

1) Family number: 20445008 (US6024032A)

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Title: PRODUCTION OF HEAT ENERGY FROM SOLID CARBONACEOUS FUELS

Abstract: PCT No. PCT/GB96/02169 Sec. 371 Date Apr. 27, 1998 Sec. 102(e) Date Apr. 27, 1998 PCT Filed Oct. 25, 1996 PCT Pub. No. WO97/15641 PCT Pub. Date May 1, 1997A process for the production of heat energy from solid carbonaceous fuels is disclosed which comprises subjecting the carbonaceous fuel to substantially anaerobic pyrolysis in at least one first zone and thereafter transferring the char resulting from the pyrolysis to a second zone which is segregated from the first zone or zones. The char is subjected to gasification in the second zone by introduction of primary combustion air, optionally with steam and/or recycled exhaust gas. The off gases from the second zone and the pyrolysis gases from the first zone or zones are thereafter subjected to secondary combustion and the first zone or zones is heated by heat derived from the secondary combustion. Ash is removed from the bottom of the second zone.

Classifications:**International (IPC 8-9):** C10B31/06 C10J3/30 C10J3/66 F23G5/027

F27D3/00 F27D3/04 F27D3/08 (Advanced/Invention);

C10B31/00 C10J3/00 C10J3/02 F23G5/027 F27D3/00 (Core/Invention)

International (IPC 1-7): C10J3/30 C10J3/66 F23B5/00 F23B7/00

F23G5/027 F23G5/12 F23G5/27

CPC: C10J2200/154 C10J3/34 C10J2200/158 C10J2300/1606 Y10S48/04

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F27D3/0033 F27D3/04 F27D3/08

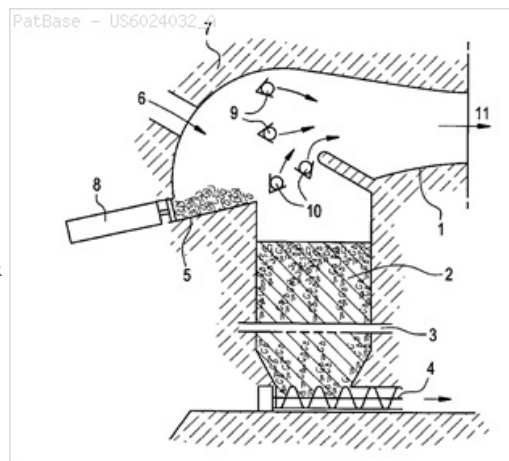
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F27D3/04 F27D3/08 R23G201/303 R23G201/304

US: 110/109 110/110 110/204 110/210 110/211 110/229 110/234

110/289 110/297 110/342 110/344 110/345 110/346 110/347 48/197.00R

48/197R 48/198.3 48/DIG.4

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DK0874881 T3	20000925	DK19960935092T	19961025
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SI0873382 T1	20020630	SI19960030324T	19961025
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WO9715641 A1	19970501	WO1996GB02619	19961025

Priority:

GB19950021950 19951026

GB19950021984 19951026

EP19960935091 19961025

EP19960935092 19961025

WO1996GB02618 19961025

WO1996GB02619 19961025

Probable Assignee: COMPACT POWER LTD**Assignee(s):** (std): COMPACT POWER LIMITED ; COMPACT POWER LTD ; SHARPE JOHN ERNEST ELSOM

Assignee(s): COMPACT POWER LTD LONDON ; ETHOS ACQUISITIONS LTD ; ETHOS ENERGY WORLDWIDE LTD ; PITTMAN PAUL JAMES ; PYBUS PAUL ; TOUHEY KENNETH ; COMPACT POWER LTD CHELTENHAM ; COLDUNELL LTD

Inventor(s): (std): JOHN ERNEST ELSOM SHARPE ; SHARPE ERNEST ; SHARPE JOHN ERNEST ELSOM ; SHARPE JOHN ERNEST

Designated states: AL AM AT AU AZ BA BB BE BF BG BJ BR BY CA CF CG CH CN CU CZ DE DK EE ES FI FR GB GE GR HU IE IL IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MC MD MG MK MN MW MX NL NO NZ PL PT RO RU SD SE SG SI SK SZ TJ TM TR TT UA UG US UZ VN

2) Family number: 42002014 (US2010162619A)

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Title: MATERIAL AND/OR FUEL PRODUCED FROM BIOMASS

Abstract: The invention relates to a material and/or fuel which is produced from biomass. The material and/or fuel can be produced according to a method, wherein the biomass is treated at a temperature of over 100 degrees centigrade and a pressure of over 5 bar for a treatment duration of at least 1 hour.

Classifications:

International (IPC 8-9): B01J2/00 B01J3/00 B01J3/02 B01J3/04 B09B3/00 C01B31/36 C01B32/00 C01B32/90 C04B35/565 C10B35/00 C10B49/00 C10B49/14 C10G1/00 C10L C10L5/00 C10L5/40 C10L5/44 C10L5/46 C10L5/48 C10L9/08 C12M1/00 F27B17/00 F27D1/00 (Advanced/Invention);

B01J2/00 B01J3/00 B09B3/00 C10L5/00 C10L5/40 (Core/Invention)

International (IPC 1-7): C10L5/40 C10L5/44

CPC: C10L5/442 C10L5/445 C10L5/48 C10L2290/24 C10L2290/28 C04B35/565 C04B2235/3826 C04B2235/425 C04B2235/614 C10L9/083 C10L9/086 Y02E50/10 Y02E50/15 Y02E50/30 C10L5/44

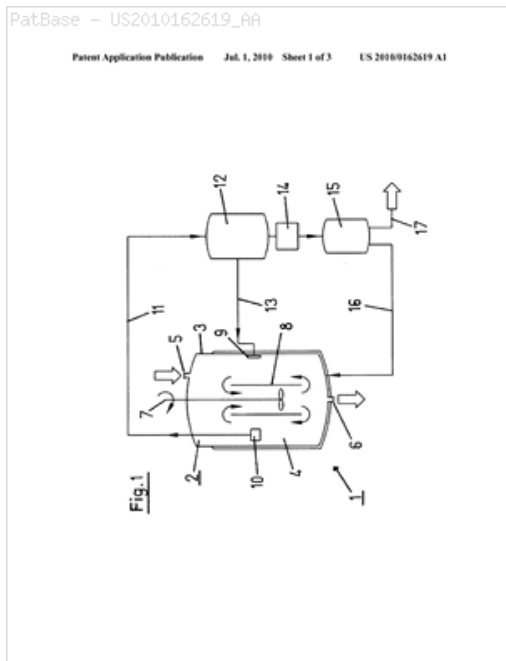
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US: 201/10 201/10P 201/16 201/16S 202/262 202/262S 44/605 44/605P

JP F-Term: 4D004 4D004/AA02 4D004/AA04 4D004/AA12 4D004/AB01 4D004/AB03 4D004/AC05 4D004/BA02 4D004/BA03 4D004/BA10 4D004/CA04 4D004/CA22 4D004/CA24 4D004/CA35 4D004/CA42 4D004/CB04 4D004/CB12 4D004/CB13 4D004/CB21 4D004/CB34 4D004/CB36 4D004/CC09 4D004/DA03 4D004/DA06 4D004/DA07 4D004/DA10 4D004/DA20 4H015 4H015/AA03 4H015/AA12 4H015/AA13 4H015/AB01 4H015/BA01 4H015/BA09 4H015/BA12 4H015/BB03 4H015/BB10 4H015/BB11 4H015/CA03 4H015/CB01 4G039 4G146 4G146/MA14 4G146/NA04 4G146/NA18 4G146/NB01 4G146/NB03 4H015/AA01 4H015/AA02 4H015/AA04 4H015/BB05 4H015/BB13 4H015/CA04

JP F-Index: B09B3/00/303/Z C10L5/44 B01J3/00/B B01J3/02/A B01J3/04/D C01B31/36/601/F C01B32/963



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WO10058377 A3	20110623	WO2009IB55293	20091123
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Priority:

DE200610062504 20061228	DE200710027594 20070612	DE200710056170 20071121
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DE200810058444 20081121	WO2009IB55293 20091123	AU20130201163 20130228
US20160365950 20161201		

