

9/23 © EPODOC / EPO

- PN - [UA85473](#) C2 20090126
- PR - RU20050135826 20051118
- AP - UA20070008538 20061113
- DT - I
- CCI - [G21F9/32](#)
- PA - JOINT STOCK COMPANY "ALIANS GAMMA" [RU]; STATE UNITARY ENTERPRISE MOSNPO "RADON" [RU]
- TI - METHOD AND INSTALLATION FOR PROCESSING RADIOACTIVE WASTES
- AB - The invention relates to radioactive waste reprocessing. The inventive reprocessing method consists in supplying waste-containing packages to a plasma furnace, in pyrolysing said wastes in such a way that a coke residue is oxidised and in removing a melted slag and pyrolysis **gas** from the furnace, in after-burning the pyrolysis **gas** at a **temperature** of 1220-1350°C by supplying **air** thereto at two levels, i.e. at the level of the pyrolysis **gas** supply to a pre-combustion chamber and at the level of the top part of the combustion chamber main volume, in cooling exhaust gases to a **temperature** of 200-250° C, in consequently mechanically and absorbingly removing a condensed **moisture** and aerosols therefrom and in finally purifying said exhaust gases. The inventive plant comprises a waste loading unit provided with the loading hopper communicating by means of the sealed conveyor **belt** with a warehouse which is used for storing waste-containing packages and provided with waste presence sensors. Said loading hopper is provided with sealed shutters, a thermal screen and a loading sleeve. Said plant comprises a plasma shaft furnace provided with a melter unit and a slag draining unit connected to a slag melt receiving box, a device for supplying **air** to the furnace, a **gas** duct, a pyrolysis **gas** combustion chamber, a vapour heat exchanger and a **gas**-cleaning system. The furnace is provided in the shaft top part with centrifugal jet nozzles for emergency watering. The combustion chamber comprises the pre-combustion chamber and is provided with a plasmatron, which is arranged on the pre-combustion chamber lid, and with two devices for supplying **air** thereto. The **gas**-cleaning system is also provided with a **gas** filter-separator and a fine filter.

10/23 © EPODOC / EPO

- PN - [CN202853318U](#) U 20130403
- PR - CN20122421116U 20120824
- AP - CN20122421116U 20120824
- DT - I
- PA - DUAN WEI
- TI - Superheated steam wood drying device
- AB - In a superheated steam wood drying device, a pipeline is connected with a water supply end of a vapor generator, an outlet end of the vapor generator is connected with a water-vapor **separator**, a vapor outlet end of the water-vapor **separator** is connected with a superheat generator, and a water outlet end of the water-vapor **separator** is connected with the water supply end of the vapor generator through a conduit. The vapor generator is cylinder-shaped, coils are arranged outside the cylinder wall in a winding mode, the superheat generator is cylinder-shaped, the coils are arranged outside the cylinder wall in a winding mode, the coils are respectively connected with a corresponding high frequency generator which is connected with a programmable logic controller (PLC), an **air** suction fan is arranged at a vapor outlet end of the superheat generator, the **air** suction fan is connected with a drying room through a plurality of scattered pipelines, and the drying room is provided with a conveyor **belt** device. Through the PLC, intelligent control is achieved, **temperature** and **humidity** control are accurate and easy, **temperature** requirements of various woods are satisfied, and product quality is guaranteed.

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- PN - [CN202747745U](#) U 20130220
- PR - CN20122384167U 20120803
- AP - CN20122384167U 20120803
- DT - I

CCA - [Y02P70/40](#)

PA - ZIBO SENYUAN STRAW ENERGY DEV CO LTD

TI - Straw drying device

AB - The utility model relates to a straw drying device and belongs to the field of drying devices. The straw drying device comprises a three-barrel dryer, a drying fan and a cyclone **separator**, the three-barrel dryer, the drying fan and the cyclone **separator** are sequentially connected, an **air** inlet, a feed port, an **air** outlet and a discharge port are arranged on the three-barrel dryer, the **air** inlet is connected with a hot **air** source, the **air** outlet is connected with the drying fan, a discharge **belt** conveyor is disposed below the discharge port, and a discharge port at the lower end of the cyclone **separator** is located above the discharge **belt** conveyor. By means of the straw drying device, round-the-clock production requirements can be met, **moisture** in dried straw raw materials is uniform, the drying effect is good, mildew and the like during storing and transporting can be prevented, requirements of continuous production are met, and the rotating speed of the three-barrel dryer and feeding speed of a feeding skirt edge **belt** conveyor can be adjusted according to dry and wet conditions of raw materials and the flue-**gas temperature** of the tail of the dryer.

