

Search query (1): [SP]: A solid fuel boiler with one or more fuel chutes configured to pre-dry wet solid fuel prior to loading into a combustion chamber of the boiler, enabling higher thermal efficiencies and burning less fuel to produce the same steam quantity.
Results: 19

Search history

Search [SP]: A solid fuel boiler with one or more fuel chutes configured to pre-dry wet solid fuel prior to loading into a combustion chamber of the boiler, enabling higher thermal efficiencies and burning less fuel to produce the same steam quantity. (Results 19)

1) Family number: 21951253 (US2799254A)

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Title: SHAFT FURNACES FOR STEAM-GENERATORS

Abstract: Source: US2799254A (Claim 1) 1. In a shaft furnace for firing substantially solid fuel and having two opposite spaced walls; first conduit means spaced from one of said walls and defining between said so first conduit means and said one wall an inlet chamber for fresh air supply,, second conduit means spaced from the other of said walls -and defining therebetween a combustion gas egress chamber, a fire chamber, said first and second conduit means being spaced from each other and -35 defining therebetween a substantially upright fuel combustion shaft, said fire chamber being positioned above and being in communication with said combustion shaft, said first and second conduit means being constructed for the passage of cooling fluid, means directing combustion gas from said combustion shaft to said combustion gas egress chamber, and fuel funnel means extending from outside said furnace toward said fuel combustion shaft for directing fuel to the latter, said fuel funnel means extending sidewardly through said one wall and above said inlet chamber for fresh air supply and including a downwardly inclined fore-grate portion which extends from said one wall downwardly toward said combustion shaft, whereby fuel supplied through said funnel means over said foregrate portion is at least partially exposed to influences from said fire chamber above said fuel combustion shaft and prior to introduction of said fuel into said-combustion shaft, thereby preventing adhesion of fuel particles in said combustion shaft due to baking and- caking.

Classifications:

International (IPC 8-9): F22B31/00 F23H3/02 F23H7/00
F23L9/00 (Advanced/Invention);
F22B31/00 F23H3/00 F23H7/00 F23L9/00 (Core/Invention)

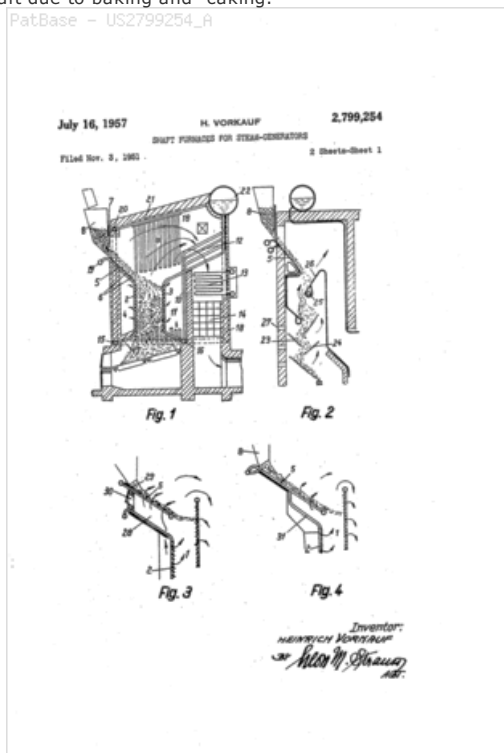
International (IPC 1-7): F23B1/36

CPC: F22B31/00 F23B50/04 F23B90/00 F23B90/04 F23B2700/011
F23B2700/012 F23H3/02 F23H7/00 F23L9/00

European: F22B31/00 F23B1/00 F23B1/02 F23B50/04 F23B90/00
F23B90/04 F23H3/02 F23H7/00 F23L9/00 F23B700/011 F23B700/012

US: 122/237

PatBase - US2799254_A



Family:

Publication number	Publication date	Application number	Application date
US2799254 A	19570716	US19510254719	19511103

Priority:

US19510254719 19511103

Probable Assignee:

HEINRICH VORKAUF

Assignee(s): (std):

HEINRICH VORKAUF

Inventor(s): (std):

HEINRICH VORKAUF

Inventor(s):

VORKAUF HEINRICH

2) Family number: 721050 (GB1213624A)

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Title: IMPROVEMENTS IN OR RELATING TO THE BURNING OF SOLID FUELS, REFUSE OR SLUDGE

Abstract: Source: GB1213624A 1,213,624. Incineraters. INTERNATIONAL COMBUSTION (HOLDINGS) Ltd. 29 Dec., 1967 [18 Nov., 1966], No. 51666/66. Heading F4B. In a shaft furnace, particularly for refuse or sewage sludge, the fuel burns at the bottom of a column of fuel 2, with air supplied through a vertical grate 6, the ashes are removed by a screw 7, and the gaseous combustion products are fed through a duct 12 to a separate combustion chamber 13 where they burn with additional air. A burner 14 in the secondary combustion chamber 13 and a burner 24 below the grate 6 are controlled by thermostats 15, 25 respectively to operate at start up and when the temperature of the gases drops. Air for combustion is taken from the hopper 1 and passed through an air heater 17 to the grate 6 and chamber 13. Baffles 11 between the perforated walls of the fuel column and its enclosure direct the gases through the upper part of the column to dry and preheat the fuel. In a modification air is supplied to and the primary combustion burner is located in a space formed between the two legs of a forked column of waste material. The column of fuel extends to the walls of the enclosure except where recesses are formed by perforate members, and the secondary combustion chamber is located above the column of fuel.

Classifications:

International (IPC 8-9): C02F11/12 F23G5/12 F23G5/16

F23G7/00 (Advanced/Invention);

C02F11/12 F23G5/08 F23G5/16 F23G7/00 (Core/Invention)

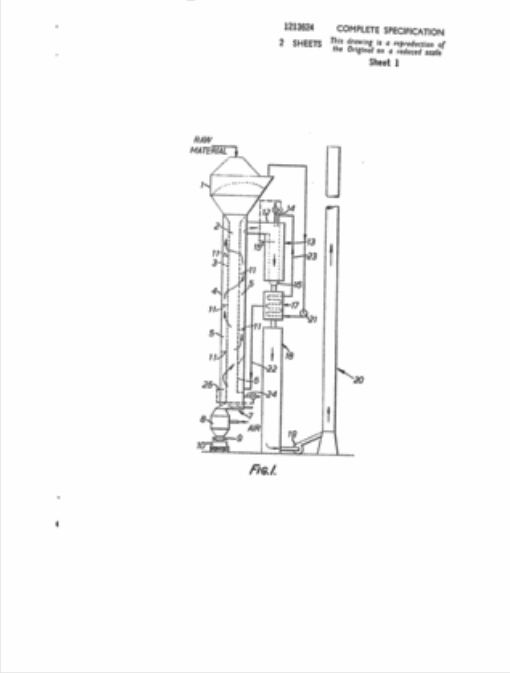
CPC: C02F11/12 F23B10/00 F23B50/10 F23B80/04 F23B2700/009

F23G5/16 F23G7/001

European: C02F11/12 F23B1/02 F23B10/00 F23B50/10 F23B80/04

F23G5/16 F23G7/00F R23B700/009

PatBase - GB1213624_A



Family:

Publication number	Publication date	Application number	Application date
GB1213624 A	19701125	GB19660051666	19661118

Priority:

GB19660051666 19661118

Probable Assignee: INT COMBUSTION HOLDINGS LTD

Assignee(s): (std): INT COMBUSTION HOLDINGS LTD

Assignee(s): INTERNATIONAL COMBUSTION HOLDINGS LIMITED

3) Family number: 140972 (US3680503A)

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Title: INCINERATOR

Abstract: Source: US3680503A An incinerator consists of a vertical shaft, a tube for the supply of combustion air extending into the shaft from the top of the incinerator, an exhaust gas tube extending coaxially inside the combustion air supply tube. The material to be combusted is supplied from the top of the shaft. The ashes descend through the shaft onto a rotary ash platform. Combustion air is also supplied to the ashes on the ash platform, penetrating through said ashes up into the burning material in the shaft.