Probable Assignee: ANTACOR LTD

Assignee(s): (std): ANTACALL LTD ; ANTACO UK LTD ; ANTACOR LTD ; ANTACOR LTD C O ANTACOR PTE LT ; ANTACOR LTD C O ANTACOR PTE LTD ; MARTIN SCHWEIGER ; PEUS DOMINIK ; PEUS DOMINIK DR ; SCHWEIGER MARTIN

Inventor(s): (std): SCHWEIGER MARTIN ; DOMINIK PEUS ; PEUS DOMINIK DR ; PEUS DOMINIK

Inventor(s): DOMINIK DR PEUS

Agent(s): GOLJA HAINES AND FRIEND; ANTACO UK LTD; GOWLING LAFLEUR HENDERSON LLP; MILTONS IP PI; SCHWEIGER MARTIN; DIEHL AND PARTNER GBR; HIROSE TAKAYUKI; SCHWEIGER AND PARTNERS SINGAPORE LLP; EAGLE IP LIMITED; DAMIAN; WASSERBAUER LAW LLC; SCHWEIGER MARTIN ET AL

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 LI 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 TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

3) Family number: 46866019 (US2012000188A)

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Title: ENVIRONMENTALLY CLEAN PROCESS FOR UTILIZING PYROLYSIS PRODUCTS

Abstract: A process for the recovery of sulfur from the products resulting from the pyrolysis of sulfur-containing organic materials, comprises the steps of: a) carrying out the combustion of liquid pyrolysis products, thereby to obtain sulfur dioxide in the formed exhaust gases; b) reacting hydrogen sulfide recovered from gases, generated in the pyrolysis process, with said sulfur dioxide; and c) reacting hydrogen sulfide recovered from gases, generated in the gasification of solid pyrolysis products, with said sulfur dioxide, and as a result to obtain elemental sulfur, pure gaseous fuel and exhaust gases from liquid products combustion free from sulfur-containing compounds.

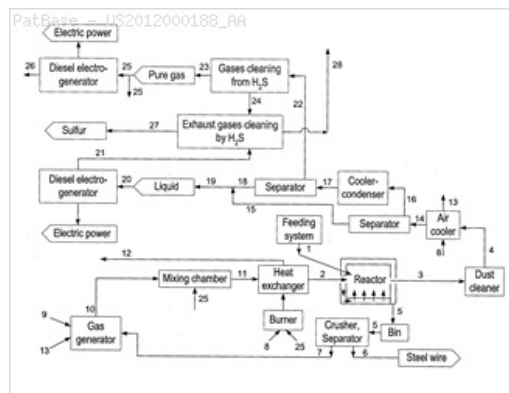
Classifications:

International (IPC 8-9): A01K67/027 B01J6/00 B65G11/20 C01B C07C7/00 C08J C08J11/04 C10B1/10 C10B35/00 C10B49/04 C10B5/00 C10B51/00 C10B53/07 C10B7/10 C10J3/66 F01N3/18 F23G5/027 F23G5/20 F23K3/00 F23Q2/32 F27B7/00 F27B7/10 F27B7/20 F27B7/36 F27B7/42 F27D3/16 (Advanced/Invention); B01J6/00 C07C7/00 C08J11/00 F27B7/00 (Core/Invention); C08J F23K F27B (Subclass/Invention)

CPC: Y02E20/12 F27B7/362 B65G11/206 F27D3/16 F27B7/42 F27B7/00 C10B1/10 C10B49/04 C10B51/00 C10B53/07 C10J3/66 C10J2300/094 C10J2300/0946 C10J2300/0956 C10J2300/0973 F23G5/0276 F23G5/20 F27B7/10 F27B7/20 Y02P20/143

European: C10B1/10 C10B49/04 C10B53/07 C10J3/66 F27B7/00 F27B7/10 F27B7/20 M10J300/09D14 M10J300/09D8 M10J300/09F14 M10J300/09F2

US: 201/7 201/7P 202/100 202/117 202/118 202/131 202/135 202/136 202/262 202/262S 202/268 431/253 431/253S 60/282 60/282P



Family:

Publication number	Publication date	Application number	Application date
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CN102369394 A	20120307	CN201080012512	20100316
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IN08287DN2011 A	20121116	IN2011DN08287	20111025
US2012000188 AA	20120105	US20100256990	20100316
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US2012006669 AA	20120112	US20100256996	20100316
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WO10106538 A1	20100923	WO2010IL00217	20100316
WO10106539 A2	20100923	WO2010IL00218	20100316
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Priority:

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Probable Assignee: TDE RECOVERY TECHNOLOGIES LTD

Assignee(s): (std): ALEXANDER P BRONSHTEIN ; BRONSHTEIN ALEXANDER P ; DAVID SHALOM JAKOBOWITCH ; JAKOBOWITCH DAVID SHALOM ; SKOP MENACHEM L ; T D E RECOVERY TECHNOLOGIES LT ; T D E RECOVERY TECHNOLOGIES LTD ; MOSHE WEISS ; MENACHEM L SKOP ; T D E RECOVERY TECH LTD ; WEISS MOSHE

Assignee(s): TDE RECOVERY TECHNOLOGIES LTD

Inventor(s): (std): JAKOBOWITCH DAVID SHALOM ; JACOBovic S D ; SKOP MENACHEM ; JAKOBOWITCH DAVID SHALOM ; SKOP MENACHEM L ; WEISS MOSHE ; BRONSHTEIN ALEXANDER P ; MOSHE WEISS ; JAKOBOWITCH DAVID SHAALOM

Inventor(s): DAVID SHAALOM JAKOBOWITCH ; MENACHEM L SKOP ; ALEXANDER P BRONSHTEIN ; DAVID SHALOM JAKOBOWITCH

Agent(s): TIESMEYER JOHANNES; WEICKMANN AND WEICKMANN PARTMBB; CAMPello REYES; LUZZATTO AND LUZZATTO; S FRIEDMAN AND CO; ROACH BROWN MCCARTHY AND GRUBER PC; KEVIN D; LUZZATTO AND LUZZATTO ET AL

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 LI 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

4) Family number: 57414072 (US2016030856A)

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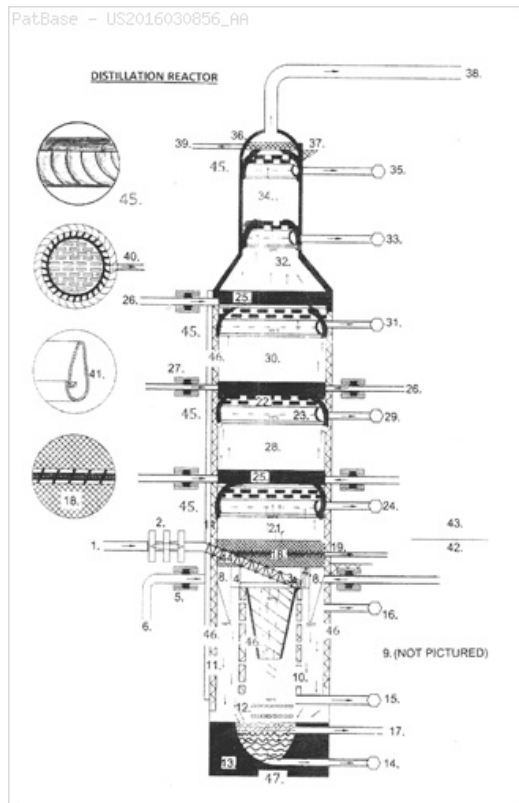
Title: DISTILLATION REACTOR MODULE

Abstract: The distillation reactor consists of a reactor apparatus with corresponding method of upstream distilling and purification of carbon based liquid or liquidized streams for use as fuels, lubricating oils and or gaseous energy and electricity production. The distillation reactor consolidates the atmospheric and vacuum distillation processes along with desalting, defueling, deasphalting, fractionation, thin/wiped film evaporation and Hydro finishing into an advanced high velocity, high volume single reactor system. Carbon based feed streams include either a single stream or preferably, a combined stream of liquefied coal slurries, crude oils, spent oils, Pyrolytic oils and or peat or other plant carbon derived liquids, vapors, mists or gases. The method further consists of controlling the mix ratio, flow velocity, sequential fractionation and filtration technology and processing atmospheres of the carbon feeds with the reactor apparatus. The combined apparatus and method allows for a refinery to consistently produce a finished barrel of oil well below traditional costs and at a higher efficiency than current art and prior art.