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PN - [CN102840752](#) A 20121226

PR - CN20121302340 20120823

AP - CN20121302340 20120823

DT - I

CT - || STSE (A)
[CN1651819](#) A 20050810 [A] (HE YIKE [CN])
 [A] 1-2
 * 全文 *;
[CN1133086](#) A 19961009 [] (HEAT WIN LTD [GB])
 [] 1-2
 * 说明书第7页倒数第6行-倒数第2行、第9页第10-12行及附图1-2 *;
[JP2003021303](#) A 20030124 [] (NAKANISHI MFG CO LTD)
 [] 1-2
 * 说明书第21-29段和附图1-3 *;
[CN202853318U](#) U 20130403 [R] (DUAN WEI)
 [R] 1-2
 * 权利要求第1-2项 *;
[CN101469863](#) A 20090701 [A] (UNIV TOKYO DENKI [JP])
 [A] 1-2
 * 全文 *

PA - DUAN WEI

TI - Overheat steam wood drying device

AB - An overheating steam wood drying device is connected with a water supplying end of a steam generator through a water supplying pipeline, an output end of the steam generator is connected with a water-steam **separator**, a steam output end of the water-steam **separator** is connected to the overheating generator, and a water outlet end of the water-steam **separator** is further connected to a water supplying end of the steam generator. The steam generator is in a cylindrical shape, a coil is wound on the outer side of a cylinder wall, the overheating generator is in a cylindrical shape, a coil is wound on the outer side of a cylinder wall, the coils are respectively connected to corresponding high-frequency generators which are connected to a programmable logic controller (PLC), an **air** exhaust fan is installed at a steam outlet end of the overheating generator, the **air** exhaust fan is connected to a drying chamber through a plurality of scattered pipelines, and the drying chamber is provided with a conveying **belt** device. Intelligent adjusting and control can be achieved through the PLC, **temperature** and **humidity** are conveniently and accurately controlled, the requirement of different wood for drying **temperature** can be met, and quality of products is ensured.

13/23 © EPODOC / EPO

PN - [CN202415333U](#) U 20120905

PR - CN20112574765U 20111231

AP - CN20112574765U 20111231

DT - I

CCA - [Y02W10/40](#)

PA - BEIJING CLP JIAMEI ENVIRONMENTAL PROT TECHNOLOGY CO LTD

TI - Sludge heat drying and coal blending and burning treatment system

AB - The utility model discloses a sludge heat drying and coal blending and burning treatment system which comprises a sludge storage pool, a sludge screw conveyor, a screw pump, a drier, a cyclone **separator**, a dry sludge screw conveyor and a **belt** conveyor, wherein the sludge storage pool is used for temporarily storing sludge; a movable cover plate is arranged at the top of the sludge storage pool, and a hydraulic driving carriage is arranged at the bottom of the sludge storage pool; the sludge screw conveyor is arranged at an outlet of the sludge storage pool; sludge is pushed to the sludge screw conveyor under the action of the hydraulic driving carriage; the screw pump is connected between a first screw conveyor and the drier; the sludge is conveyed into the drier, and high- **temperature** flue **gas** introduced from an economizer of a boiler in a power station is introduced into the drier; the cyclone **separator** is arranged at the outlet of the drier to separate the dried sludge from the flue **gas** containing **moisture**; the dry sludge screw conveyor is connected between the cyclone **separator** and the **belt** conveyor to convey the dried sludge to a coal conveying **belt**; and after being mixed with fired coals in the power station, the dried sludge is conveyed into the boiler in the power station for burning.

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PN - [RU2409972](#) C1 20110127

PR - RU20090124349 20090625

AP - RU20090124349 20090625

DT - I

PA - FEDERAL NOE G OBRAZOVATEL NOE UCHREZHDENIE VYSSHEGO PROFESSIONAL NOGO OBRAZOVANIJA PERM G SEL SKOKHO [RU]

TI - METHOD FOR PRODUCTION OF FERMENTED ALBUMEN FODDER FROM POULTRY SLAUGHTERING WASTES

AB - FIELD: agriculture. ^ SUBSTANCE: poultry slaughtering wastes are preliminarily dehydrated till their **moisture** content is 60-65%, accumulated in deodorising reservoirs till the mass amount is sufficient for a single cauldron loading with enzymes added into the reservoir. Then the mass is delivered into the cauldron and hydrolysed at a 45-55C **temperature** during 40-50 min. Then one performs sterilisation at a 135-140C **temperature** during 0.5 h and vacuum drying combined with condensation of fluid vapours at a 80-100C **temperature** during 4-5 h with two-stage steam supply regulation. The finished product is chilled with cold **air** on a **belt** chiller till the **temperature** is below 30C and subjected to separation on a vibration sieve **separator**. ^ EFFECT: simplification of the process of poultry slaughtering wastes integrated processing with minimum energy intensity and improved quality of the finished product. ^ 4 cl, 1 dwg, 2 tbl

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PN - [RU2340846](#) C1 20081210

PR - RU20070124755 20070703

AP - RU20070124755 20070703

DT - I

PA - KOCHETOV OLEG SAVEL EVICH [RU]; GOLUBEVA MARIJA VLADIMIROVNA [RU]