Classifications:

International (IPC 8-9): F23G5/26 (Advanced/Invention);

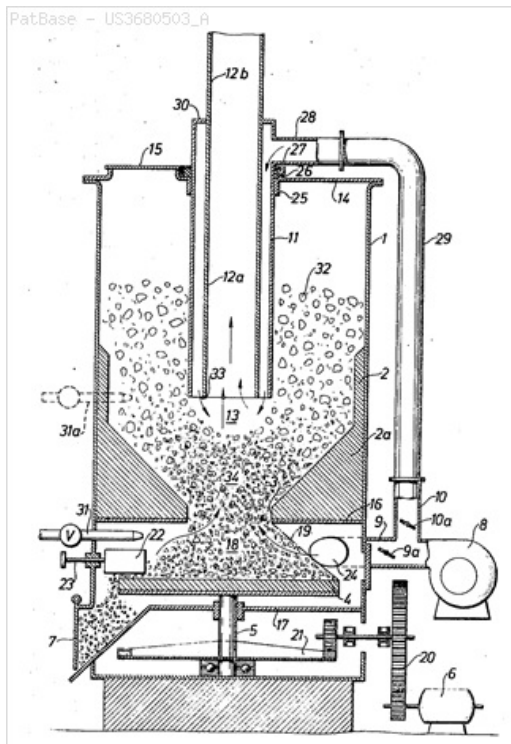
F23G5/24 (Core/Invention)

International (IPC 1-7): F23G5/00 F23J1/06

CPC: F23G5/26

European: F23G5/26

US: 110/13 110/18R 110/247 110/29

**Family:**

Publication number	Publication date	Application number	Application date
BE756970 A	19710316		00000000
BE756970 A1	19710316		19701002
DE2048017 A1	19710616	DE19702048017	19700930
FR2064905 A5	19710723	FR19700035587	19701001
GB1323570 A	19730718	GB19700046733	19701001
NL7014526 A	19710406	NL19700014526	19701002
SE344234 B	19720404	SE19690013585	19691002
US3680503 A	19720801	US19700076368	19700929

Priority:

SE19690013585 19691002

Probable Assignee: ATOMENERGI AB**Assignee(s):** (std): ATOMENERGI AB ; GUNNAR DANIELSSON ; WINQUIST KNUT LUDVIG**Assignee(s):** KNUT LUDVIG WINQUIST ; AB ATOMENERGI ; AB ATOMENERGI LILJEHOLMSVAGEN 32 STOCKHOLM SUEDE**Inventor(s):** (std): DANIELSSON G ; DANIELSSON GUNNAR ; G DANIELSSON ; K L WINQUIST ; WINQUIST K ; WINQUIST K L ; WINQUIST KNUT LUDVIG**Inventor(s):** KL WINQUIST ; KNUT LUDVIG WINQUIST ; GDANIELSSON ; GUNNAR DANIELSSON**4) Family number: 1120147 (US3777676A)**

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Title: APPARATUS AND TECHNIQUE FOR INCINERATING SOLID FUELS CONTAINING CARBONIZABLE MATERIAL

Abstract: Source: US3777676A A furnace is provided having preliminary and post incineration chambers in which the atmosphere is adapted for combustion of the fuel therein. The fuel is introduced into the post incineration chamber through the preliminary incineration chamber, while the atmosphere within the chambers is pressurized. In addition, a portion of the atmosphere is purged from the post incineration chamber, and discharged relatively outside of the furnace, while the whole of the atmosphere is purged from the preliminary incineration chamber, and discharged into the post incineration chamber.

Classifications:

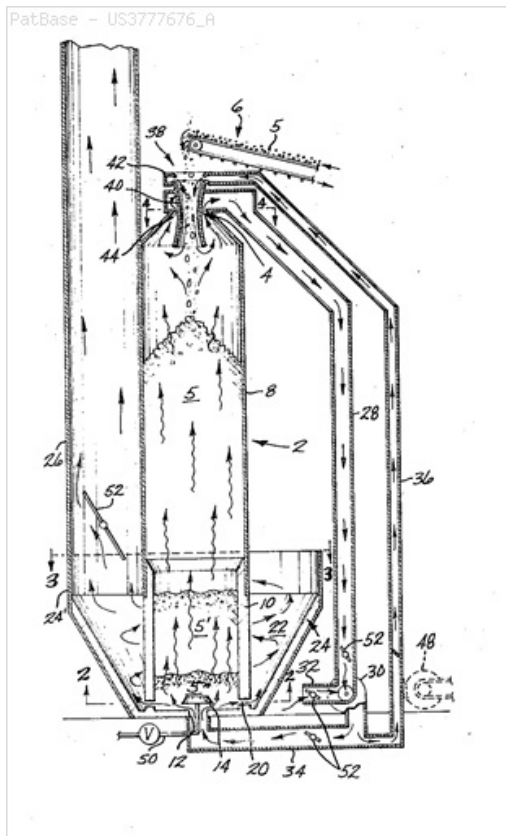
International (ipc 8-9): F23G5/14 F23G5/24 (Advanced/Invention);
F23G5/14 F23G5/24 (Core/Invention)

International (ipc 1-7): F23G5/12 F23G7/00

CPC: F23G5/14 F23G5/24

European: F23G5/14 F23G5/24

US: 110/165R 110/227 110/252 110/255 110/259 110/8C

**Family:**

Publication number	Publication date	Application number	Application date
CA963316 A1	19750225	CA19720156867	19721117
US3777676 A	19731211	US19720276820	19720731
US3862608 A	19750128	US19730418746	19731123

Priority:

US19720276820 19720731 US19730418746 19731123

Probable Assignee:

LAGEN WILLIAM S

Assignee(s): (std):

LAGEN W ; LAGEN WILLIAM S

Assignee(s):

LAGEN W US

Inventor(s): (std):

LAGEN W ; LAGEN WILLIAM S

Inventor(s):

LAGEN W US

5) Family number: 1085187 (US3824937A)

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Title: ENERGY GENERATION SYSTEM ADAPTABLE FOR BURNING DUST-TYPE FUELS

Abstract: Source: US3824937A An energy generation system, especially applicable to firetube boilers but also applicable to other combustion-type energy generators, for burning dust-type fuels such as wood sander-dust. The system comprises fuel metering apparatus, responsive to system demands, for accurately controlling the fuel-air ratio and modulating the mass flow rate of the dust-type fuel into the combustion chamber. Dust fuel, normally of variable density, is fed from a large storage hopper into a metering bin sized to hold only a small column of the fuel. A rotary agitator within the bin equalizes the density of the dust fuel and divides it into equal volumetric portions which are passed in succession over an opening in the bottom of the bin. The size of the opening is variably modulated by a reciprocating metering gate whose position is determined by a controller responsive to system energy demands. Small predetermined quantities of the fuel, dependent upon the size of the opening, drop through the opening periodically and are transformed into a continuous homogeneous stream of dust fuel by a screw conveyor located below the opening. The conveyor feeds the stream of dust into a blower which transports the dust suspended in an air stream to a dust fuel burner. In the embodiment of the invention adaptable to firetube boilers, the burner comprises a modified boiler diffuser having one or more dust inlet tubes and a continuous supporting pilot to insure continuity of burning. The boiler embodiment also includes a boiler extension section having a trap for retaining any large particles of the fuel within the boiler to insure their complete combustion.

Classifications:

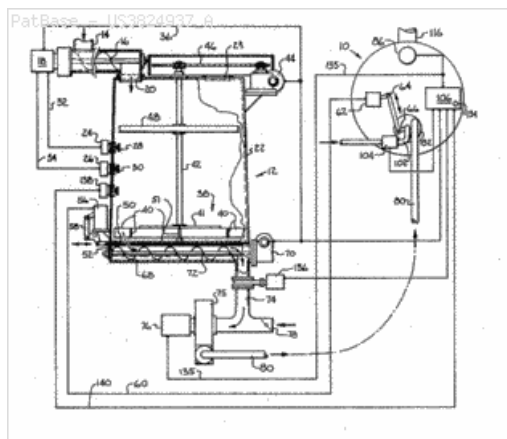
International (IPC 8-9): F22B7/12 F23K3/00 (Advanced/Invention)

International (IPC 1-7): F23K3/00

CPC: F22B7/12 F23K3/00 F23K2203/008

European: F22B7/12 F23K3/00 R23K203/00L4

US: 110/10.2 110/101C 110/102 110/103 110/104R 222/228 406/57 414/161 414/296



Family:

Publication number	Publication date	Application number	Application date
US3824937 A	19740723	US19730357503	19730504
US3902436 A	19750902	US19740479622	19740617

Priority:

US19730357503 19730504 US19740479622 19740617

Probable Assignee: TURCO ENGINEERING INC

Assignee(s): (std): TURCO ENGINEERING INC ; TUREO ENG INC

Assignee(s): TUREO ENG INC US

Inventor(s): (std): COCKREHAM H ; COCKREHAM HARRY ; TURNER L ; TURNER LESLIE C

Inventor(s): TURNER L US ; COCKREHAM H US

6) Family number: 1172016 (US3996044A)

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Title: ELECTRO-PYROLYTIC UPRIGHT SHAFT TYPE SOLID REFUSE DISPOSAL AND CONVERSION PROCESS

Abstract: Source: US3996044A Waste material is disposed of and its usable constituents recovered by feeding the waste material downwardly through a vertical shaft in which its temperature is progressively raised thereby driving off volatile matter and thermally degrading appropriate portions of the material to provide a gaseous discharge suitable for use as a fuel. Material such as metal and other non-volatilizable substances eventually reach a furnace chamber which has a temperature of at least 1600 DEG C where they are liquified and tapped from the chamber. The heavier metal component is tapped from a point lower than the point at which other liquid residues are tapped to enable the metal to be recycled.

