot air and generate mixed air. The outer air introduction passage R3 has a spiral shape in which a cross sectional area gradually reduces from the upstream side to the downstream side. SELECTED DRAWING: Figure 3 COPYRIGHT: (C)2019,JPO&INPIT						
24.	Water vapor flow control structure and drying device using same	WO2017/099177	2017-06-15	ARAI FURNITURE MANUFACTURING TOKYO INSTITUTE OF TECHNOLOGY CENTRAL CARE ECOLOGICAL ENV DEVELOPMENT DALIAN	68 %	
A water vapor flow control structure comprises a carbide particle layer, and a first and a second moisture permeable sheet that sandwich the carbide particle layer therebetween. The diameters of the carbide particles in the carbide particle layer are larger than diameters of the holes in the first and second moisture permeable sheets. Thus, the carbide particles in the carbide particle layer are held by the first and second moisture permeable sheets without leaking.						
25.	Plant material drying apparatus	RU2302740	2007-07-20	Golitsyn Vladimir Petrovich	67 %	
FIELD: food-processing industry, in particular, plant product drying technique, more particular, vegetables, mushrooms, fruits, greens and spices. SUBSTANCE: apparatus has two drying chambers, receiver, heat-exchanger, sluice chamber, vacuum and air pumps, fan and air heater. Apparatus is further equipped with two heat-exchangers-condensers. Each of drying chambers is connected with one of heat-exchangers-condensers, and also with receiver to which vacuum pump is connected. Apparatus of such construction allows existing equipment to be used. EFFECT: simplified construction and operation, elimination of possible expenses for manufacture of costly and massive technique. 1 dwg						
26.	Combination dehydrator, dry return air and condensed water generator/dispenser	US20070175063	2007-08-02	MORGAN JANET S MORGAN MICHAEL	67 %	
A portable, combination dehydrator, dry return air and condensed water generator/dispenser configured to reduce the humidity in a dry storage unit. In one embodiment, a system draws intake air from the dry storage unit across the condenser of a heat exchanger and condenses water from the air, collecting the water in a storage tank. The dried return air is ducted into the dry storage unit. In one embodiment, the source of the intake air may be selected from either the dry storage unit or an alternative source (e.g., outside air.) The selection of the intake air source may be based on the humidity of the air (e.g., if the humidity of the air in the dry storage unit is above a threshold, the dry storage unit is selected.) If both of the alternate sources of intake air have humidities below a threshold level, operation of the system may be suspended.						

27.	Basil dehydration method capable of preparing basil essential oil incidentally	CN103031209	2013-04-10	ZIHONGYUAN HERBAL TECHNOLOGY	67 %	
The invention provides a basil dehydration method capable of preparing basil essential oil incidentally. The dehydration method comprises a step of drying and dehydrating the basil by using a closed dryer, and also comprises a step of collecting the steam, a step of condensing the steam, a step of filtering by an ultra-filtration membrane, a step of filtering by a nano-filtration membrane and a reverse osmosis concentrating step, wherein the concentrated solution obtained after the reverse osmosis concentrating step is basil essential oil, and the permeate liquid is basil essence. By adoption of the method, the steam generated in the basil dehydration drying process is likely to be collected and in which the contained vanilla essential oil is separated, thus the excellent economic effects of making waste profitable and making maximum use of basil are achieved.						
28.	Organic matter decomposition treating device	JP08299942	1996-11-19	SHINYO SANGYO	67 %	
PURPOSE: To obtain a treating device used at a low cost and safely at sea and on land in order to protect the global environment by mixing and agitating a decomposition medium material, organic decomposition microorganisms and organic matter to be decomposed in a decomposition tank and only feeding fresh air to perform odorless decomposition. CONSTITUTION: In a treating device body 1, a horizontal treating tank 2 is installed, and at the upper end of the back part of the treating tank 2, an air discharge filter 3 is installed. In the upper part of the front of the treating tank 2, an air introducing port 5 is installed. Besides, on the right and the left walls of the treating tank 2, an agitating shaft 8 is held, and to the agitating shaft 8, curved agitating blades are fixed through fixing arms. On the other hand, on the upper surface of the front of the treating device body 1, an feeding port cover 20 is attached. Inside a decorative panel 25 covering the treating device body 1, a heat insulating material 30 is fitted. In a space between the decorative panel 25 and the treating tank 2, a warm air fan 31 with temperature control is installed. That is, within the treating tank 2, a decomposition medium material 24, organic matter decomposition microorganisms and organic matter to be decomposed are mixed and agitated in the treating tank 2, and by feeding fresh air only, odorless decomposition is performed. COPYRIGHT: (C)1996,JPO						
29.	Process and apparatus for low-temperature dehydration	US3257737	1966-06-28	ANDREW GABRIEL MARGITTAI SEYMOUR C YUTER ANDRE GABRIEL MARGITTAI MARGITTAI THOMAS	67 %	