TI - PLANT FOR CATALYST DRYING AND TEMPERING

AB - FIELD: heating, drying. ^ SUBSTANCE: invention relates to solutions drying technologies which provide for production of granular product with hygroscopic properties, and may be used in different areas of chemical technologies or similar engineering branches where high requirements to the magnitude of final product **humidity** are applied. Invention deals with the plant for catalyst drying and tempering containing piston pump for source material supply, filter for admixtures separation, and distributing dryer intended for catalyst drying and granulating from solution, multicyclone collector for finished product entrapping and delivering to screw or **belt** conveyor. The specific feature of the plant is the recycle flowing to Venturi scrubber by means of smoke

exhauster. Recycle is collected from silo part of scrubber to tank as sludge and from dip pan. Solution is supplied to scrubber by pump. Drying agent is also supplied by fan to tempering machine through heat generator. **Separator** supplies dried-out product to pneumo transport cyclone. Tempering machine is designed for creating two-stage **temperature** tempering modes and ensuring preset time of catalyst residence in each stage: stage 1 ensures supply of drying agent to upper part of machine, while **gas**-steam mixture contacting with catalyst particles is supplied to the lower part of machine. Finished product is supplied to product cooler. Scrubber with dip pan is intended for final dust entrapping and drying agent cleaning before it is released into atmosphere. Plant is provided with used drying agent cleaning system, finished product cooling unit, and metered feed unit, product transport unit inside the plant, finished product tank and other units needed for building up the required infrastructure of the complete plant. Source solution supply system is implemented as acoustic injectors represented in the shape of housing with US vibration generator being in the form of nozzle and annular volume vibrator. Vibrator housing is represented in the form of vertical cylindrical bushing with pipe for drying agent supply located in its upper part. Pipe for damp source solution supply is perpendicular to the above pipe axis. Inside the housing and in axial alignment to housing, bushing with top and bottom flanges is rigidly fixed. Bottom flange is rigidly fixed in groove made in housing, and annular volume vibrator is displaced in axial alignment inside bushing. Volume vibrator is in the shape of cup with tapered surface, which is molded on rod of vibrator d diameter. Retaining disks in the form of elastic blades interacting with internal surface of bushing are implemented in vibrator tail-end part. At least, one nozzle is located in bottom flange at 20-40 angle to vibrator axis. Nozzle axis is continued on circle being in the middle part of tapered surface. Cone-shaped and cylindrical openings are made on the inner surface of bushing in axial alignment. ^ EFFECT: improvement of drying and tempering efficiency. ^ 2 cl, 2 dwg

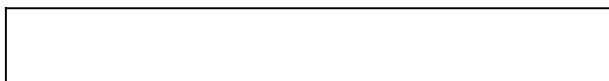
16/23 © EPODOC / EPO

- PN - [WO2007058567](#) A1 20070524
- PR - RU20050135826 20051118
- AP - WO2006RU00593 20061113
- DT - **
- CT - [RU2107347](#) C1 [A]; [JP2003019434](#) A [A];
[JP2002263475](#) A [A]
- CCI - [G21F9/32](#)
- PA - JOINT STOCK COMPANY ALLIANCE G [RU]; STATE UNITARY ENTPR MOSCOW SCI [RU]; ARUSTAMOV ARTHUR EDUARDOVICH [RU]; VASENDIN DEMETRIUS RUDOLFOVICH [RU]; GORBUNOV VALERIY ALEKSEEVICH [RU]; DMITRIEV SERGEY ALEKSANDROVICH [RU]; LIFANOV FYODOR ANATOLEVICH [RU]; KOBELEV ALEXANDER PAVLOVICH [RU]; POLKANOV MIKHAIL ANATOLEVICH [RU]
- TI - RADIATIVE WASTE REPROCESSING METHOD AND DEVICE
- AB - The invention relates to radioactive waste reprocessing. The inventive reprocessing method consists in supplying waste-containing packages to a plasma furnace, in pyrolysing said wastes in such a way that a coke residue is oxidised and in removing a melted slag and pyrolysis **gas** from the furnace, in after-burning the pyrolysis **gas** at a **temperature** of 1220-1350 DEG C by supplying **air** thereto at two levels, i.e. at the level of the pyrolysis **gas** supply to a pre-combustion chamber and at the level of the top part of the combustion chamber main volume, in cooling exhaust gases to a **temperature** of 200-250 DEG C, in consequently mechanically and absorbingly removing a condensed **moisture** and aerosols therefrom and in finally purifying said exhaust gases. The inventive plant comprises a waste loading unit provided with the loading hopper communicating by means of the sealed conveyor **belt** a with a warehouse which is used for storing waste-containing packages and provided with waste presence sensors. Said loading hopper is provided with sealed shutters, a thermal screen and a loading sleeve. Said plant comprises a plasma shaft furnace provided with a melter unit and a slag draining unit connected to a slag melt receiving box, a device for supplying **air** to the furnace, a **gas** duct, a pyrolysis **gas** combustion chamber, a vapour heat exchanger and a **gas**-cleaning system. The furnace is provided in the shaft top part with centrifugal jet nozzles for emergency watering. The combustion chamber comprises the pre-combustion chamber and is provided with a plasmatron, which is arranged on the pre-

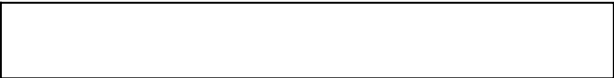
combustion chamber lid, and with two devices for supplying **air** thereto. The **gas**-cleaning system is also provided with a **gas** filter-**separator** and a fine filter.