Classifications:

International (IPC 8-9): C02F11/10 C10B19/00 C10B53/00 C10J3/00 C10J3/06 C10J3/08 F23G5/027 F23G5/10 F23G5/24 F27B1/02 F27B3/08 (Advanced/Invention);

C02F11/10 C10B19/00 C10B53/00 C10J3/00 C10J3/02 F23G5/027 F23G5/08 F23G5/24 F27B1/00 F27B3/08 (Core/Invention)

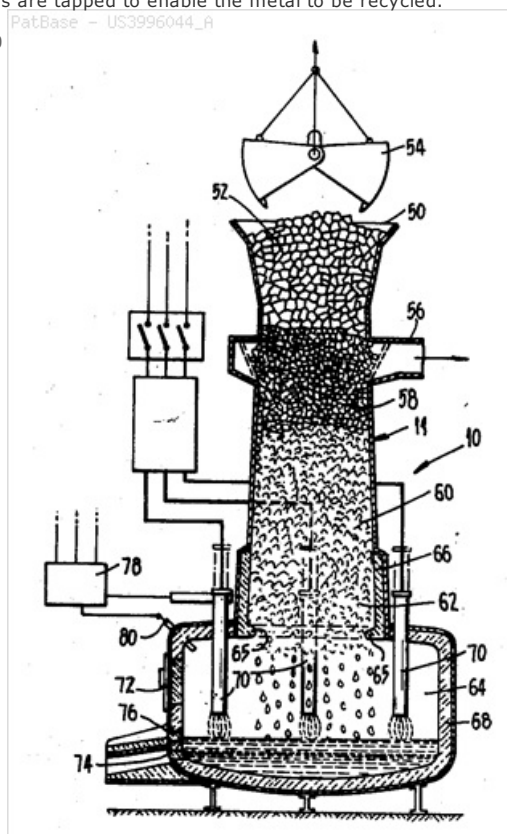
International (IPC 1-7): C10B47/00 C10J3/00 C10J3/08 C10J3/16 C22B7/00 C22D7/00 F23B1/00 F23G5/00 F23G7/00 F27B1/02

CPC: C10J3/20 C10J3/723 C10J3/74 C10J3/84 C10J2200/12 C10J2300/0946 C10J2300/0973 C10J2300/1276 C10J2300/1671 C10J2300/1675 F23G5/027 C10B19/00 C10B53/00 C10J3/06 C10J3/08 F27B1/025

European: C10B19/00 C10B53/00 C10J3/06 C10J3/08 F23G5/027 F27B1/02B

US: 48/209 75/10.43 75/10.62 75/10R 75/403 75/414

PatBase - US3996044_R



Family:

Publication number	Publication date	Application number	Application date
AU197577382 A1	19760722	AU19750077382	19740123
FR2320516 A1	19770304	FR19750001760	19750121

GB1452037 A	19761006	GB19750001503	19750114
JP50127470 A2	19751007	JP19750009665	19750122
US3996044 A	19761207	US19750540272	19750110

Priority:

AU19740006345 19740123

Probable Assignee: INTERCONT DEV CORP PTY LTD

Assignee(s): (std): INTERCONT DEV CORP PTY ; INTERCONT DEV CORP PTY LTD ; PLANT FAB CONSTRUCTION INSTALL

Assignee(s): INTERCONT DEVELOPMENT PTY LTD CORP ; PLANT FAB CONSTRUCTION INSTALLATIONS PTY LTD ; INTERCONT DEVELOPMENT CORP PTY ; INTERCONT DEVELOPMENT CORP PTY LTD

Inventor(s): (std): PETRITSCH JOSEF PETER

Inventor(s): JOSEF PETER PETRITSCH

7) Family number: 1314423 (US3976018A)

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Title: Dryer system

Abstract: Source: US3976018A A fuel dryer system for waste fuel boilers, such as for example those in the sugar cane processing industry where bagasse is used as a primary fuel, in which the dryer comprises an assembled, enclosed, vertical dryer structure of basically cylindrical shape through which hot drying gases flow with a conical materials collecting hopper and bottom discharge, having alternating conical-shaped rotating and fixed materials trays over which the materials (e.g. bagasse) to be dried move in a net direction from top to bottom (note Fig. 1). Adjustable wipers are provided with the conical materials trays, with access portholes at each tray level. In the sugar cane boiler system the stack gases from the boiler are used for the hot drying gases note (Fig. 5).

Classifications:

International (IPC 8-9): F26B17/14 (Advanced/Invention);

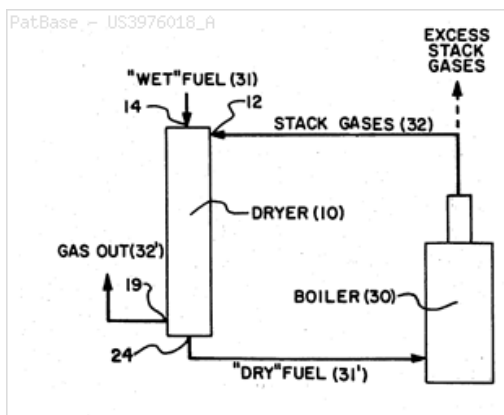
F26B17/12 (Core/Invention)

International (IPC 1-7): C10L9/00 F23G5/04 F26B17/12 F26B19/00 F26B7/00

CPC: F26B17/1433

European: F26B17/14C

US: 110/10 110/225 110/247 110/254 122/2 34/168 34/173 34/174



Family:

Publication number	Publication date	Application number	Application date
IN145628 A	19781125	IN1976CA01517	19760820
US3976018 A	19760824	US19750549945	19750214
US4114289 A	19780919	US19760700809	19760629

Priority:

US19750549945 19750214

Probable Assignee: BOULET W

Assignee(s): (std): BOULET W ; BOULET WILLIAM PAUL

Inventor(s): (std): BOULET WILLIAM PAUL ; BOULET W

8) Family number: 3877053 (US4417528A)

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Title: COAL GASIFICATION PROCESS AND APPARATUS

Abstract: Source: US4417528A Coal devolatilized and partially gasified in a travelling grate reactor is dropped into a shaft furnace to form a downwardly moving stack which moves then downwardly to and through a fixed bed gasifier, wherein it is burned to ash. A gas stream from the travelling grate reactor is down-drafted through the shaft furnace and a gas stream is up-drafted through the fixed bed gasifier, and the two streams combined are drawn through a heat exchanger and fed to a gas burner, combustion air for the gas burner being heated in the heat exchanger.

Classifications:

International (IPC 8-9): C10J3/02 C10J3/06 C10J3/58

F23K3/00 (Advanced/Invention);

C10J3/00 C10J3/02 F23K3/00 (Core/Invention)

International (IPC 1-7): F23G5/00

CPC: C10J3/002 C10J3/30 C10J3/721 C10J3/723 C10J3/84 C10J3/86

C10J2300/093 C10J2300/0956 C10J2300/0959 C10J2300/0976

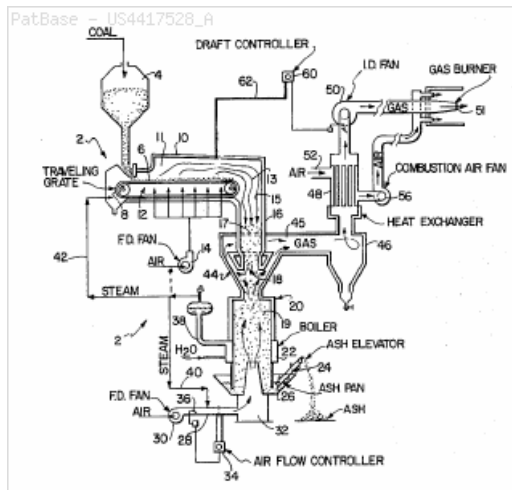
C10J2300/1869 C10J2300/1884 F23B90/06 C10J3/02 C10J3/06

C10J3/58

European: C10J3/02 C10J3/06 C10J3/58 F23B90/06

US: 110/185 110/229 116/185 201/1 201/28 201/32 201/34 202/99

48/77

**Family:**

Publication number	Publication date	Application number	Application date
US4417528 A	19831129	US19820427442	19820929

Priority:

US19820427442 19820929

Probable Assignee: PEABODY DEVELOPMENT CO**Assignee(s):** (std): MANSFIELD CARBON PRODUCTS INC ; PEABODY DEV CO ; PEABODY DEV COMPANY