1,024,835. Drying methods and apparatus. MARGITTAI, A. G. Oct. 2, 1962 [Oct. 11, 1961], No. 36466/61. Heading F4G. [Also in Division A2] Moisture-containing food or other material is dehydrated by continuously recirculating over it a gas or gas mixture inert to the material, the gas or gas mixture being cooled so as to bring the material to within the temperature range of -10° C. and +15° C., preferably between - 5° C. and +10° C., continuously passing the gas or gas mixture over a hygroscopic material for extraction therefrom of moisture taken up by it from the material to be dehydrated and continuously recirculating the hygroscopic material through heating means for driving off the moisture absorbed by it from the gas or gas mixture. Material stacked in trays 5 is dehydrated by circulating in the direction of the arrows 12 a gaseous mixture produced by igniting a pre-determined quantity of alcohol at a burner 9, the heat of combustion being removed through a heat exchanger 10. The temperature of the gaseous mixture is regulated by the heat exchanger 13 of a refrigerator 14 and moisture is extracted by exposing the gaseous mixture to hygroscopic material progressing downwardly on inclined reciprocating perforated trays within a frame 7. Liquefied hygroscopic material collected in a receptacle 15 at the base of the frame 7 is taken through an evaporator 22, a concentrator 23 and a drum dryer 24, and the dried material is passed to a collecting tray 25 for recirculation. (From GB1024835 A)						
30.	Freeze drying methods and apparatuses	US9459044	2016-10-04	HARVEST RIGHT	67 %	
A freeze drying method includes decreasing pressure to a first vacuum pressure and, as a result of reaching the first pressure, a control system automatically activating a heater. The method includes sublimating solid water, increasing pressure to a second vacuum pressure greater than the first pressure, and, as a result of reaching the second pressure, the control system automatically deactivating the heater. As a result, a decrease in pressure, pressure-activated heater activation, material heating, water sublimation, and increase in pressure occur, accomplishing pressure-activated heater cycling. Another freeze drying method includes decreasing a temperature in a chamber to -50° F. or less using a refrigeration system with single-stage compression and sublimating solid water at a vacuum pressure. A freeze drying apparatus includes a chamber, a vacuum pump, a heater, and a control system programmed with instructions operable to accomplish pressure-activated heater cycling.						
31.	Combination dehydrator and condensed water dispenser	WO03/078909	2003-09-25	H2OLIQUIDAIR H2OLIQUIDAIR OF FLORIDA MIKE & JANET MORGAN MICHAEL MORGAN MORGAN, JANET 3 more...	53 %	
A portable, atmospheric dehydrator and water condenser (110) for dehydrating fruits and vegetables while producing pure atmospheric condensation from humidity found in the air and purifying the water for dispensing and drinking purposes.						

32.	Apparatus for drying objects	EP0709634	1996-05-01	MISATO KIYOKAWA SHIN KIYOKAWA, SHIN MASARU YANAGISAWA NAMIKI, HIDEO 3 more...	50 %
A far infrared radiation heater (33) is disposed on the back of a ceiling (11a) of a drying chamber (11). The inside of the drying chamber is evenly heated by the heat emitted from the far infrared radiation heater. The drying chamber is provided with air charge means (16) and air exhaust means (17) each communicating with the inside thereof. Outside air is introduced into the drying chamber by means of the air charge means. The air exhaust means continuously maintains the inside of the drying chamber in a state of reduced pressure. Objects to be dried which are placed in the drying chamber are dried by heating under reduced pressure while continuously introducing fresh air. <IMAGE>					
33.	Method and device for thermal drying of a solid product in small pieces	EP0953134	1999-11-03	D S P	47 %
The layer (2) of the product in small pieces is brought between a first contact element (4) and a second contact element (5) which are both in contact with the layer (2), whereby at least one of the contact elements (4 and 5) is heated and whereby at least one of the contact elements (4 and 5) is gas-permeable. The device applied therefore comprises a first contact element (4) and, opposed thereto, a second contact element (5), between which a layer (2) of the product in small pieces can be brought into contact with these contact elements (4 and 5), and comprises a heat source forming part of means for heating these contact elements (4 and 5) directly or indirectly.					
34.	Process and apparatus for manufacture of fertilizer from manure and sewage	EP1794522	2007-06-13	2292055 ONTARIO RMS RICHTER 0890241 B C ASURINYU AIPI HOLDINGS LIABILITY EARTH RENEW ORGANICS 4 more...	47 %
This invention discloses systems and methods for conversion of manure to novel fertilizer and/or soil builder products useful as input for organic farming operations. The equipment systems comprise a gas turbine generator unit (preferred heat source), a dryer vessel and a processing unit, wherein the connection between the gas turbine and the dryer vessel directs substantially all the gas turbine exhaust into the dryer vessel and substantially precludes the introduction of air into the dryer vessel. The dryer vessel receives the manure for contact with the turbine exhaust gases to convert the manure to a dry material, which is passed to the processing unit where it is formed into granules, pellets or other desired form for the final dry fertilizer product. The method comprises drying, heating and converting the manure to form novel self binding fertilizer and soil builder type products for organic farming and other uses.					