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- PN - [GB815441](#) A 19590624
- PR - USX815441 19550916
- AP - GB19560027802 19560911
- DT - *
- CCI - [B30B5/065](#)
- PA - HERCULOK CORP
- TI - Improvements in or relating to continuous hot press
- AB - 815,441. Pressing fibrous material into boards. HERCULOK CORPORATION. Sept. 11, 1956 [Sept. 16, 1955], No. 27802/56. Class 87(2). [Also in Group XXX) A continuous pressing machine comprises a pair of opposed endless movable belts which are backed on their non-adjacent sides by platens to form an elongated pressing chamber and means for introducing compressed **gas** through a plurality of openings in the surfaces of the platens adjacent the belts to maintain the platens separated from the belts by a lubricating gaseous layer. Raw material, e.g. wood waste, straw &c., is fed from hoppers 10 to pulpers 12, the resulting fibrous material is injected into a rotary drier 16, where the **moisture** content is lowered to e.g. 10-12 per cent, the dried material passes through a mixer 24 and is sprayed with a resin binder in a chamber 26, thence the material is carried by a gaseous stream to a cyclone **separator** 28 and falls into a felting chamber 30. Liquid urea or phenol-formaldehyde resins are suitable. The lower **belt** 34 of two opposed moving steel belts 34, 40 extends below the felting chamber and the fibrous material is deposited on it as a loose mat. At the entrance to the gap between the belts 34, 40 the material is compacted by the passage of the belts between rollers 42, adjusted in their spacing to exert an increasing, relatively high pressure (e.g. 700 lb. per sq. in.). The steel belts are drawn between adjustably mounted platens 52 by rollers 44, which are adjustable. The platens are hollow, their chambers 60 being



filled with steam supplied through manifolds 54. Across each platen, dividing the chamber 60, is another chamber 58 and these chambers are supplied with compressed **air** through manifolds 56 which are coaxially mounted in the steam manifolds 54. The compressed **air**, thus preheated, emerges through small holes into the spaces between the belts and the platens and forms gaseous layers which reduce friction. To reduce chilling by sudden expansion of the emerging **air** the holes are counterbored at their exits, thus also distributing the **air** pressure. The space 68 between each platen and **belt** is narrow (about 0-001 inch) to minimise drop of pressure at the edges. In view of this narrowness it is preferable to lubricate the belts with e.g. a metal stearate powder. Towards the exit of the press cooling water is substituted for steam in the manifolds 54, similar to but separated from the steam manifolds, to cool the pressed fibres and prevent contained steam pressure from destroying the product. Brushes 48 clean the belts. The pressure between the belts is about 75 lb. per sq. inch, at a **temperature** of about 345 F. For pressing plies of wood veneer 122, 124, 126, Fig. 8, a modified arrangement is used in which the upper platen comprises upper and lower sections 88, 90 one slidable in the other. A chamber 100 is formed between the two sections to which heated compressed **air** is supplied, emerging through counterbored openings 96 to form the gaseous layer. The lower platen has similar openings 96. The joints between the relatively movable platen sections are sealed by gaskets 98 and 116.



- TI - Tobacco sheet material, method of and apparatus for making the same
- AB - 727,903. Tobacco substitutes; treating tobacco. AMERICAN MACHINE & FOUNDRY CO. April 2, 1952 [April 10, 1951], No. 8371/52. Class 130. Sheets or filaments for use in place of natural tobacco in cigars, cigarettes etc. are formed by depositing in successive layers, on a filmforming surface, tobacco particles, a filmforming material and further tobacco particles. Suitable film-forming materials are watersoluble salts of specified water-insoluble cellulose derivatives, or aqueous dispersions of these derivatives, prepared as described in Specification 698,948, [Group IV (a)], with added glyoxal and/or glycerine if desired. An endless metal conveyer **belt 12** is uniformly sprayed with a wetting solution 15, comprising water with, if desired, small quantities of detergent and/or film-forming material, and supplied from a mixer 10 through a metering pump or valvecontrolled flowmeter 13 to a compressed-air sprayer 20 which may have multiple stationary heads or a single head reciprocable on a crossthreaded drive shaft 24. Excess spray may be caught in a hood' connected to an **air/droplet separator**. Tobacco particles screw-fed from a hopper 48 having an electric vibrator 46 are forced by **air** from a blower 41 through a tube 40 to be uniformly deposited in a relatively thick layer on the wetted **belt 12** through a nozzle 38 which may extend across the **belt**, be one of a plurality of nozzles or be reciprocable on a cross-threaded drive-shaft 53. Film-forming material 51 is forced by a metering pump, such as that described in U.S.A. Specification 1,848,024, through a pipe 64 to a compressedair sprayer 70 reciprocable on a cross-threaded shaft 69 to deposit a thin layer of material over the tobacco on the **belt 12**. A hood may be provided to recover excess spray. Further tobacco particles, gravity-fed into the inlet of an **air** blower 88 from a hopper 82 vibrated by a