Assignee(s): PEABODY DEVELOPMENT CO A CORP OF DE ; ULTRASYSTEMS ENGINEERS AND CONSTRUCTORS INC ; PEABODY DEVELOPMENT CO ; PEABODY DEVELOPMENT COMPANY ; FIRST NATIONAL BANK OF CHICAGO ADMINISTRATIVE AGEN ; FIRST NATIONAL BANK OF CHICAGO ADMINISTRATIVE AGENT AS ; FIRST NATIONAL BANK OF CHICAGO AS ADMINISTRATIVE A ; FLEET NATIONAL BANK

Inventor(s): (std): SMITH JIMMY B ; VINING PAUL H**9) Family number: 9111373 (JP63065220A)**

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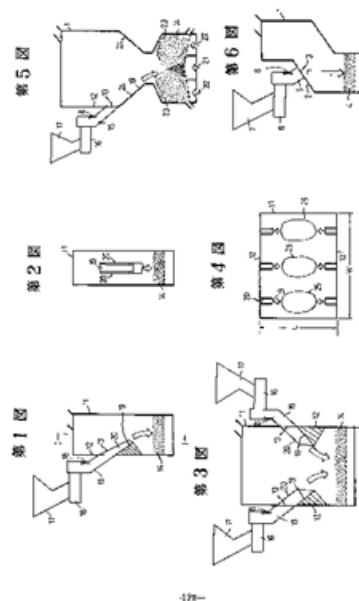
Title: THERMAL REACTION FURNACE WITH FLUIDIZED BED LAYER

Abstract: Source: JP63065220A PURPOSE: To make the maintenance and inspection works easy and at the same time contrive the reduction of the construction cost and the higher utilization of space by providing a changing opening in an intermediate position of a furnace side wall of a thermal reaction furnace with fluidized bed layer and providing the charging opening with a chute projecting into the furnace for charging thermal reaction materials to about the center of a fluidized bed layer. CONSTITUTION: A thermal reaction furnace 11 of a horizontal cross section of almost square with a fluidized bed layer 14 formed at the bottom of the furnace is provided with a charging opening 13 for charging thermal reaction materials at an intermediate position of the side wall 12. In the inside face of the side wall 12 which is provided with the charging opening 13 a chute 19 is provided which projects into the furnace inside and is made of water cooled wall and fire-proof material, etc. to form a changing section with a supply hopper 17, supply device 16 and connection chute 15. The width of the chute 19 is over 1W/2 times of the width of a thermal reaction material, its inclination angle over 45W50 Degrees , and the length of projection into the furnace of the chute 19 is about 1/4W2/5 of the width of the fluidized bed layer 14. The thermal reaction material is thrown-in about at the central portion of the fluidized bed layer from the chute 19. Because of the component in the horizontal direction of the acceleration of the material thermal reaction materials are dispersed horizontally according to their shapes and physical properties so that efficient thermal reaction is performed.

Classifications:**International (IPC 8-9):** F23G5/30 (Advanced/Invention)**International (IPC 1-7):** F23C 11/02 F23G5/30

PatBase - JP63065220_R2

INVENTOR 85120(4)

**Family:**

Publication number	Publication date	Application number	Application date
JP1864817 C3	19940826	JP19860207690	19860905
JP5073964 B4	19931015	JP19860207690	19860905
JP63065220 A2	19880323	JP19860207690	19860905

Priority:

JP19860207690 19860905

Probable Assignee: EBARA MFG

Assignee(s): (std): EBARA CORP ; EBARA MFG

Inventor(s): (std): HIGO TSUTOMU ; INUMARU NAOKI ; KOSUGI SHIGERU ; OOSHITA TAKAHIRO ; OSHITA TAKAHIRO

10) Family number: 3778649 (US4976208A)

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Title: Water cooled incinerator

Abstract: Source: US4976208A An incinerator having a horizontal burn disk which is rotatably supported within the lower portion of a firebox with a portion of the firebox containing water tubes connected to a water circulation system including a header and a steam drum. Compacted material for burning is gravity fed to the burn disk through a vertical feeding chute of sufficient height to effect the compaction. Combustion air is forced into the burning material through stationary nozzles disposed about the periphery of the disk, and a nozzle stationary nozzle extending up through the center of the disk.

Classifications:

International (IPC 8-9): F23G5/00 F23G5/26

F23G5/46 (Advanced/Invention)

International (IPC 1-7): F23B7/00 F23G5/00 F23G5/26 F23G5/44

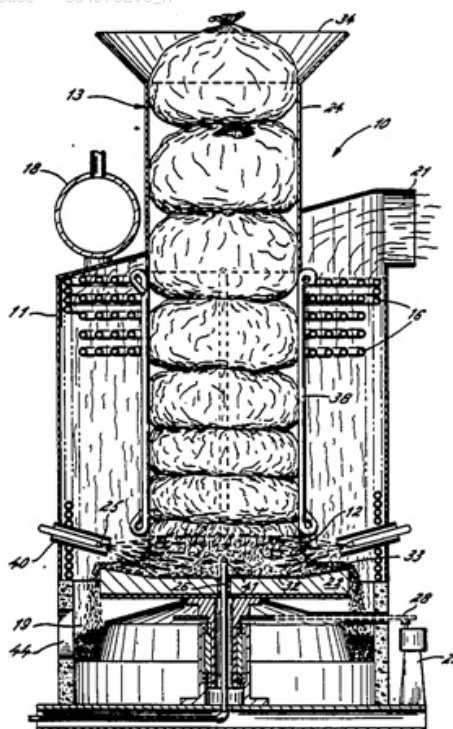
F27B1/20 F27B1/21 F27B1/22 F27B1/24

CPC: F23G5/26 F23G5/46 F23G2209/20 F23G2900/54401

European: F23G5/26 F23G5/46 R23G209/20 R23G900/54401

US: 110/234 110/247 110/256 122/2

PatBase - US4976208_A



Family:

Publication number	Publication date	Application number	Application date
CA2030398 AA	19910602	CA19902030398	19901120
DE4037857 A1	19910606	DE19904037857	19901128
US4976208 A	19901211	US19890444661	19891201

Priority:

CA19902030398 19901120 US19890444661 19891201

Probable Assignee: OCONNOR CHADWELL

Assignee(s): (std): OCONNOR CHADWELL

Assignee(s): O CONNOR CHADWELL ; O CONNOR CHADWELL NEWPORT BEACH CALIF ; O CONNOR CHADWELL NEWPORT BEACH CALIF US

Inventor(s): (std): O CONNOR CHADWELL

Inventor(s): O CONNOR CHADWELL NEWPORT BEACH CALIF ; O CONNOR CHADWELL NEWPORT BEACH CALIF US

Agent(s): MACRAE AND CO

11) Family number: 10404329 (US5605104A)

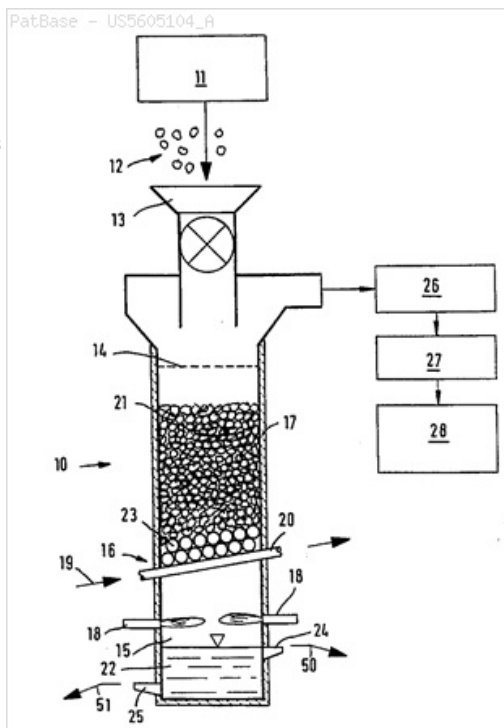
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Title: METHOD AND DEVICE FOR MELTING DOWN SOLID COMBUSTION RESIDUES

Abstract: Source: US5605104A The invention relates to a method and a device for melting down solid combustion residues such as slags, ashes and fine dusts from waste combustion installations (11) with solid, liquid and/or gaseous fossil fuels in a melting device. In order to reduce the necessary energy by combusting fossil fuels, the supply of the combustion residues (12) from the waste combustion installation (11) takes place directly into the filling opening (13) of the melting device. The melting device is designed as a shaft furnace (10) with a furnace space (14, 15) with a refractory lining, the combustion residues (12) being melted down by means of a fuel/oxygen mixture or by means of a fuel/oxygen-air mixture which is introduced into the shaft furnace below the combustion residue fill (21).