Classifications:

International (IPC 8-9): B01D3/00 B01D3/06 B01D3/10 B01D3/26 B01D3/32 B01D39/20 B01D53/48 B01D53/62 B01D59/04 B01J B01J19/24 B01J19/26 B01J2/00 B01J6/00 B01J8/24 B02C23/00 B03C1/00 B22F3/10 B22F9/00 B29B17/00 C01B17/027 C01B17/74 C02F1/00 C10B49/12 C10G1/00 C10G11/18 C10G33/00 C10G45/00 C10G57/00 C10G7/00 C10G7/06 C10G9/04 C10J3/72 C10L9/10 C22B13/00 C22B15/00 C22B21/00 C22B7/00 C22B9/00 F03G7/00 F27B17/00 G21C1/02 G21D5/00 H01M10/54 H01M8/00 H02K55/02 H02K7/09 (Advanced/Invention)
CPC: Y02E30/40 G21D1/00 B01J19/0093 B01J2219/00864 B01J2219/00867 B01J2219/00871 C01G21/02 C01B3/32 C01B13/02

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Family:

Publication number	Publication date	Application number	Application date
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EP2969180 A4	20161005	EP20140762668	20140318
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JP2016512165 T2	20160425	JP20160502609T	20140318
US2016030856 AA	20160204	US20140776734	20140318
US2016032904 AA	20160204	US20140776736	20140318
US2016045841 AA	20160218	US20140776732	20140515
WO14146129 A2	20140918	WO2014US31118	20140318
WO14146129 A3	20150129	WO2014US31118	20140318
WO14153570 A2	20140925	WO2014US38290	20140515
WO14153570 A3	20150219	WO2014US38290	20140515
WO14153570 A9	20150806	WO2014US38290	20140515
WO14200605 A2	20141218	WO2014US31116	20140318
WO14200605 A3	20150326	WO2014US31116	20140318
WO14200605 A4	20150430	WO2014US31116	20140318
WO14200605 A9	20150205	WO2014US31116	20140318

Priority:

US20130800209P 20130315	US20130801170P 20130315	US20130801491P 20130315
US20140776734 20140318	US20140776736 20140318	WO2014US31118 20140318
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Probable Assignee: TRANSTAR GROUP LLC

Assignee(s): (std): BRADLEY RANDALL ; KALPAN ALLEN ; KAPLAN ALLEN ; TRANSTAR GROUP LTD

Assignee(s): TRANSTAR GROUP LLC

Inventor(s): (std): KAPLAN ALLEN ; BRADLEY RANDALL ; KALPAN ALLEN

Agent(s): ADE AND CO INC; NELLIGAN OBRIEN PAYNE LLP; PERRONACE ANDREA; HERSHKOVITZ ABRAHAM ET AL; HERSHKOTIZ ABRAHAM 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 LI 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

5) Family number: 52920079 (US2015247642A)

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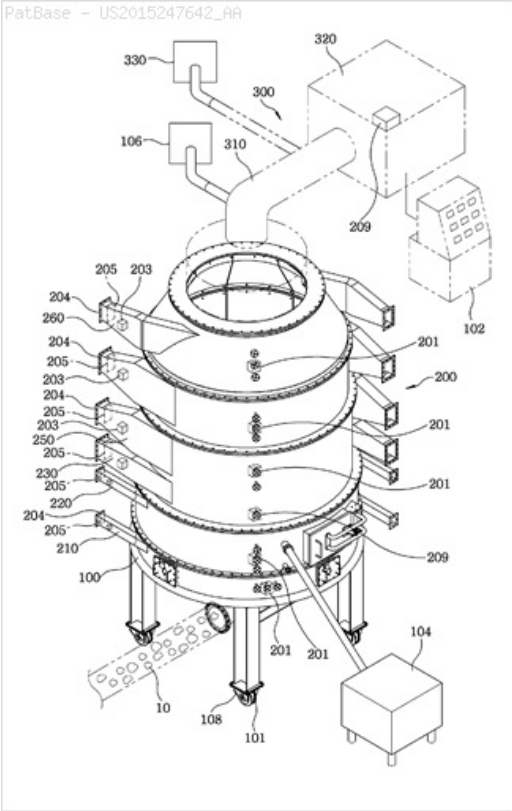
Title: AIR-COOLED COMBUSTION FURNACE SYSTEM

Abstract: Provided is an air cooled combustion furnace system to effectively operate a combustion furnace for generation of heat energy via combustion of a solid fuel so as to optimize thermal efficiency. The combustion furnace system includes a combustion

body structure provided with a hopper and having a combustion space for production of heat energy via combustion of a solid fuel, a cooling device integrally formed in multiple layers with the combustion body structure to cool the combustion body structure via distribution of air, a negative pressure induction device to create a negative pressure within the combustion body structure by suctioning air, a fuel supply device, a grate device constructed by coupling a plurality of grate segments to one another and serving to support the solid fuel being combusted, and a clinker removal device to remove clinkers generated during combustion of the solid fuel from the grate device.

Classifications:

International (IPC 8-9): F23B40/04 F23B60/00 F23H15/00 F23M5/08 F24B1/02 F24B13/00 F24B13/02 F24B13/04 F24B5/00 F24B7/04 F24C1/14 (Advanced/Invention); F23H15/00 F23M5/08 (Core/Invention)
CPC: F24B1/024 F24B13/04 F24B13/02 F24B5/00 F24B13/006 F24B7/04 F23B40/04 F23B60/00 F23H15/00 F23M5/08
US: 126/68 126/77



Family:

Publication number	Publication date	Application number	Application date
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CN104981660 B	20170308	CN201380047553	20130828
KR101228423 B1	20130131	KR20120101658	20120913
TH154252 A	20160714	TH20151001404	20130828
TH64324 B	20180820	TH20151001404	20130828
US2015247642 AA	20150903	US20130428216	20130828
US9951957 BB	20180424	US20130428216	20130828
WO14042369 A1	20140320	WO2013KR07737	20130828

Priority:

KR20120101658 20120913 WO2013KR07737 20130828

Probable Assignee: YS CO LTD

Assignee(s): (std): YOOSUNG CO LTD ; YS CO LTD

Assignee(s): YOOSUNG CO ; YS CO

Inventor(s): (std): PARK JUN HYUN ; SEONG DONG JE ; LEE JAE JEONG ; GIM MIN CHEOL ; KIM MIN CHOUL

Agent(s): IPLA PA; JAMES E; CHEON JEE INT PATENT AND LAW FIRM

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 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

6) Family number: 34405103 (US2010329963A)

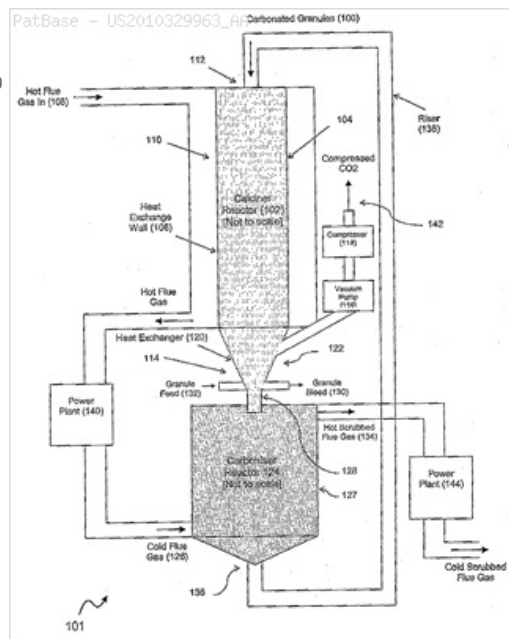
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Title: SYSTEM AND METHOD FOR CALCINATION/CARBONATION CYCLE PROCESSING

Abstract: A system and method for calcination/carbonation cycle processing. The system comprises a calciner reactor for receiving partially carbonated mineral sorbent granules; a heat exchange structure for transferring heat through a wall of the calciner reactor to a granular flow of the sorbent granules for facilitating a calcination reaction of the sorbent granules to regenerate the sorbent granules; a gas extraction unit for removing gas products from the calciner, wherein the gas products comprise carbon dioxide from the calcination reaction; a carbonator reactor for receiving the regenerated sorbent granules from the calciner reactor and for receiving a cold flue gas, such that the regenerated sorbent granules are partially carbonised while the flue gas is scrubbed and the partially carbonated sorbent granules and the scrubbed flue gas exit the carbonator reactor as respective hot materials; and a riser unit for cycling the partially carbonated sorbent granules from the carbonator reactor to the calciner reactor.