motor 84, are forced together with the blown **air** through a nozzle 74 and deposited in a relatively thick layer on the film-forming material to produce the final coated web W. The nozzle 74 is reciprocable by a cross-threaded drive shaft 77. The **belt** 12 then passes blades (not shown) of rubber, thin steel or other flexible material bearing on its upper surface at either side and which scrape off and remove the web edges to bring the web to a desired width determined by the adjustable setting of the blades laterally of the **belt**. The web W is then dried by passing through a heater 90 which may be divided into zones, as I, II, III, having appropriate individual conditions of **temperature**, **air** velocity and **humidity**, and also, if desired, individual **temperature** and/or **air** velocity control on either side of the **belt**, such that **belt** expansion is completed before web solidification occurs, and web cracking is minimized. The zones I, II, III, may be controlled by thermally actuated valves 91 each responsive to the exhaust **air temperature** of the respective zone and, in the case of a **gas** fired dryer, controlling the quantity of **gas** burnt therein. Alternative or additional **belt** expansion prior to web solidification may be effected by a heater 110. On leaving the heater 90 the web W passes beneath a brush 122 rapidly rotated to remove loose tobacco which is collected by one suction hood 126 of a dustair **separator** (not shown), such as a bag filter or a cyclone, which also receives from suction hoods 45, 76 excess tobacco from the nozzles 38, 74 and delivers separated tobacco to the hopper 48. After brushing, the web W may be moistened and/or dyed by spray sets 142, 144 supplied by gravity or pump from water and dye reservoirs 163, 165 through metering devices 166, 167 and a mixing and atomizing valve 160 supplied with compressed **air** through a conduit 168. The web W is then stripped from the **belt** 12 by a scraper 180 and passes over a nozzle 188 which, to dye the

undersurface of the web, may optionally be reciprocated from a cross-threaded shaft 186 whilst being supplied, by the opening of a control valve (not shown), with dye, as from the reservoir 163 through a metering device, and with compressed **air** from a conduit 191. The devices 188 and 142, 144 may both be hooded for excess dye spray recovery. Additionally or alternatively to being dyed, the web undersurface may be moistened. After passing on a canvas or like **belt** 192 through a dryer 202 which determines its final **moisture** content, the web W is cleaned of any remaining loose tobacco by rotary brushes 210, 220 provided with further suction hoods 212, 224 of the dust-**air separator** previously mentioned, and may then be rolled into reels but, as shown, is cut longitudinally into strips by a number, e.g. five, of equally spaced rotary knives 230 co-acting with grooves in a rotary metal roller 238, successive lengths being then cut from the strips by coaction of a rotary knife 242 and a rotary ledger blade 252 and falling between a plate 264 and a suction hood 262 of the dust-**air separator** which removes loose tobacco caused by cutting. Between the scraper 180 and the nozzle 188, the web may pass through a dyer and be brushed on its undersurface to ensure even dyeing thereof. In a modification, the initial layer of tobacco. deposited is dried before application of the film-forming material. A longer **belt** 12 may be used and the initial tobacco deposition, and, if desired, also the application of wetting solution, made on the upper run of the **belt**. Specification 727,886 also is referred to.

19/23	© EPODOC / EPO
PN	- GB823568 A 19591111
PR	- GB19570007229 19570305
AP	- GB19570007229 19570305
DT	- *
CCI	- F23G5/002
PA	- PABLO VAGO; BELA VASS
TI	- Improvements in or relating to