Classifications:

International (IPC 8-9): C02F11/00 F23G5/08 F23J1/00 F23K3/02 F23L7/00 (Advanced/Invention);
C02F11/00 F23G5/08 F23J1/00 F23K3/00 F23L7/00 (Core/Invention)
International (IPC 1-7): C02F11/00 C03B5/12 F23G5/00 F23G5/10 F23J1/00 F23J1/02
CPC: C03B5/005 C03B5/12 F23G5/085 F23G2202/104 F23G2203/403 F23K3/02 F23L7/00
European: C03B5/00B C03B5/12 F23G5/08C F23K3/02 F23L7/00
US: 110/165A 110/248 110/259 110/346

**Family:**

Publication number	Publication date	Application number	Application date
DE4339675 C1	19950504	DE19934339675	19931122
EP0654450 A2	19950524	EP19940203250	19941108
EP0654450 A3	19950719	EP19940203250	19941108
JP7310917 A2	19951128	JP19940282285	19941116
US5605104 A	19970225	US19940337980	19941114

Priority:

DE19934339675 19931122

Probable Assignee: MESSER GRIESHEIM GMBH

Assignee(s): (std): MESSER GRIESHEIM GMBH ; STEINMUELLER GMBH L AND C

Assignee(s): MESSER GRIESHEIM GMBH 60314 FRANKFURT DE ; L AND C STEINMUELLER GMBH 51643 GUMMERSBACH DE ; MESSER GRIESHEIM GESELLSCHAFT MIT BESCHRANKTER HAFTUNG

Inventor(s): (std): LICHTMANN FRANK DR ; GROSS GERHARD DR ; GROS GERHARD DR ; GERU HARUTO GUROOSU ; FURANKU RIHITOMAN ; LICHTMANN FRANK ; GROSS GERHARD

Designated states: AT CH DE FR GB IT LI NL

12) Family number: 30219142 (US2003010267A)

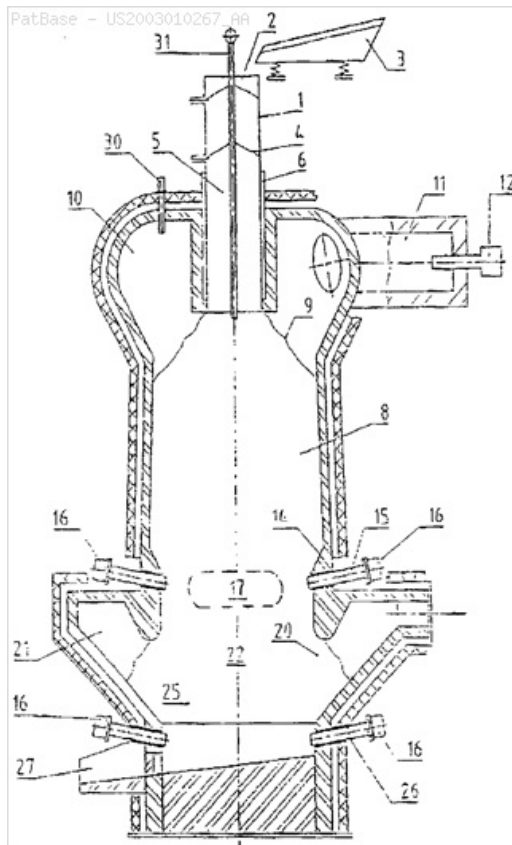
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Title: REACTOR AND METHOD FOR GASIFYING AND /OR MELTING MATERIALS

Abstract: Source: US2003010267A The invention relates to a reactor for gasifying and/or melting feed materials, comprising the following: a delivery section (1) by which means the feed materials are introduced; a pyrolysis section (8), which adjoins the preceding section, hereby expanding the cross-section; gas supply means (10) which open into the pyrolysis section (8) approximately at the level of the expanded cross-section and by which means hot gases are supplied to a discharge cone (9); a melting and overheating section (14) which adjoins the pyrolysis section (8); upper feeding-in means (15) for introducing a medium that is rich in energy into the melting and overheating section (14); a reduction section (20) comprising gas extraction means (21), by which means excess gases are extracted; a hearth (25) which is situated beneath the reduction section (20), for collecting and diverting molten metals and slag; and lower feeding-in means (26), by which means a medium that is rich in energy is introduced directly above the melts and below the gas extraction means (21). The invention also relates to a method for gasifying and/or melting feed materials.

Classifications:

International (IPC 8-9): C10J3/00 C10J3/02 C10J3/26 C10J3/66 F23G5/027 F23G5/24 (Advanced/Invention);
C10J3/00 F23G5/027 (Advanced/Non-invention);
C10J3/00 C10J3/02 F23G5/027 F23G5/24 (Core/Invention)
International (IPC 1-7): C10J3/00 C10J3/08 C10J3/20 C10J3/26 C21B11/02 F23B7/00 F23G5/00 F23G5/027 F23G5/04 F23G5/10 F23G5/14 F23G5/24
CPC: C10J2200/152 C10J2300/0946 C10J2300/0959 C10J2300/1223 F23G5/0276 C10J3/26 C10J3/66 C10J3/74 F23G5/24 F23G2202/101 F23G2202/104 F23G2202/106 F23G2205/16 F23G2205/18 F23G2207/20 F23G2900/50002
European: C10J3/26 C10J3/66 F23G5/027C F23G5/24 R23G202/101 R23G202/104 R23G202/106 R23G205/16 R23G205/18 R23G207/20 R23G900/50002 Y02E20/18
US: 110/224 110/225 110/229 110/230 110/250 110/259 110/259S 110/342 110/345 110/346

**Family:**

Publication number	Publication date	Application number	Application date
AT310208 E	20051215	AT20010911636T	20010213
AU200140615 A1	20010827	AU20010040615	20010213
AU200140615 A5	20010827	AU20010040615D	20010213
BRPI0108578 A	20030429	BR2001PI08578	20010213
BRPI0108578 B1	20091201	BR2001PI08578	20010213
CA2400234 AA	20020814	CA20012400234	20010213
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CZ305021 B6	20150401	CZ20020002908	20010213
DE10007115 A1	20010906	DE20001007115	20000217
DE10007115 C2	20020627	DE20001007115	20000217
DE50108084 D1	20051222	DE20015008084	20010213
DK1261827 T3	20060703	DK20010911636T	20010213
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EP1261827 A1	20021204	EP20010911636	20010213
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HU228016 B1	20120828	HU20030000690	20010213
JP2003527554 T2	20030916	JP20010560598T	20010213
JP4426150 B2	20100303	JP20010560598T	20010213
KR100770889 B1	20071026	KR20027010422	20010213
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MXPA02007967 A1	20040405	MX2002PA07967	20010213
PL193225 B1	20070131	PL20010357563	20010213
PL357563 A1	20040726	PL20010357563	20010213
SK200201291 A5	20050602	SK20020001291	20010213
SK288020 B6	20121105	SK20020001291	20010213
US2003010267 AA	20030116	US20020203525	20020809
US6662735 BB	20031216	US20020203525	20020809
WO0161246 A1	20010823	WO2001EP01581	20010213
WO0161246 C1	20011115	WO2001EP01581	20010213
ZA200206571 A	20030612	ZA20020006571	20020816

Priority:

DE20001007115 20000217
 WO2001EP01581 20010213

DE20015008084 20010213
 WO2001EP01581 20020812

KR20027010422 20020812

Probable Assignee: KBI INT LTD

Assignee(s): (std): ENTWICKLUNGSZENTRUM FÜR UMWELT ; KSK WT GMBH ; GRÜESSING ; KSK BT GMBH ; GRUSIN GMBH
 UMWELTTECHNIK ENTW ; ENTWICKLUNGSZENTRUM FÜR UMWELT ; ENTWICKLUNGSZENTRUM FÜR UMWELT
 ; ENTWICKLUNGSZENTRUM FÜR UMWELTTECHNIK GRÜESSING GM ; KBI INTERNAT LTD ; KBI INT LTD ;

Assignee(s): MASCH U STAHLBAU GMBH ROLAN ; TISCHER ECKHARDT ; WUCHERT FRANK ; MASCH UND STAHLBAU GMBH ROLAN ; MASCH UND STAHLBAU GMBH ; MASCH U STAHLBAU GMBH ROLAND GRUERING ; MASCH U STAHLBAU GMBH ROLAND GRUESING ; MASCHINEN UND STAHLBAU GMBH ; MASCHINEN UND STAHLBAU GMBH ROLAND GRUESING ; DO OFF TRAIL STAHL MICHAEL BAUER GMBH ROLLS OF IRELAND HE LU XING ; ENTWICKLUNGSZENTRUM FUR UMWELTTECHNIK GRUESING GMBH AND CO KG ; KAESCA BETTE ; GRUSIN GMBH UMWELTTECHNIK ENTWICKLUNG SZENTRUM ; ENTWICKLUNGSZENTRUM FUR UMWELTTECHNIK GRUESING G ; ENTWICKLUNGSZENTRUM FUR UMWELTTECHNIK GRUESING GMBH AND CO KG ; ENTWICKLUNGSZENTRUM F UMWELTTECHNIK GRUESING GMBH AND CO KG ; MASCH U ; KBI INT ; GRUESING ROLAND ; KBI INTERNATIONAL LTD