Classifications:

International (IPC 8-9): B01D53/02 B01D53/62 B01J20/04 B01J20/28 B01J20/34 B01J6/00 B01J8/00 B01J8/02 B01J8/08 B01J8/12 B01J8/14 C01B13/18 C01B31/20 C01B31/30 C01F11/06 C01F11/18 C01F5/02 C01F5/08 C04B2/10 C04B2/12 C04B9/11 C04B9/20 C05D3/02 C05D5/00 C10B1/04 C22B1/10 F27B1/00 F27B15/00 F27B17/00 F27D13/00 F27D17/00 (Advanced/Invention);
International (IPC 1-7): B01D53/62 B01J6/00 C01F11/00 C01F5/02
CPC: C22B1/10 B01J20/041 B01J20/28004 B01J20/3433 B01J20/04 B01J20/34 C04B2/102 B01D53/62 B01D2251/404 B01D2253/10 B01D2257/504 B01J20/3483 C01F11/18 Y02C10/04 Y02C10/08 Y02P20/152 B01J6/004 B01J8/082 B01J8/087 B01J2208/00292 B01J2208/0053 C01B13/18 C01F5/08 C01F11/06 C04B2/12 F27B1/00 F27B17/00 F27D13/00 F27D17/004 Y02P40/42 Y02A50/2342
European: B01D53/62 B01J20/04 B01J20/34 B01J20/34S B01J6/00C4 B01J8/08D B01J8/08H C01B13/18 C01F11/06 C01F11/18 C01F5/08 C04B2/12 F27B1/00 F27B17/00 F27D13/00 F27D17/00D L01D251/404 L01D253/10 L01D257/504 L01J208/00C2D6F L01J208/00C2Z Y02C10/04 Y02C10/08
US: 1/1 106/801 106/801S 202/120 202/120S 422/611 422/611S 423/1 423/177 423/177P 423/420.2 423/437.1 423/437.100P 423/594.16 432/18 432/215 432/58 432/95 502/400 502/400S 71/63 71/63P 95/107 95/108 95/109 95/110 95/111 95/112 96/108



Family:

Publication number	Publication date	Application number	Application date
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EP2004319 B8	20150722	EP20070718671	20070402
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IN01014MN2008 A	20080905	IN2008MN01014	20080521
IN01015MN2008 A	20080905	IN2008MN01015	20080521
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IN261964 B	20140725	IN2008MN01014	20080521
IN267841 B	20150807	IN2008MN01015	20080521
IN282366 B	20170407	IN2008DN08910	20081022
US2010329963 AA	20101230	US20060091040	20061023
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US8807993 BB	20140819	US20070295468	20070402
US8951493 BB	20150210	US20060091035	20061023
US9469884 BB	20161018	US20140297492	20140605
WO07045048 A1	20070426	WO2006AU01568	20061023

WO07045050 A1	20070426	WO2006AU01573	20061023
WO07112496 A1	20071011	WO2007AU00424	20070402

Priority:

WO2007AU00424	19770402	AU20050905810	20051021	AU20060900546	20060206
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US20140297492	20140605				

Probable Assignee: CALIX LTD

Assignee(s): (std): CALIX PTY LTD ; SCEATS MARK GEOFFREY ; HORLEY CONNOR JAMES ; RICHARDSON PATRICIA ; CALIX LTD

Assignee(s): CALIX LTD102/38 REFINERY DRIVENEW SOUTH OF WALES2009PYRMONTAU ; CALIX LIMITED ; CALIX PTY LTD102/38 REFINERY DRIVENEW SOUTH WALES 2009PYRMONTAU

Inventor(s): (std): SCEATS MARK GEOFFREY ; HORLEY CONNOR JAMES ; SCEATS MARK ; HORLEY CONNOR ; RICHARDSON PATRICIA ; JAMES HORLEY CONNOR ; GEOFFREY SCEATS MARK ; CONNOR JAMES HORLEY ; MARK GEOFFREY SCEATS ; SOEATS MARK GEOFFREY

Inventor(s): MARK GEOFFREY SOEATS ; HORLEY CONNOR JAMESAU ; SCEATS MARK GEOFFREYAU

Agent(s): ALDER IP PTY LTD; SPRUSON AND FERGUSON; HALFORDS IP; FASKEN MARTINEAU DUMOULIN LLP; CURTIS PHILIP ANTHONY; KING LAWRENCE; TURNER CRAIG ROBERT; COTTRILL EMILY ELIZABETH HELEN; CARPINTERO MARIO; CRAIN CATON AND JAMES

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM 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 LI LK LR LS LT LU LV LY MA MC MD MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

7) Family number: 44990110 (WO10053381A1)

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Title: PYROLYTIC RENDERING OF ORGANIC MATERIAL

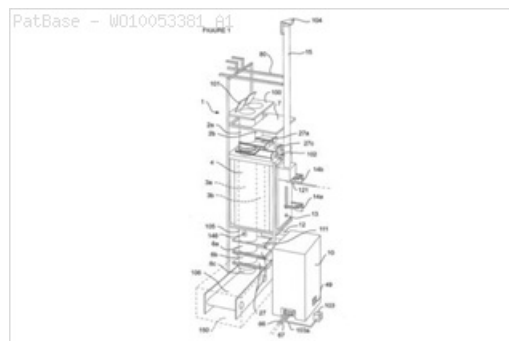
Abstract: Pyrolysis of vehicle tyres within vertically oriented, thermally conductive, elongated, and slightly flared pyrolysis chambers is facilitated with airlocks for each chamber, for excluding air from solids passing in or out. The gaseous pyrolysate is purified. Some is burnt within an external heating chamber. The remainder, and solid carbon may be sold. Substantially continuous operation involves cyclic operation of the airlocks and steady slumping of the material being pyrolysed. The pyrolysis equipment is constructed within a vertically oriented shipping container and a distillation column is inside a second. A gasometer is preferably used to store inflammable gases at low pressure.

Classifications:

International (IPC 8-9): C02F11/10 C10B1/04 C10B3/00 C10B47/02 C10B53/07 C10G1/10 F23G5/027 F23G7/12 (Advanced/Invention); C10B1/00 C10B3/00 C10B47/00 C10G1/00 F23G5/027 (Core/Invention)

CPC: Y02P20/143 F23G5/0276 C10B47/20 C10B53/07 C10G1/10 F23G5/033 F23G5/16 F23G5/24 F23G5/444 F23G5/448 F23G5/50 F23G7/12 F23G2205/18 F23G2209/281 F23G2900/70601

European: C10B47/20 C10B53/07 C10G1/10 F23G5/027C F23G5/033 F23G5/16 F23G5/24 F23G5/44B1 F23G5/44B5 F23G5/50 F23G7/12 R23G205/18 R23G209/281 R23G900/70601



Family:

Publication number	Publication date	Application number	Application date
AU2009311787 AA	20100514	AU20090311787	20091104
NZ569587 A	20110527	NZ20080569587	20081104
WO10053381 A1	20100514	WO2009NZ00238	20091104
WO10053381 A4	20100715	WO2009NZ00238	20091104

Priority:

NZ20080569587 20081104 WO2009NZ00238 20091104

Probable Assignee: HAMISH WILLIAM HAMILTON

Assignee(s): (std): CHRISTOPHER FRANCIS NEWMAN ; HAMILTON HAMISH ; HAMILTON HAMISH WILLIAM ; HAMISH WILLIAM HAMILTON ; MONCKTON ROGER JOHN ; NEWMAN CHRISTOPHER FRANCIS ; ROGER JOHN MONCKTON ; NEWMAN CHRISTOPHER ; MONCKTON ROGER

Assignee(s): TYREGONE HOLDINGS LTD

Inventor(s): (std): FRANCIS NEWMAN CHRISTOPHER ; HAMILTON HAMISH WILLIAM ; JOHN MONCKTON ROGER ; MONCKTON ROGER JOHN ; NEWMAN CHRISTOPHER FRANCIS ; WILLIAM HAMILTON HAMISH

Agent(s): WRAYS; ENSOR DONALD RIVERS

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 TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

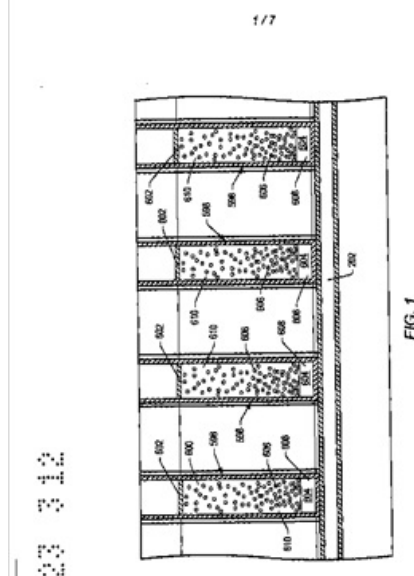
Title: SYSTEMS, METHODS, AND PROCESSES FOR USE IN TREATING SUBSURFACE FORMATIONS

Abstract: Systems, methods, and/or heaters for treating a subsurface formation are described herein. Some embodiments also generally relate to heaters that have novel components therein. Such heaters may be obtained by using the systems and methods described.