AB

the combustion of refuse

- 823,568. Treating refuse. VAGO, P., and VASS, B. March 5, 1957, No. 7229/57. Class 111. [Also in Groups II, XII and XXX] A process for treating refuse, to render it suitable for use as fuel in a boiler furnace, comprises eliminating pieces of iron from the refuse by magnetic attraction and then effecting a pneumatic separation of combustible from incombustible parts of the refuse simultaneously with a vaporisation of the **moisture** content of the refuse by means of combustion gases from the boiler furnace, the **temperature** of the combustion gases applied to the refuse being regulated in such a manner that the heat transmitted to the refuse substantially equals the sum of the heat of vaporisation of the **moisture** and of the heat required for heating the refuse to about 100 C., the mixture of combustion gases and vaporised **moisture** being then allowed to escape into the atmosphere. The desired amount of heat is transmitted to the refuse if the **gas**-vapour mixture leaving the plant has a **temperature** of about 110 C. In the drawings, refuse carried on conveyer **belt** 9, Fig. 7, passes through magnetic device 19 for removal of iron objects and is then directed by scraper 56 through crusher 20. The crushed refuse falls on to conveyer **belt** 21 which delivers it on to endless conveying and drying grate 25, Fig. 6, immediately below a similar grate 26. Within grates 25, 26 are air distributing boxes 27, 28. Box 27 is connected by pipe 29 to the blowing side of blower 30, which draws combustion gases from the combustion zone via pipe 48 and heat exchange 47. Box 28 is connected by pipe 32 to the suction side of blower 31, pipe 32 being provided with a dust **separator** 42. The heavy incombustible portions of the refuse fall from grate 25 into funnel 43 and are classified according to their specific gravities in hydraulic brake sieve 44. Under the influence of the horizontal stream of gases from

blower 31, the lighter combustible portions of the refuse are directed into funnel 43<SP>1</SP> and are thereupon charged to the reciprocating step grate 45 in the combustion zone. Hermetically sealed receptacle 51, within classification chamber 36, is connected by way of pipe 52 to a cylinder containing a piston 54, the cylinder being closed by bellows 53. Receptacle 51, pipe 52 and the cylinder are waterfilled, and piston 54 engages air inlet valve 55. By means of this arrangement, the **temperature** of the combustion gases utilized for drying the refuse is controlled. The combustion gases, having effected the drying of the incoming refuse, are sucked through conduit 38, Fig. 7, by means of hydraulic exhauster 39 and discharged into the smoke exhaust channel 40, which is connected with a chimney for venting the gases to the atmosphere. Cold water mixed with a soluble disinfectant such as formalin may be introduced into exhauster 39 to disinfect the gases.

20/23 © EPODOC / EPO

PN	- GB1164744 A 19690917
PR	- GB19670001717 19670112
AP	- GB19670001717 19670112
DT	- *; Rep
CCI	- C22B1/2406 ; C22B1/2413 ; C22B7/02
CCA	- Y02P10/234
PA	- STIRLING SINTERING COMPANY [US]
TI	- Process and Apparatus for the Reclamation of Material
AB	- 1,164,744. Granulating apparatus. STIRLING SINTERING CO. 12 Jan., 1967, No. 1717/67. Heading B5A. Finely divided particulate material is reclaimed by moistening the material and then pelletizing it and heating the material during the pelletizing step, drying the pellets to remove all moisture and igniting and heating the dried pellets at a temperature above 1850 F., recycling a portion of the heated material directly to the pelletizing step while it is



hot, whereby it preheats the new feed material during the pelletizing step. Fine particles such as fly ash are delivered by a conveyer 4 to a treating means 6, e.g. a magnetic **separator**, whereby two separate fractions are fed to separate bins 8a, 8b from either of which the ash is conveyed by a **belt** 10, a bin 12 of a metering type feeder, a **belt** 15 and shoot 17 to a drum 19 where it is wetted by a controlled amount of water. The wet material is supplied by a conveyer 16 to a pelletizer 18 where it is preheated and agglomerated, and then supplied by **belt** 20 to a **belt** 22, whereby the material passes under a hood 30 and is preheated and fed uniformly, by longitudinal reciprocation of the **belt** 22 over the width of a sinter **belt** 42. The pellets are received on a layer of particles providing a hearth on the sinter **belt**, which are also fed to it by the **belt** 22 which has its upper surface longitudinally partitioned for the supply of the two separate particle streams. The pellets are fed below a furnace 48 and heated to between 1850 and 2800 F.; **air** is drawn downwardly through the layers by boxes and ducts 50, 52, 54 and dust collector 56 by a fan 58. The resultant sintered material is crushed by a roll crusher 64 and screened at 66; the fines are recycled to the pelletizer, the intermediates are delivered by a **belt** 74 to the **belt** 22 to form the hearth, and the largest particles, comprising the desired product, are supplied by a conveyer 76 to a discharge conveyer 78. The product is cooled on the **belt** 76 by **air** fed through it by a wind box 80, and a hood 84 over the conveyer and screen receives the heated **air** and supplies it to the furnace 48; a portion of the **air** may be fed to the hood 30 and some of it to an enclosure 95 above the sinter **belt**. Water from the dust collector which contains the collected particles is fed to the wetting drum 19.