Inventor(s): (std): E TISCHER ; ECKHARDT TISCHER ; F WUCHERT ; FRANK WUCHERT ; TISCHER E ; TISCHER ECKHARDT ; WUCHERT F ; WUCHERT FRANK

Agent(s): DEETH WILLIAMS WALL LLP; YAMAGUCHI IWAO

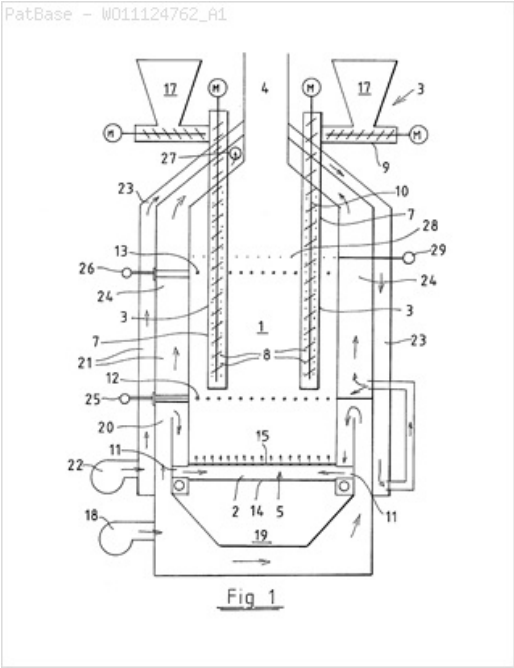
Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BY BZ CA CF CG CH CI CM CN CR CU CY CZ DE DK DM DZ EE ES FI FR GA GB GD GE GH GM GN GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NE NL NO NZ PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

13) Family number: 44977913 (WO11124762A1) © PatBase

Title: BOILER STRUCTURE FOR BURNING SOLID FUEL

Abstract: The invention relates to a boiler structure for burning solid fuel, wherein the boiler structure includes a combustion chamber (1) having a grate (2) at the bottom thereof; fuel supply means (3); combustion air supply means; and a discharge duct (4) for hot exhaust gases. According to the invention the grate (2) includes a nozzle structure (5) provided with a primary combustion air feed-through in order to fluidize the fuel in the air flow above the grate, and two hinged sections (6) which can be turned in a substantially vertical position independently of each other in order to drop the ash from the top of the grate into a lower ash box. Furthermore, according to the invention the fuel supply means (3) include a substantially straight and vertical tube (7) extending from the top part of the combustion chamber (1) to the space above the grate and surrounded by hot combustion gases during combustion process. In addition, the jacket of the tube (7) is provided with holes (8) disposed substantially along its entire height in order to lead the steam, released as the fuel flowing down the tube is drying, and the burning gases into the combustion chamber before the fuel falls onto the grate and into the layer of primary air.

Classifications:
International (IPC 8-9): F23B40/02 F23H13/06
F23K3/16 (Advanced/Invention);
F23B60/02 (Advanced/Non-invention);
F23C (Subclass/Invention)
CPC: F23G7/10 F23G5/04 F23G5/14 F23G5/30 F23G2201/303
F23G2201/304 F23G2203/502 F23G2205/121 F23G2206/10
European: F23G5/04 F23G5/14 F23G5/30 F23G7/10 R23G201/303
R23G201/304 R23G203/502 R23G205/121 R23G206/10



Family:

Publication number	Publication date	Application number	Application date
FI123120 B	20121115	FI20100005365	20100409
FI20105365 A0	20100409	FI20100005365	20100409
WO11124762 A1	20111013	WO2011FI50297	20110406

Priority:

FI20100005365 20100409

Probable Assignee: MAEKIVIRTA TAISTO

Assignee(s): (std): MAEKIVIRTA TAISTO

Inventor(s): (std): MAEKIVIRTA TAISTO

Agent(s): PAPULA OY

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

14) Family number: 54824091 (US2013247800A) © PatBase

Title: METHOD AND APPARATUS FOR DRYING SOLID FUELS

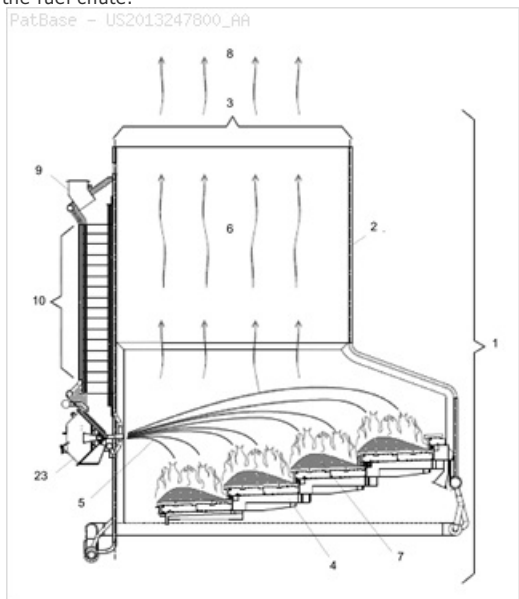
Abstract: Source: US2013247800A A method for drying solid fuels prior to injection and burning in solid fuel boilers is described. High moisture content solid fuels such as bark, sludge, wet coal, etc. must be dried before they can burn. Embodiments of the present invention incorporates a fuel delivery chute integrated with the boiler wall using a flow of combustion gasses and radiant heating to partially dry the solid fuel before it reaches the combustion zone of the boiler. The combustion gasses are drawn through the delivery chute by means of the flowing fuel and air jet inductors that then blows the combustion gasses back into the boiler. A refractory wall separates the fuel chute from the boiler proper, is heated by the combustion in the boiler, and radiates heat to the fuel falling through the fuel chute.

Classifications:

International (IPC 8-9): F23G5/04 F23G5/44 (Advanced/Invention)

CPC: F23G5/04 F23G5/444 F23G2205/16 F23K1/04

US: 110/118 110/228 110/234 110/342



Family:

Publication number	Publication date	Application number	Application date
US2013247800 AA	20130926	US20120662457	20121027

Priority:

US20110522939P 20110812 US20120662457 20121027 WO2012US0610 20120813

Probable Assignee: HIGGINS DANIEL R

Assignee(s): (std): HIGGINS DANIEL R ; KNIGHTEN DAVID J ; KRANDA MICHAEL J ; SULLIVAN EUGENE

Inventor(s): (std): HIGGINS DANIEL R ; KNIGHTEN DAVID J ; KRANDA MICHAEL J ; SULLIVAN EUGENE

15) Family number: 54908923 (US2015040807A)

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Title: SUPPLEMENTAL BURNER FOR CONVERSION OF BIOMASS AND RELATED SOLID FUEL

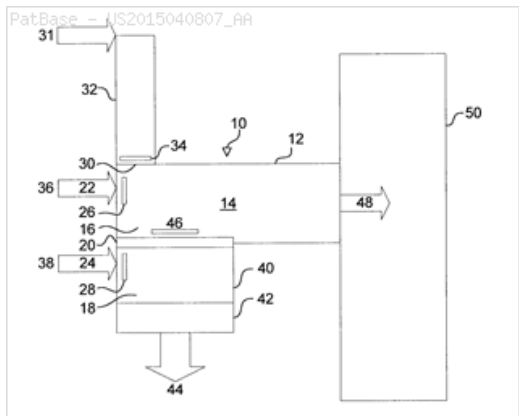
Abstract: Source: US2015040807A A conversion burner, a system of conversion burners, and a method of conversion of a solid fuel selected from at least one of biomass and peat. The burner is constructed and arranged to be affixed to a combustor, and comprises a housing defining a burner chamber; a grate within the burner chamber defining an upper chamber region and a lower chamber region; at least a first solid fuel inlet; at least a first air inlet operatively connected to the upper chamber region and connectable to a first air source; a product gas outlet operatively connected to the combustion region of the combustor; and at least one waste outlet. The product gas is delivered to the combustor for firing or co-firing, overcoming fouling problems which result from direct delivery of solid fuel to the combustor, and problems raised by remote conversion or storage of solid fuel.