Classifications:

International (IPC 8-9): B21C37/08 B21C47/24 C09K8/592 C10G1/02 E21B10/00 E21B17/20 E21B34/04 E21B36/00 E21B36/02 E21B36/04 E21B43/14 E21B43/22 E21B43/24 E21B43/241 E21B43/243 E21B43/34 E21B47/022 E21B7/18 F23D14/32 F24J3/08 H01B3/12 H01B7/02 H01F27/06 H01F29/02 H01F29/04 H1B3/12 H1B7/02 H1F27/06 H1F29/02 H1F29/04 (Advanced/Invention); E21B36/00 E21B43/16 E21B47/02 (Core/Invention)
CPC: Y10T29/49083 E21B43/243 E21B47/02216 C10G1/02 E21B43/2401 E21B43/16 C09K8/845 C09K8/86 C10G1/008 C10G1/04 C10G1/042 E21B43/24 E21B36/04
European: E21B36/04 E21B43/243 E21B43/24B E21B47/022M

PatBase - GB2462020_B2



Family:

Publication number	Publication date	Application number	Application date
CA2684471 AA	20091016	CA20082684471	20080418
GB200917869 A0	20091125	GB20090017869	20080418
GB2462020 A1	20100127	GB20090017869	20080418
GB2462020 B2	20120808	GB20090017869	20080418
NZ581359 A	20120831	NZ20080581359	20080418

Priority:

US20070925685P 20070420 US20070999839P 20071019 WO2008US60811 20080418

Probable Assignee: SHELL OIL CO

Assignee(s): (std): SHELL INT RESEARCH ; SHELL OIL CO

Assignee(s): SHELL INTERNATIONALE RESEARCH MAATSCHAPPIJ B V ; SHELL INT RESEARCH MIJ BV ; STANECKI JOHN ; SIDDOWAY MARK ALAN ; RUDOLF RANDY ; SANDBERG CHESTER LEDLIE ; TSAI KUOCHEN ; VINEGAR HAROLD J ; SELBY BRUCE ; RYAN ROBERT CHARLES ; ZHANG ETUAN ; ABBASI FARAZ ; ANDERSON KARL GREGORY ; BASS RONALD J ; BEERS GARY LEE ; BRIGNAC JOSEPH P JR ; BURNS DAVID ; CLOMBURG LLOYD ANTHONY ; COSTELLO MICHAEL ; DAVIDSON IAN ALEXANDER ; DEN BOESTERT JOHANNES LEENDERT WILLEM CORNELIS ; GILES STEVEN PAUL ; GOODWIN CHARLES R ; HWANG H JAY ; PIERCE ROBERT ; GUIMERANS ROSALVINA ; PIERCE DENNIS ; NGUYEN SCOTT VINH ; FARMAYAN WALTER ; MACDONALD DUNCAN ; PRINCE WRIGHT ROBERT ; KARANIKAS JOHN MICHAEL ; FONSECA ERNESTO ; KIM DONG SUB ; HARRIS CHRISTOPHER KELVIN ; MANSURE ARTHUR J ; HARVY BERT ; GEDDES CAM ; MUNSHI ABDUL ; MARWEDE JOCHEN ; RENKEMA DUURT ; SHELL OIL COMPANY

Inventor(s): (std): GILES STEVEN PAUL ; GINESTRA JEAN CHARLES ; GOEL NAVAL ; GOODWIN CHARLES R ; GRIFFIN PETER TERRY ; GUIMERANS ROSALVINA ; HALE ARTHUR HERMAN ; HAMILTON PAUL TAYLOR ; HARIHARAN PERINGANDOR RAMAN ; HARRIS CHRISTOPHER KELVIN ; HARVY BERT ; HERON GOREM ; HINSON RICHARD A ; HIRSHBLOND STEPHEN PALMER ; HORTON JR JOSEPH ARNO ; HSU CHIA FU ; HWANG H ; HWANG H JAY ; COWAN KENNETH MICHAEL ; COSTELLO MICHAEL SCOTT ; COSTELLO MICHAEL ; COIT WILLIAM GEORGE ; CLOMBURG LLOYD ANTHONY ; CHRISTENSEN DEL SCOT ; CHERILLO RALPH ANTHONY ; CARL FREDERICK GORDON ; BURNS DAVID BOOTH ; BURNS DAVID ; BRIGNAC JOSEPH PHILLIP JR ; BRIGNAC JOSEPH P JR ; BRIGNAC JOSEPH P ; BRADY MICHAEL PATRICK ; BOND WILHELMUS MARIA ; BOESTERT JOHANNES LEENDERT WILLEM CORNELIS DEN ; BEERS GARY LEE ; BASS RONALD MARSHALL ; BASS RONALD J ; ANGELO CHARLES D III ; ANDERSON KARL GREGORY ; ABBASI FARAZ ; JOHN RANDY CARL ; FOWLER THOMAS DAVID ; FONSECA ERNESTO ; FARMAYAN WALTER ; FAIRBANKS MICHAEL DAVID ; GEDDES CAM ; DIAZ ZAIDA ; DEN BOESTERT JOHANNES LEENDERT WILLEM CORNELIS ; DEEG WOLFGANG FRIEDRICH JOHANN ; DAVIDSON IAN ALEXANDER ; KARANIKAS JOHN MICHAEL ; KELTNER THOMAS JOSEPH ; KIM DONG SUB ; KUHLMAN MYRON IRA ; LAMBIRTH GENE RICHARD ; MARWEDE JOCHEN ; MASON STANLEY LEROY ; MAZIASZ PHILIP JAMES ; MCKINZIE BILLY JOHN ; MENOTTI JAMES LOUIS ; LENKE ROBERT ; LI RUIJIAN ; MACDONALD DUNCAN ; MANDEMA REMCO HUGO ; MANSURE ARTHUR J ; MILLER DAVID SCOTT ; MINDERHOUD JOHANNES KORNELIS ; MO WEIJIAN ; MUNSHI ABDUL ; MUNSHI ABDUL WAHID ; MUYLLE MICHEL SERGE MARIE ; NELSON RICHARD GENE ; NGUYEN SCOTT VINH ; PAGGIO ALAN ANTHONY DEL ; PIERCE DENNIS ; PIERCE ROBERT ; PINGO ALMADA MONICA M ; PRINCE WRIGHT ROBERT ; RENKEMA DUURT ; NAIR VIJAY ; ROES AUGUSTINUS WILHELMUS MARIA ; RYAN ROBERT CHARLES ; SAMUEL ALLAN JAMES ; SANDBERG CHESTER LEDLIE ; SANTELLA MICHAEL LEONARD ; SCHNEIBEL JOACHIM HUGO ; SCHOEBER WILLEM JAN ANTOON HENRI ; SCHOEHLING LANNY ; SELBY BRUCE ; SHINGLEDECKER JOHN PAUL ; SIDDOWAY MARK ALAN ; SIKKA VINOD KUMAR ; STANECKI JOHN ;

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US2004244382 AA	20041209	US20030713899	20030912
US2005056313 AA	20050317	US20030686191	20031015
US2006064986 AA	20060330	US20050049197	20050202
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Priority:

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Probable Assignee: VAST POWER PORTFOLIO LLC