PN	- EA199900763 A1 20000228	
PNFP	- EA001346 B1 20010226	
PR	- US19970805157 19970224; WO1998US03420 19980223	
AP	- EA19990000763 19980223	
DT	- I	
CCI	- B03B9/04 ; B03C7/006	
PA	- (B1) SEPARATION TECHNOLOGIES INC [US]	
TI	- (B1) METHOD AND APPARATUS FOR SEPARATION OF CARBON FROM FLYASH	
AB	- (B1) 1. A method of separating carbon particles from flyash, comprising introducing the flyash into a triboelectric separator so as to triboelectrically charge the carbon particles and the flyash and so as to electrically separate the charged carbon from the charged flyash, wherein prior to introducing the flyash into the triboelectric separator the optimum relative humidity of the flyash range from 5% to 30%. 2. The method of claim 1, wherein the relative humidity of the flyash is reduced. 3. The method of claim 1, wherein the relative humidity of the flyash is increased. 4. The method of claim 3, wherein the relative humidity of the flyash is increased by adding water to air used to transport the flyash from a remote collection bin to the triboelectric separator . 5. The method of claim 4, wherein the water added is in a liquid state. 6. The method of claim 4, wherein the water added is in a vapor state. 7. The method of claim 3, wherein the relative humidity is increased by adding water to the flyash at a feed of the triboelectric separator . 8. The method of claim 7, wherein the water is added to the flyash prior to passage of the flyash through a fluidized region of the feed of the triboelectric separator . 9. The method of claim 2, wherein the relative humidity of the flyash feed is decreased by the steps of: combining the flyash with a reduced relative humidity air , in an ash- air transport system for	

transporting the ash to the **separator**, wherein the ash-air transport system is above an ambient **temperature**; maintaining the ash- **air** transport system above the ambient **temperature**; disengaging the **air** from the ash while the ash-air transport system is above the ambient **temperature**; and collecting the ash for feeding into the triboelectric **separator**.

10. The method of claim 9, wherein the relative **humidity** of the **air** is reduced by one of heating the **air** and dehumidifying the **air** to provide the reduced relative **humidity air**.

11. The method of claim 2, wherein the relative **humidity** of the flyash is decreased by heating **air** that is used to fluidize the flyash. 12. An apparatus for separating carbon particles from flyash, comprising a triboelectric **separator** into which the flyash is introduced so as to triboelectrically charge the carbon particles and the flyash and to electrically separate the charged carbon from the charged flyash, wherein the apparatus comprises a flyash treating means in which the flyash is introduced to the triboelectric **separator**, so as for triboelectric separation the carbon particles from the flyash the optimum relative **humidity** of the flyash range from 5% to 30%.

13. The apparatus as claimed in claim 12, wherein the flyash treating means includes a means for adding water to transport **air**, used to transport the flyash from a remote collection bin to the

triboelectric **separator**. 14. The apparatus as claimed in claim 12, wherein the flyash treating includes a means for adding water to the flyash at a feed point of the

triboelectric **separator**. 15. The apparatus as claimed in claim 12, wherein the flyash treating means includes a means for adding water to the flyash within an ash storage vessel feeding the triboelectric **separator**. 16. The apparatus as claimed in claim

12, wherein a transport **air** is used to transport the flyash from

a remote collection bin to the triboelectric **separator** and the flyash treating means includes a heater that heats the transport **air** prior to combining the transport **air** with the flyash. 17. The apparatus as claimed in claim 16, wherein an **air** transport system, that transports the flyash from the remote collection bin to the triboelectric **separator**, is insulated so as to reduce heat loss of the transport **air** within the **air** transport system. 18. The apparatus as claimed in claim 17, comprising an ash storage vessel having an exit port that feeds the triboelectric **separator**. 19. The apparatus as claimed in claim 13, wherein the flyash treating means includes a heater that heats **air**, prior to combining the **air** with the flyash, used to fluidize the flyash. 20. The apparatus as claimed in claim 12, wherein the flyash treating means includes an apparatus for dehumidifying transport **air**, used to transport the flyash from a remote collection bin to the triboelectric **separator**, prior to combining the transport **air** with the flyash. 21. A utility power plant system, comprising a boiler for burning coal to produce heat used to generate electricity, the boiler producing non-combustible materials that exit the boiler in the form of gases; an ash disengagement system, coupled to the boiler, that receives the gases exiting the boiler and collects the ash contained within the gases; a flyash transport system, coupled to the ash disengagement system, that receives the collected ash and transports the collected ash to a remote storage vessel; and a triboelectric counter current **belt separator**, that receives the flyash from the remote storage vessel and that triboelectrically charges carbon particles within the flyash as well as the flyash so as to electrostatically separate the charged carbon particles from the charged flyash, the system comprises a flyash treating means into which the flyash is introduced from the remote storage vessel for reaching the relative optimum **humidity** within

5% to 30% for trielectrical separation of carbon particles from flyash.