Classifications:

International (IPC 8-9): F23B10/02 F23B30/02 F23B60/00 F23G5/00 F23G5/027 F23G7/00 (Advanced/Invention)

CPC: Y02E20/12 F23B10/02 F23B90/06 F23G2201/303 F23G5/002 F23B30/02 F23G5/027

US: 110/229 110/248 110/259 110/299 110/346



Family:

Publication number	Publication date	Application number	Application date
CA2867054 AA	20140911	CA20122867054	20120329
US2015040807 AA	20150212	US20120386839	20120329
WO13142945 A1	20131003	WO2012CA00292	20120329

Priority:

WO2012CA00292 20120329

Probable Assignee: CA MINISTER NATURAL RESOURCES

Assignee(s): (std): CA MINISTER NATURAL RESOURCES ; CANADA NATURAL RESOURCES ; CLEMENTS BRUCE ; POMALIS

RICHARD ; HER MAJESTY QUEEN IN RIGHT OF CANADA REPRESENTED BY MINISTER OF NATURAL RESOURCES AS ; HERAGE TED

Assignee(s): HER MAJESTY QUEEN IN RIGHT OF CANADA REPRESENTED BY MINISTER OF NATURAL RESOURCES ASS80 BOOTH STREET16TH FLOOROTTAWAO1K1A 0E4CA ; POMALIS RICHARD13 CONNISTON AVENUEOTTAWAO1K2H 5H9CA ; HERAGE TED83 MCBRIEN STREETKANATAO1K2W 1H1CA ; CLEMENTS BRUCE21 PEPPERRALL CRESCENTNEPEANO1K2J 3W7CA

Inventor(s): (std): CLEMENTS BRUCE ; HERAGE TED ; POMALIS RICHARD

Inventor(s): POMALIS RICHARD13 CONNISTON AVENUEOTTAWAO1K2H 5H9CA ; HERAGE TED83 MCBRIEN STREETKANATAO1K2W 1H1CA ; CLEMENTS BRUCE21 PEPPERRALL CRESCENTNEPEANO1K2J 3W7CA

Agent(s): SHAPIRO COHEN LLP; SHAPIRO COHEN

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

16) Family number: 54912989 (US2013276723A)

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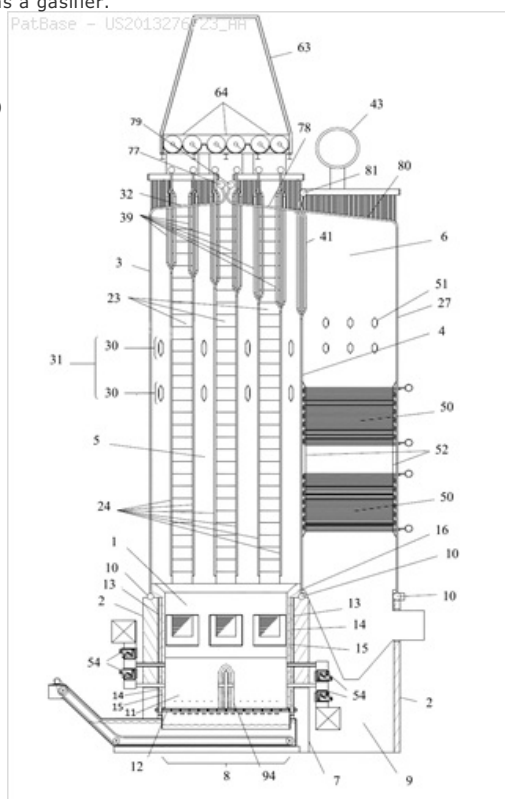
Title: METHOD AND APPARATUS FOR IMPROVED FIRING OF BIOMASS AND OTHER SOLID FUELS FOR STEAM PRODUCTION AND GASIFICATION

Abstract: Source: US2013276723A A ground supported single drum power boiler is described combining a refractory lined and insulated V-Cell floor; refractory lined and insulated combustion chamber; integrated fuel chutes configured to pre-dry wet solid fuel; top mounted fuel bin; internal chamber walls; configurable combustion air systems; and a back pass with after-burner ports and cross flow superheaters. The boiler can be configured in pre-assembled modules to minimize the field construction time and cost. An alternative embodiment is adaptable as a gasifier.

Classifications:

International (IPC 8-9): C10J3/34 F22B21/00 F22B21/14 F22B37/00 F22G1/04 F22G5/02 F23C10/00 F23C9/00 F23G5/00 F23G5/04 F23G5/05 F23G5/24 F23G5/46 F23G7/00 F23G7/10 F23H13/06 F23J1/00 F23K3/00 F23L7/00 F23M3/22 F24H9/00 (Advanced/Invention) **CPC:** F23M3/22 F23C9/00 F23H13/06 F23K3/00 F22G1/04 F23L7/00 F22B21/14 F23C2900/01001 F23G5/002 F23G5/04 F23G5/46 F23G7/10 F23G2202/106 F23G2205/16 F23G2206/10 F23J1/00 Y02E20/12 Y02E20/344 F23C9/006 F23G5/24 F23G7/00 F23G5/05 F22G5/02 F22B21/00

US: 1/1 110/101R 110/110 110/204 110/224 110/229 110/235 110/297 110/317 110/346 122/235.12 122/460 126/162 29/890.051



Family:

Publication number	Publication date	Application number	Application date
BR112014023860 A2	20170620	BR20141123860	20130327
CA2868476 A2	20140924	CA20132868476	20130327
CO7160020 A2	20150115	CO20140213406	20140926
US2013276723 AA	20131024	US20130851883	20130327
US2016109116 AA	20160421	US20150860600	20150921
US2017234529 AA	20170817	US20170444193	20170227
US9140446 BB	20150922	US20130851883	20130327
US9581325 BB	20170228	US20150860600	20150921
WO13148885 A1	20131003	WO2013US34172	20130327
WO13148885 A4	20131121	WO2013US34172	20130327

Priority:

US20120616211P 20120327 US20130851883 20130327 WO2013US34172 20130327
US20150860600 20150921 US20170444193 20170227

Probable Assignee: DANIEL R HIGGINS

Assignee(s): (std): HIGGINS DANIEL R ; SULLIVAN EUGENE

Assignee(s): SULLIVAN EUGENE2616 CHARLESTON OAKS DRIVE W.MOBILEAL36695US ; HIGGINS DANIEL R14743 SW SHOUE DR.TIGARDOR97224US ; DANIEL R HIGGINS ; EUGENE SULLIVAN

Inventor(s): (std): HIGGINS DANIEL R ; SULLIVAN EUGENE

Inventor(s): SULLIVAN EUGENE2616 CHARLESTON OAKS DRIVE W.MOBILEAL36695US ; HIGGINS DANIEL R14743

Agent(s): OYEN WIGGS GREEN AND MUTALA LLP; LUZ CLEMENCIA DE PAEZ; SCHEINBERG AND ASSOCIATES PC; MICHAEL O; JOHN B; SCHEINBERG MICHAEL O

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

17) Family number: 55194697 (US8590463B)

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Title: METHOD AND APPARATUS FOR DRYING SOLID FUELS

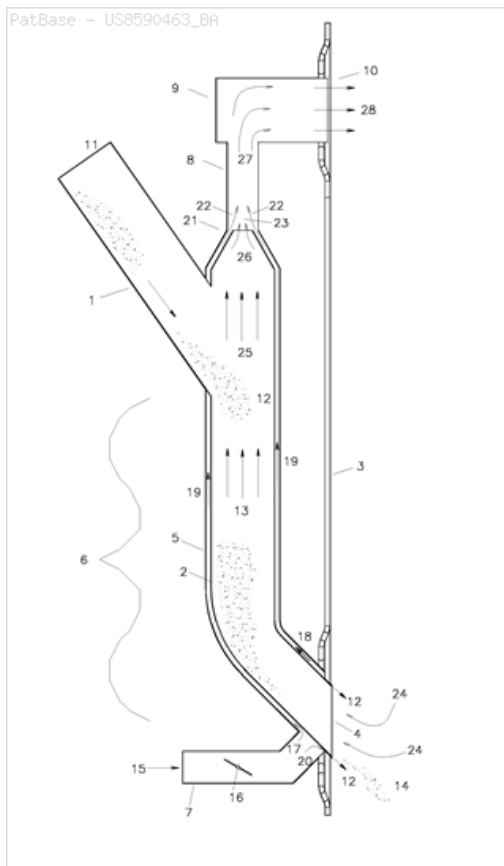
Abstract: Source: US8590463B A system for drying solid fuels prior to injection and burning in solid fuel boilers is described. High moisture content solid fuels such as bark, sludge, wet coal, are preferably dried to some degree before they can burn. The present invention incorporates a delivery chute in which combustion gases dry the solid fuel before it reaches the combustion chamber of the boiler. In one embodiment, the combustion gases are drawn through the delivery chute to remove moisture from the incoming fuel and then the gases flow back into the boiler. A second embodiment directly exposes the wet fuel to the combustion in the boiler for a sufficient time to remove a substantial amount of moisture before the fuel is spread onto the solid fuel combustion region.