Assignee(s): (std): GINTER J LYELL ; GINTER LEGAL REPRESENTATIVE GARY ; LYELL GINTER J ; GINTER VAST CORP ; GINTER VAST CORP GARY GINTER ; VAST POWER SYSTEMS INC ; HAGEN DAVID L ; GOHEEN BILL ; MCGUIRE ALLAN ; RANKIN JANET ; HULBURT EVAN ; VAST POWER PORTFOLIO LLC ; GINTER LYELL J ; GINTER GARY ; GINTER J L ; DZH LAJELL GINTER ; FETTERS DOUGLAS

Assignee(s): GINTER DAVID JAMES ; GINTER DIAN RUTH ; DZHLAJELL GINTER ; GINTER GARY DEMONT C O HULL GROUP SUITE ; GINTER GARY DEMONT ; GINTER LYELL J FRESNO CALIF US ; GINTER J ; THANE INTIONAL ; GINTER VAST PORTFOLIO LLC C O HULL GROUP SUITE ; GINTER VAST PORTFOLIO LLC C O PARACORP ; GINTER VAST PORTFOLIO LLC ; THANE INT ; J LYELL GINTER ; GINTER VAST GARY GINTER CORP ; GINTER VAST C O MICHAEL J RAM ESQ CORP ; THANE INT INC

Inventor(s): (std): FETTERS DOUGLAS ; GINTER GARY ; GINTER LYELL J ; GOHEEN BILL ; HAGEN DAVID L ; HULBURT EVAN ; J LYELL GINTER ; JANET RANKIN ; JL GINTER ; MCGUIRE ALLAN ; RANKIN JANET ; GARY GINTER ; EVAN HULBURT ; DZHLAJELL GINTER ; DOUGLAS FETTERS ; DAVID L HAGEN ; BILL GOHEEN ; ALLAN MCGUIRE ; GINTER LYELL ; GINTER J LYELL ; GINTER LEGAL REPRESENTATIVE GARY ; GINTER J L ; DZH LAJELL GINTER

Inventor(s): J L GINTER ; GINTER J ; GINTER LYELL J FRESNO CALIF US ; LYELL J GINTER ; HAGEN DAVID

Agent(s): SPRUSON AND FERGUSON; ASPEN PHARMA PTY LTD; GRIFFITH HACK; SHAPIRO COHEN; AVENTUM IP LAW LLP; MCCARTHY TETRAULT LLP; DANIEL FREIMANN AND CO; KNOBBE MARTENS OLSON AND BEAR LLP; OSTROLENK FABER LLP

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 CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ 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 NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

Title: METHODS AND SYSTEMS FOR ENHANCING SOLID FUEL PROPERTIES

Abstract: In embodiments of the present invention improved capabilities are described for a method of cleaning a solid fuel that may provide a starting solid fuel sample data relating to one or more characteristics of a solid fuel to be treated by a solid fuel treatment facility; may provide a desired solid fuel characteristic; may compare the starting solid fuel sample data relating to one or more characteristics to the desired solid fuel characteristic to determine a solid fuel composition delta may determine an operational treatment parameter for the operation of the solid fuel treatment facility to clean the solid fuel based at least in part on the solid fuel composition delta and may monitor contaminants emitted from the solid fuel during treatment of the solid fuel and regulating the operational treatment parameter with respect thereto to create a cleaned solid fuel.

Classifications:

International (IPC 8-9): B65G15/34 C10B57/02 C10L C10L5/00 C10L5/02 C10L5/06 C10L5/10 C10L5/12 C10L5/14 C10L5/16 C10L5/26 C10L5/32 C10L5/44 C10L5/46 C10L9/00 C10L9/08 F23C1/10 G05B1/00 G05B13/00 (Advanced/Invention); C10L5/26 C10L9/00 (Advanced/Non-invention); C10B57/00 C10L5/00 C10L5/40 C10L9/00 F23C1/00 (Core/Invention); C10L (Subclass/Invention)

International (IPC 1-7): C10L5/10 C10L5/44 F23C1/10

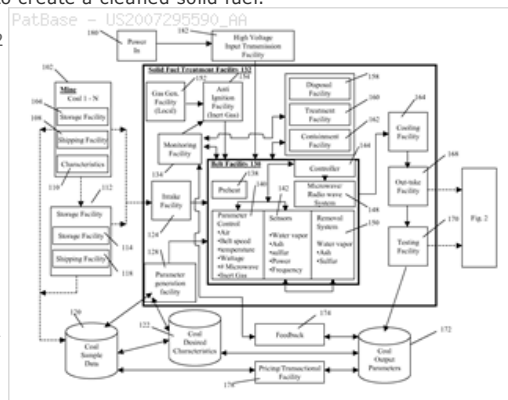
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European: C10L5/12 C10L5/14 C10L5/16 C10L5/28 C10L5/32 C10L5/36B C10L5/36D C10L5/44 C10L9/00 C10L9/08 F23K1/00 R23G900/50206 R23K201/101 R23K201/20 R23K201/505 R23K900/01001 R23K900/01002 Y02E50/10 Y02E50/30

US: 201/17 201/17P 209/11 209/11S 44/544 44/544P 44/550 44/550S 44/551 44/553 44/569 44/569P 44/577 44/577S 44/578 44/578S 44/579 44/579S 44/592 44/593 44/593S 44/596 44/608 44/620 44/626 44/904

JP F-Term: 4H015 4H015/AA10 4H015/BA08 4H015/BB01 4H015/CB01

JP F-Index: C10L5/00 C10L9/00

**Family:**

Publication number	Publication date	Application number	Application date
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AU2008310990 AA	20090416	AU20080310990	20081007
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DE602007023800 D1	20120830	DE200760023800T	20070402
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Priority:

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US20060867749P 20061129	EP20070759973 20070402	US20070695554 20070402
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WO2009US42780 20090505		

Probable Assignee: COALTEK INC

Assignee(s): (std): ATEN JED A ; BULLIS HERBIE L ; COAL TEK LLC ; COALTEK CORP ; DROZD JAMES MICHAEL ; DROZD J M ; COALTEK INC ; DROZD J MICHAEL ; WANG RU T ; GINTHER NEIL E ; WEINBERG JERRY L ; LANG CHRISTOPHER F ; DURGA MICHAEL C ; DROZD MICHAEL J ; DRUGA MICHAEL C ; LAWSON STEVEN L ; LANG FREDERICK CHRISTOPHER ; SURMA JAN M ; LANG FREDERICK C ; JY CAPITAL INVEST LLC ; DZHEJUAJ KEHPITAL INVEST EHLEHLSI ; KOULTEHK INK

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Inventor(s): (std): LANG FREDERICK C ; ATEN JED ; WEINBERG JERRY ; DURGA MICHAEL C ; DROZD MICHAEL J ; LANG CHRISTOPHER F ; DRUGA MICHAEL C ; BULLIS HERBIE L ; LAWSON STEVEN L ; LANG FREDERICK CHRISTOPHER ; SURMA JAN M ; DROZD J MICHAEL ; VAN RU T ; DZHINTER NIL EH ; EHTEN DZHED A ; VEJNBERG DZHERRI L ; DROZD DZHEJMS MAJKL ; MICHAEL DROZD J ; WEINBERG JERRY L ; DROZD J M ; MICHAEL DROZD JAMES ; ATEN JED A ; GINTHER NEIL E ; WANG RU T ; DROZD JAMES MICHAEL

Inventor(s): RU T WANG ; JERRY L WEINBERG ; JAMES MICHAEL DROZD ; NEIL E GINTHER ; JED A ATEN ; GINTHER NEIL ; WANG RU ; DROZD J ; DROZD MICHAEL JUS ; DRUGA MICHAEL CUS ; LAWSON STEVEN LUS ; SURMA JAN MUS ; BULLIS HERBIE LUS ; LANG CHRISTOPHER FUS ; LANG FREDERICK CUS ; DROZD J MICHAELUS ; ATEN JED A COVINGTON ; WEINBERG JERRY L GAINESVILLE ; DROZD JAMES MICHAEL RALEIGH ; WANG RU T CONYERS ; GINTHER NEIL E JENKS ; GINTHER NEIL EUS ; WEINBERG JERRY LUS ; ATEN JED AUS ; WANG RU TUS ; DROZD JAMES MICHAELUS ; MICHAEL C DURGA ; MICHAEL J DROZD ; STEVEN L LAWSON ; JAN M SURMA ; HERBIE L BULLIS ; CHRISTOPHER F LANG ; DRUGA MICHAEL ; LAWSON STEVEN ; SURMA JAN ; LANG CHRISTOPHER ; DROZD MICHAEL ; MICHAEL C DRUGA ; J MICHAEL DROZD ; FREDERICK C LANG ; BULLIS HERBIE ; LANG FREDERICK