35.	Drying apparatus for granular bulk and sliced materials	US20040025366	2004-02-12	PAUL B SOUCY SOUCY PAUL B. SOUCY, PAUL B.	46 %
The invention is a convective airflow dryer system for granular, crushed, and sliced fruit and other crops and materials of greater than one quarter inch in average diameter that includes a distributed airflow container. The container may be removable and stackable and has multiple interior airflow plates extending from one surface of said container to an opposing surface, connecting an inlet plenum to an outlet plenum. The airflow plates are parallel and uniformly spaced so as to form material holding bays and are configured to freely admit, and transfer air through the bays and out of the container. The dryer system and the containers are configured for directing the full airflow of the dryer system through the container or set of interconnected containers.					
36.	Combination dehydrator and condensed water dispenser	US20080184720	2008-08-07	H2OLQUIDAIR OF FLORIDA H2OLQUIDAIR	46 %
A water-producing device having a condenser coil from a heat pump cycle condensing water thereon. A purification system is provided for purifying the water and a dispensing area is configured to dispense the water.					

37.	Dehydration apparatus and process of dehydration	WO92/02772	1992-02-20	SECOR	45 %	
The apparatus particularly useful for the dehydration of organic materials, includes a drying enclosure (100) to receive and contain materials to be dehydrated, a cooling section (200), with a first stage cooling coil (202) and a second stage cooling coil (204) to remove moisture from a frying fluid by condensation, a heating section (300) with a first stage heating source (302) and a second stage heating source (304) controllable for selecting the amount of heat output therefrom, to raise the temperature and lower the relative humidity of the drying fluid and a drying fluid handling system to convey the drying fluid in a closed loop through the sections of the apparatus. The process of the invention includes the general steps of heating a drying fluid, passing the drying fluid over the materials to be dried, cooling the drying fluid to condense moisture, heating the drying fluid to elevate its temperature and reduce its relative humidity, and reintroducing the heated drying fluid to the process loop to be recirculated through the apparatus until the desired degree of dehydration has been achieved.						
38.	Arrangement and method of drying articles	US4312136	1982-01-26	BUETTNER SCHILDE HAAS BABCOCK BSH	45 %	
Wet plasterboard to be dried is advanced along a path. At an upstream portion of the path, air is heated and directed towards the plasterboard for initial drying of the latter. A portion of the heated air is withdrawn and passed through one section of a heat exchanger whose other section contains water which exchanges heat with the heated air. The heated water is passed through a section of another heat exchanger whose other section contains fresh air which is heated by the heated water. The heated fresh air is directed towards the articles for further drying of the latter at a downstream portion of the path. A portion of the heated fresh air is exhausted and recirculated at the downstream path portion.						
39.	Desiccation apparatus and method	US20020040643	2002-04-11	WARE GERALD J.	45 %	
A desiccating device and method providing variable drying conditions allowing the desiccated material to substantially maintain its natural characteristics upon rehydration as well as have a low microbial content. The method provides a process of subjecting the material to ultrasound and flowing hot air or gas for a defined period of time. The ultrasonic frequency, temperature, air flow and time of exposure can be varied to produce the most efficient drying conditions depending on the material to be dried. The apparatus has plurality of drying chambers with forced heated air or gas input and output ducts and ultrasonic emitter. The material passes through each chamber at a pre-determined rate on a perforated conveyor belt in one embodiment of the invention. Optionally, the material may be placed on a drying bed or substrate comprising a number of spheres.						
40.	Method and apparatus for drying solid foodstuffs	US5600899	1997-02-11	BACKUS BEHEER	45 %	
A method and apparatus for drying solid foodstuffs is disclosed. The apparatus comprises a gas premeable conveyor belt, a plurality of heaters arranged under the conveyor belt. The apparatus further comprises a plurality of coolers. A cool gas is supplied to a first heater, heated and drawn through the conveyor belt by a first fan. The gas is transported back under the conveyor belt to a second heater, and then again drawn through the conveyor belt by a second fan. Thus, the gas is led through and along the conveyor belt along a corkscrew-shaped path against the direction of supply of the foodstuffs. As the gas is heated along its path, the gas temperature is lowest at the first location where the gas is drawn through the conveyor belt, which first location is nearest the discharge of the apparatus.						
41.	Apparatus for infrared drying of seeds	RU2010131602	2012-02-10	ST PETERSBURG UNIVERSITY	44 %	
FIELD: physics. SUBSTANCE: apparatus for infrared drying of seeds has tubular infrared radiators mounted under reflectors, said radiators having a ceramic functional cladding and an electrically heated coil inside, which are mounted on dielectric supports of the frame over trays carrying the layer of seeds, apparatus for reloading treated seeds onto the tray of a descending deck and a ventilator, fastened by a heat-insulated cover. The novelty is that infrared radiators with wavelength 1.5-3.0 mcm are distributed along the tray, whose bottom is in form of a teflon belt of an endless conveyor with spacing equal to 1.1-1.3 times the distance to the layer of the sunflower seeds on the belt with height of 2-3 cm, and reloading apparatus which is a bin fitted with a slide gate of an outlet port fitted between decks in chequered order at opposite ends of their transporters, wherein the conical tapering angle of the reloading bin is greater than the angle of repose of the granular material. EFFECT: invention must ensure given quality of drying sunflower seeds suitable for prolonged storage. 1 cl, 3 dwg						