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- PN - [DE4138865](#) A1 19930527
- PNFP - DE4138865 C2 19931209
- PR - DE19914138865 19911126
- AP - DE19914138865 19911126
- DT - *; Rep
- CT - || STSE (A1)
[DE3215722](#) A1 19831103 [
] (BISCHOFF THEO, et al);
[US4570045](#) A 19860211 [
] (JEPPSON MORRIS R [US]);
[US4430806](#) A 19840214 [
] (HOPKINS HARRY C [US])
- CCI - [A23L3/54](#) ; [A23B9/04](#) ; [A23B9/08](#) ;
[F26B3/343](#) ; [F26B25/22](#) ; [A23K30/12](#)
- PA - (A1 C2)
RHEIN BAYERN FAHRZEUGBAU
GMBH [DE]
- TI - (A1)
Preserving fodder and harvested materials - by microwave predrying, and controlled warm **air** drying to give required final **moisture** content
- AB - (A1)
Process comprises (a) determination of **moisture** content of the fodder; (b) a micro-wave pre-treatment; (c) **moisture** content is measured again; (d) low- **temperature air** cooling during which the majority of its **moisture** content is removed; (e) the remaining **moisture** content is measured and adjusted to a required value; and (f) the material is then cooled. Also claimed is an apparatus for carrying out the procedure, with an inlet feeder, a foreign material **separator**, and a **belt** dryer. USE/ADVANTAGE - Used in drying and preserving fodder and/or moist harvested materials. The nutrients and active components of the material are not damaged and energy usage is minimised. The time required to achieve the required **moisture** content is also minimised.io

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- PN - [CA2630219](#) A1 20070524
- PNFP - CA2630219 C 20110607
- PR - RU20050135826

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AP	- CA20062630219 20061113
DT	- I
CCI	- G21F9/32
PA	- (A1) JOINT STOCK COMPANY ALLIANCE GAMMA [RU]; STATE UNITARY ENTPR MOSCOW SCIENTIFIC [RU] - (C) JOINT STOCK COMPANY ALLIANCE GAMMA TARP VAO [RU]; STATE UNITARY ENTPR MOSCOW SCIENT & IND ASS RADON RUSSIA MOS NPO RADON [RU]
TI	- (A1 C) RADIOACTIVE WASTE REPROCESSING METHOD AND DEVICE
AB	- (A1) The invention relates to radioactive waste reprocessing. The inventive reprocessing method consists in supplying waste-containing packages to a plasma furnace, in pyrolysing said wastes in such a way that a coke residue is oxidised and in removing a melted slag and pyrolysis gas from the furnace, i n after-burning the pyrolysis gas at a temperature of 1220-1350 ~C by supplyin g air thereto at two levels, i.e. at the level of the pyrolysis gas supply to a pre- combustion chamber and at the level of the top part of the combustion chamber main volume, in cooling exhaust gases to a temperature of 200-250 ~C , in consequently mechanically and absorbingly removing a condensed moisture a nd aerosols therefrom and in finally purifying said exhaust gases. The inventiv e plant comprises a waste loading unit provided with the loading hopper communicating by means of the sealed conveyor belt a with a warehouse which is used for storing waste-containing packages and provided with waste presence sensors. Said loading hopper is provided with sealed shutters, a thermal screen and a loading sleeve. Said plant comprises a plasma shaft furnace provided with a melter unit and a slag draining unit connected to a slag mel t receiving box, a device for

supplying **air** to the furnace, a **gas** duct, a pyrolysis **gas** combustion chamber, a vapour heat exchanger and a **gas**-cleaning system. The furnace is provided in the shaft top part with centrifugal jet nozzles for emergency watering. The combustion chamber comprises the pre-combustion chamber and is provided with a plasmatron, which is arranged on the pre-combustion chamber lid, and with two devices for supplying **air** thereto. The **gas**-cleaning system is also provided with a **gas** filter-separator and a fine filter.

- (C)

The invention relates to radioactive waste reprocessing. The inventive reprocessing method consists in supplying waste-containing packages to a plasma furnace, in pyrolysing said wastes in such a way that a coke residue is oxidised and in removing a melted slag and pyrolysis **gas** from the furnace, in afterburning the pyrolysis **gas** at a **temperature** of 1220--1350 DEG C by supplying **air** thereto at two levels, i.e. at the level of the pyrolysis **gas** supply to a pre-combustion chamber and at the level of the top part of the combustion chamber main volume, in cooling exhaust gases to a **temperature** of 200-250 DEG C, in consequently mechanically and absorbingly removing a condensed **moisture** and aerosols therefrom and in finally purifying said exhaust gases. The inventive plant comprises a waste loading unit provided with the loading hopper communicating by means of the sealed conveyor **belt** with a warehouse which is used for storing waste-containing packages and provided with waste presence sensors. The loading hopper is provided with sealed shutters, a thermal screen and a loading sleeve. The plant comprises a plasma shaft furnace provided with a melter unit and a slag draining unit connected to a slag melt receiving box, a device for supplying **air** to the furnace, a **gas** duct, a pyrolysis **gas** combustion chamber, a vapour heat

exchanger and a **gas**-cleaning system. The furnace is provided in the shaft top part with centrifugal jet nozzles for emergency watering. The combustion chamber comprises the pre-combustion chamber and is provided with a plasmatron, which is arranged on the pre-combustion chamber lid, and with two devices for supplying **air** thereto. The **gas**-cleaning system is also provided with a **gas** filter-**separator** and a fine filter.

[SS 19]