Agent(s): SHELSTON IP PTY LTD ; SHELSTON IP ; A J PARK ; AJ PARK ; SMART AND BIGGAR ; MARKS AND CLERK LUXEMBOURG LLP ; NAISMITH ROBERT STEWART ; STRATEGIC PATENTS PC ; MINTZ LEVIN COHN FERRIS GLOVSKY AND POPEO PC ; MAZZARESE ROBERT A ; NORTRUP JOHN H ET AL

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 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 LI 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 PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

11) Family number: 3578223 (US5099771A)

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Title: APPARATUS AND PROCESS FOR THE INCINERATION OF WASTE PARTICLES

Abstract: Apparatus and process for the complete breaking down and incineration of tires and other difficult-to-dispose-of-waste products in an energy-efficient manner. Small particles of the waste material are directed into a furnace of novel design. Within the furnace, the particles are incinerated and thereby converted to combustion gas products. The combustion gas products exiting from the furnace are then transferred to an energy recovery/utilization means, such as a boiler. The small particles are specifically directed into a coiled ignition tube located completely within the furnace. As the particles travel in a downwardly spiraling motion through the ignition tube they come in contact with its heat-conducting interior walls. By forcing the particles to contact the interior walls, the ignition tube of the present invention leads to an efficient incineration of those particles. Everything which exits the ignition tube at a lower section of the furnace, including any residual particles and any unoxidized gases, is drawn up past the hot ignition tube and out at upper section of the furnace. In this way, the effective dwell time at high temperatures ensures that the final particulate matter is consumed within the furnace. Additionally, the furnace may be contoured so that all gases and particles exiting the ignition tube are forced to contact the hot ignition tube's external walls.

Classifications:

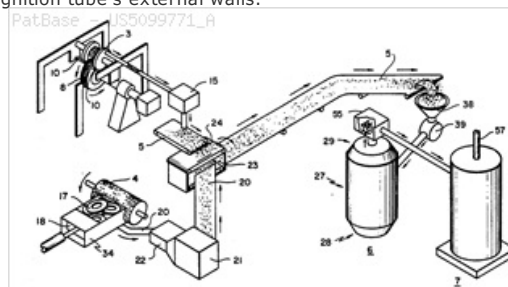
International (IPC 8-9): F23G5/12 F23G7/12 (Advanced/Invention); F23G5/08 F23G7/12 (Core/Invention)

International (IPC 1-7): F23G5/00

CPC: F23G5/12 F23G7/12 F23G2201/80 F23G2205/20 F23G2209/281 Y02P80/152

European: F23G5/12 F23G7/12 R23G201/80 R23G205/20 R23G209/281

US: 110/222 110/229 110/232 110/234 110/235 110/346 110/347



Family:

Publication number	Publication date	Application number	Application date
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US5099771 A	19920331	US19910674072	19910321
WO9216797 A1	19921001	WO1992US02375	19920320

Priority:

Probable Assignee: CLEAN INVESTMENTS LLC**Assignee(s):** (std): DISANTO SR ROCCO J ; DISANTO ROCCO J SR ; ROCCO J DISANTO SR**Assignee(s):** SCIENTIFIC COMBUSTION ENGINEERING LLC ; ROCCO J ; CLEAN FLAME ENERGY LLC ; CLEAN FLAME ENERGY LLC PO BOX ; CLEAN I NV ; CLEAN INVESTMENTS LLC ; DI NTO ROCCO SA ; DISANTO ANNA ; MONOPOLY INC ; DISANTO ROCCO JR ; DISANTO ROCCO J ; DISANTO JOHN ; GAGLIARDI SANDRA LEE ; REALI DOROTHY ; DISANTO CAROLINE ; DISANTO ROCCO**Inventor(s):** (std): DISANTO SR ROCCO J ; DISANTO ROCCO J SR**Inventor(s):** DISANTO ROCCO J ; ROCCO J DISANTO SR**Designated states:** AT AU BB BE BF BG BJ BR CA CF CG CH CI CM CS DE DK ES FI FR GA GB GN GR HU IT JP KP KR LK LU MC MG ML MN MR MW NL NO PL RO RU SD SE SN TD TG**12) Family number: 8340298 (US5112215A)**

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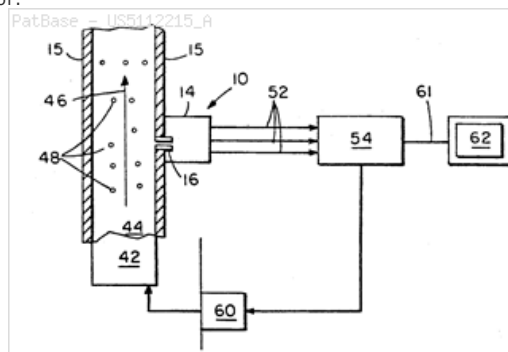
Title: Apparatus for combustion, pollution and chemical process control

Abstract: Disclosed is a system for regulating the efficiency of a combustion process by detecting radiant energy emitted from ash particles entrained in the gas stream exiting the combustion chamber of a boiler or incinerator. The intensity of selected wavelengths of light emitted from the particles is indicative of the temperature of the particles. The change in the intensities of the selected wavelengths of light, and thus of the temperature of the gas stream at the furnace exit, is monitored, and a feedback control mechanism is used to regulate one or more combustion, pollution control, or heat transfer parameters thereby maximizing the thermal efficiency of the combustion process in the boiler or incinerator.

Classifications:**International (IPC 8-9):** F23G5/50 F23N5/00

F23N5/08 (Advanced/Invention);

F23G5/50 (Advanced/Non-invention)

International (IPC 1-7): F23G5/50 F23J7/00 F23N5/00 F23N5/08**CPC:** F23N5/003 F23N5/08 F23N5/082 F23N2025/10**European:** F23N5/00B F23N5/08B R23N25/10 R23N5/08**US:** 236/15E 250/338.5 250/339.04 250/339.13 356/417 431/3 431/4 431/76**JP F-Term:** 3K005 3K005/QA01 3K005/QA06 3K005/RA03 3K005/RA10 3K005/SA12 3K029 3K062 3K062/AA24 3K062/AB01 3K062/AC01 3K062/BA02 3K062/BB01 3K062/CA03 3K062/CB08 3K062/DA01 3K062/DB13 3K062/DB27 3K062/DB28**JP F-Index:** F23G5/50/L F23G5/50/N F23N5/08/A F23N5/08/J**JP Facet:** ZAB**Family:**

Publication number	Publication date	Application number	Application date
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US5112215 A	19920512	US19910724540	19910620
US5275553 A	19940104	US19920881181	19920511
WO9300558 A1	19930107	WO1992US03929	19920511

Priority:

US19910724540 19910620

US19920881181 19920511

WO1992US03929 19920511

Probable Assignee: AMETEK INC**Assignee(s):** (std): BOVAR CORP ; PHYSICAL SCIENCES INC ; PSI ENVIRONMENTAL INSTR CORP ; SPECTRUM DIAGNOSTIX INC**Assignee(s):** PSI ENVIRONMENTAL INSTRUMENTS CORP ; SPECTRUM DIAGNOSTIX INC ANDOVER MASS US ; AMETEK INC ; BONI ARTHUR A ; PHYSICAL SCIENCE INC A OF COMMW CORP ; PHYSICAL SCIENCE INC ; PII ESU AI ENBAIRONMENTARU INSUTORUMENTSU CORP ; JOHNSON STEPHEN A ; MORENCY JOSEPH ; FRISH MICHAEL B**Inventor(s):** (std): FRISH MICHAEL B ; MORENCY JOSEPH ; JOHNSON STEPHEN A ; BONI ARTHUR A ; FRISH MICHAEL ; JOHNSON STEPHEN ; BONI ARTHUR**Inventor(s):** FURITSUSHU MITSUSERU BII ; BONI AASAA EI ; JONSON SUTEIIBUN EI ; MORENSHII JOZEFU ; MORENCY JOSEPH SALEM MA 01970 US ; MICHAEL B FRISH ; ARTHUR A BONI ; STEPHEN A JOHNSON ; JOSEPH MORENCY ; PHYSICAL SCIENCES INC**Agent(s):** DAVIES COLLISON CAVE; DAVIES COLLISON CAVE PTY LTD; RICHES MCKENZIE AND HERBERT LLP**Designated states:** AT AU BE CA CH DE DK ES FR GB GR IT JP LI LU MC NL SE