Classifications:

International (IPC 8-9): F23B80/02 F23C9/00 F23G5/04 F23K3/16 F23L15/00 (Advanced/Invention)

CPC: F23C9/00 F23G5/04 F23K1/04 F23C2202/20 F23C2202/50 F23K2203/104 F23K2203/20 F23K2900/01041

US: 110/118 110/204 110/224 110/293 110/302



Family:

Publication number	Publication date	Application number	Application date
US8590463 BA	20131126	US20090471081	20090522

Priority:

US20080055802P 20080523 US20090471081 20090522

Probable Assignee: HIGGINS DANIEL RICHARD

Assignee(s): (std): HIGGINS DANIEL RICHARD ; SULLIVAN EUGENE

Inventor(s): (std): HIGGINS DANIEL RICHARD ; SULLIVAN EUGENE

Agent(s): MICHAEL O; SCHEINBERG AND ASSOCIATES PC; JOHN B

18) Family number: 59784370 (US2015300636A)

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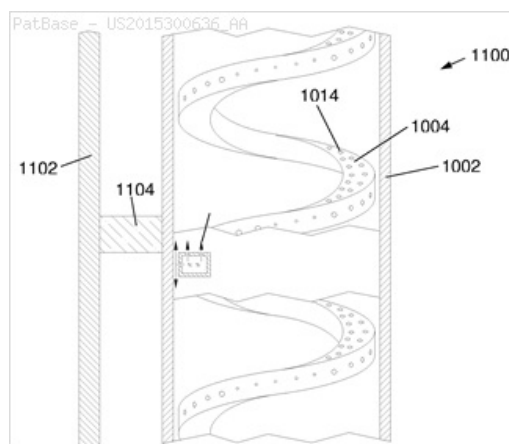
Title: COMBUSTION BOILER WITH PRE-DRYING FUEL CHUTE

Abstract: Source: US2015300636A A solid fuel boiler with one or more fuel chutes configured to pre-dry wet solid fuel prior to loading into a combustion chamber of the boiler, enabling higher thermal efficiencies and burning less fuel to produce the same steam quantity. The pre-drying fuel chutes pass through the boiler where hot combustion gases radiantly and convectively-heat the chute walls to dry the wet solid fuel by radiant, convective, and/or conductive heating. Agitator mechanisms or structures within the chute mix the fuel for uniform heating, break up clumps of wet fuel, regulate the speed of falling fuel, prevent sticking, dry the fuel by means of steam and/or hot air, transport and deliver a cooling medium while a chute is offline in an operating boiler, and suppress fire using steam injection. Fuel from the chute can flow into a fuel storage bin or directly into the combustion zone of the furnace.

Classifications:

International (IPC 8-9): F23B99/00 F23G5/04

F23K3/00 (Advanced/Invention);
F23K (Subclass/Invention)
CPC: F23B99/00 F23G5/04 C07D213/24 C07D213/74 C07D239/26
C07D239/30 C07D239/34 C07D239/47 C07D239/48 C07D239/52
C07D239/54 C07D239/58 C07D241/12 C07D241/16 C07D241/18
C07D401/14 C07D403/08 C07D403/14 C07D407/08 C07D409/14
F01K5/02 F23K1/04 F23K3/00 F23K2201/20 F23K2203/103
US: 110/111 110/224 110/342



Family:

Publication number	Publication date	Application number	Application date
CA2935578 AA	20160629	CA20152935578	20150108
CL2016001717 A1	20170210	CL20160001717	20160705
CO20160000669 A2	20170209	CO20160000669	20160805
FI20165608 A	20160808	FI20160005608	20160808
PE11112016 A1	20161022	PE20160001112	20150108
SE201650997 A1	20160707	SE20160050997	20150108
US2015300636 AA	20151022	US20150592566	20150108
WO15105989 A1	20150716	WO2015US10642	20150108

Priority:

US20140925063P 20140108 US20150592566 20150108 WO2015US10642 20150108

Probable Assignee: BOARD OF TRUSTEES OF UNIV OF ILLINOIS

Assignee(s): (std): BOARD OF TRUSTEES OF UNIV OF ILLINOIS ; DANIEL R HIGGINS ; HIGGINS DANIEL R ; SULLIVAN EUGENE ; EUGENE SULLIVAN ; SULLIVAN EUGENE J

Assignee(s): EUGENE J SULLIVAN

Inventor(s): (std): DANIEL R HIGGINS ; EUGENE J SULLIVAN ; HIGGINS DANIEL R ; EUGENE SULLIVAN ; SULLIVAN EUGENE J ; SULLIVAN EUGENE

Inventor(s): MCDONNELL DONALD ; KATZENELLENBOGEN JOHN

Agent(s): OYEN WIGGS GREEN AND MUTALA LLP; PABLO RUIZ TAGLE VIAL; JOSE ANDRES RINCON USCATEGUI; KELLY JOHN B ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

19) Family number: 61701737 (US2016195260A)

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Title: POWER BOILER HAVING VERTICALLY MOUNTED CYLINDRICAL COMBUSTION CHAMBER

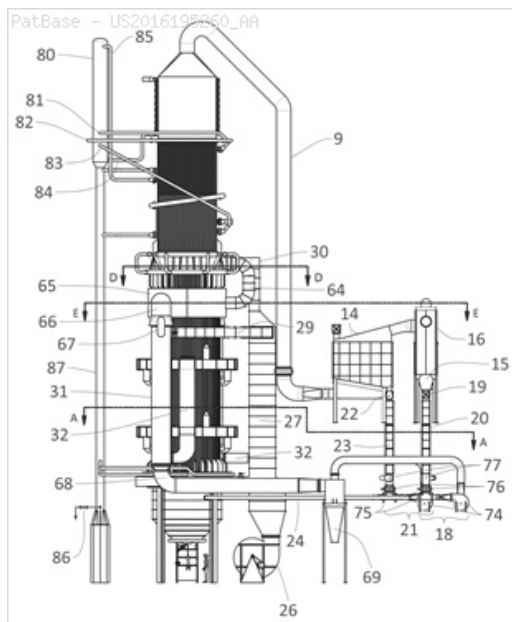
Abstract: Source: US2016195260A A ground supported power boiler is described combining a refractory lined and insulated conical floor; an insulated cylindrical combustion chamber; a cylindrical furnace with water tube wall; a rectangular convective section; a single vertical steam drum; tangential injection of the fuel and combustion air; means for fluidizing the fuel bed; means for selectively stripping particulates from the flue gases; multi-stage particulate stripping and filtering from flue gases, means for using the walls of steam drum as steam/water droplet separator, means for recirculating and capturing heat from the flue gases; means for pressurizing the interior of the boiler above atmospheric pressure; means for heating and drying fuel prior to feeding the fuel to the boiler; means for creating hydrogen shift reaction; means for eliminating any need for sootblowing; and designed to not require the use of an induced draft fan.

Classifications:

International (IPC 8-9): F22B21/34 F22B21/36 F22B31/00 F23B80/00
F23C10/00 F23C10/08 F23G5/04 F23G5/24 F23G5/30 F23G5/32
F23G5/44 F23G5/46 F23J15/02 F23J3/00
F27B1/18 (Advanced/Invention)

CPC: F22B21/36 F22B31/0007 F23G5/04 F23G5/24 F23G5/30
F23G5/32 F23G5/444 F23G5/46 F23G2205/20 F23G2206/10
F23G2206/203 F23G2209/12 F23G2209/261 F23J15/025 F23J15/027
Y02E20/12 F22B31/003 F22B21/341

US: 110/205 110/216 110/224 122/235.12 122/235.15 122/336



Family:

Publication number	Publication date	Application number	Application date
CA2981457 AA	20170202	CA20152981457	20150814
CO20170001530 A2	20170711	CO20170001530	20170216
FI20175152 A	20170217	FI20170005152	20170217
IN201717007336 A	20170630	IN201717007336	20170301
PE14952017 A1	20171020	PE20170000208	20150814
SE201750131 A1	20170213	SE20170050131	20150814
US2016195260 AA	20160707	US20150826194	20150813
US2017234526 AA	20170817	US20170444209	20170227
US9581326 BB	20170228	US20150826194	20150813
WO16025857 A1	20160218	WO2015US45315	20150814

Priority:

US20140038153P 20140815 US20150826194 20150813 WO2015US45315 20150814
US20170444209 20170227

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