Title: Zeolite of granulates calcination in rotary more calciner - with closed spiral screw, useful for high activity esp. in oxygen purificn., by pressure swing adsorption

Abstract: Calcination of zeolitic granulates is carried out in an indirectly heated rotary calciner, which has feed and discharge equipment for solids and gases, a sealed central tube (6) extending over the entire length of the calciner and a spiral screw (5) connected closely with both the central tube and the outer rotary tube (9). USE/ADVANTAGE - The process is claimed esp. for calcination of zeolite A and zeolite X granulates. Very good contact between gas and solid can be obtd. in a narrow dwell spectrum and the granulate is freed from dust. The granulates are useful e.g. for drying and purifying gases and liquids and sepg. isomer mixts.. The process is esp. useful for continuous drying of Ca zeolite A granulate with SiO₂ binder, using a small specific amt. of gas free from CO₂, which is a highly selective granulate for enriching O₂ by a pressure swing adsorption process. It is also suitable for drying zeolite Y, ZSMS, zeolite L, chabasite, chinoptilolite, erisnite, offretite, mazzite etc.. (6pp Dwg.No.1+2/2)

Classifications:

International (IPC 8-9): B01J20/18 C01B13/02 C01B39/02 F27B7/04 F27B7/08 F27B7/16 (Advanced/Invention);

B01J20/10 C01B13/02 C01B39/00 F27B7/00 (Core/Invention)

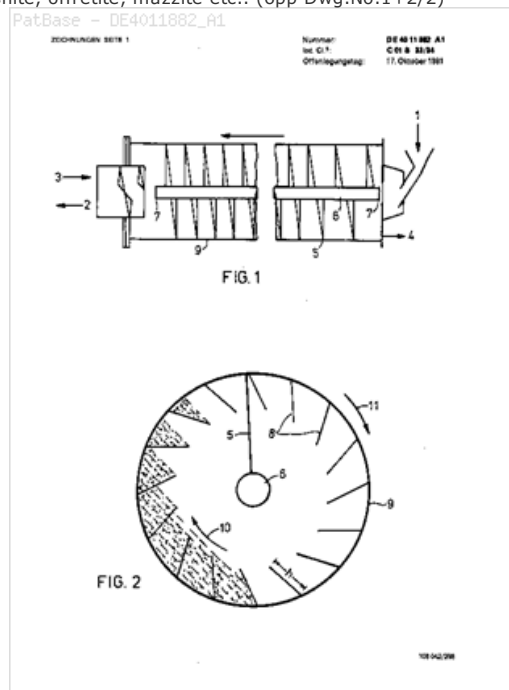
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CPC: B01J20/183 C01B13/027 C01B39/026 F27B7/04 F27B7/08

F27B7/161 F27B2007/048

European: B01J20/18B C01B13/02D4D2F C01B39/02P F27B7/04

F27B7/08 F27B7/16B R27B7/04C1



Family:

Publication number	Publication date	Application number	Application date
DE4011882 A1	19911017	DE19904011882	19900412
DE4011882 C2	19960829	DE19904011882	19900412

Priority:

DE19904011882 19900412

Probable Assignee: BAYER AG

Assignee(s): (std): BAYER AG

Assignee(s): BAYER AG 51373 LEVERKUSEN DE

Inventor(s): (std): HEISSE HANS PETER DIPL ING ; KELLER WOLFGANG DIPL ING ; MESSER DIETER DIPL CHEM DR ; NAUMANN ROLF DIPL CHEM DR ; PUPPE LOTHAR DIPL CHEM DR ; ULISCH GUENTER

Inventor(s): ULISCH GUENTER 5090 LEVERKUSEN DE ; PUPPE LOTHAR DIPL CHEM DR 5093 BURSCHEID DE ; NAUMANN ROLF DIPL CHEM DR 4150 KREFELD DE ; MESSER DIETER DIPL CHEM DR 5068 ODENTHAL DE ; KELLER WOLFGANG DIPL ING 5010 BERGHEIM DE ; HEISSE HANS PETER DIPL ING 4150 KREFELD DE

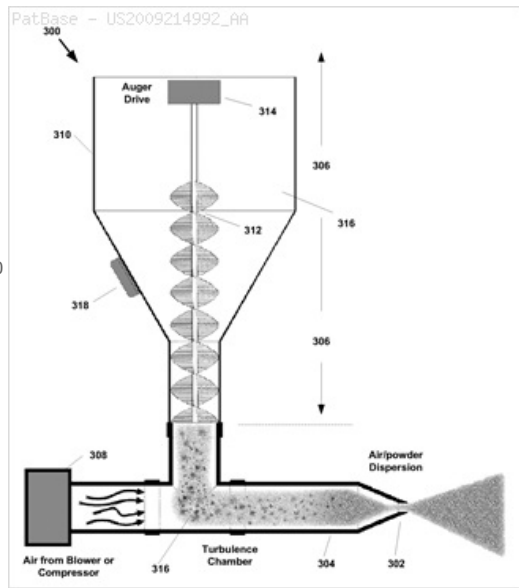
Title: METHODS OF COMBUSTION OF POWDERED FUELS AND POWDERED FUEL DISPERSIONS

Abstract: Methods of combustion include metering a substantially explosible powder into an oxidizing gas using a positive displacement powder dispersion device to suspend the powder in the gas and directing the powder in the gas to form a controlled stream of a moving explosible powder dispersion. In some embodiments, the method further includes igniting the dispersion with an ignition source to produce a stationary deflagrating combustion wave and sustaining combustion by continuing to meter the powder into the gas. In other embodiments, the method further includes adjusting a nozzle velocity of the dispersion to reflect properties of the dispersion to create a sustainable flame and igniting the dispersion to produce a stationary deflagrating wave of the dispersion. In other embodiments, the method further includes igniting the dispersion in a combustion area to produce a stationary deflagrating wave such that a conductive heat transfer from combustion brings the powder to combustion temperature.

Classifications:

International (IPC 8-9): A01G13/06 B22F1/00 C06B39/00 C06B43/00 C06B45/02 C06B47/10 C10L5/00 C10L5/44 C10L9/12 F02B13/00 F02B45/00 F02B45/02 F02B9/00 F02D19/04 F02D19/08 F02D45/00 F02M21/02 F02M21/08 F02M21/12 F03G3/00 F23B30/02 F23C1/10 F23C1/12 F23C5/08 F23C6/02 F23C6/04 F23C7/00 F23C99/00 F23D1/00 F23D1/02 F23D14/58 F23D14/60 F23D14/62 F23G5/033 F23G5/44 F23G5/46 F23G5/50 F23G7/10 F23K3/00 F23L9/06 F23M3/04 F23N1/00 F23N1/02 F23N5/00 F23R5/00 F27B17/00 (Advanced/Invention); C10L5/36 C10L5/44 F02M21/12 F02M29/02 F03G3/00 F03G7/00

F23R7/00 (Advanced/Non-invention);
B22F1/00 C06B39/00 C06B43/00 C06B45/00 C06B47/00 C10L5/00
C10L5/40 C10L9/00 F02B13/00 F02B45/00 F02B9/00 F02D19/00
F02D45/00 F02M21/00 F02M21/02 F03G3/00 F23B30/02 F23C1/00
F23C99/00 F23D1/00 F23D14/46 F23D14/48 F23K3/00 F23L9/00
F23N1/00 F23N1/02 F23N5/00 (Core/Invention)
CPC: C06D5/10 C06B43/00 C10L1/322 F23C9/003 F23K2203/201
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US: 1/1 110/261 110/261S 110/263 110/263S 110/265 110/347
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F02D45/00/376/G F02M21/08 F23C1/10 F23C1/12 F23C99/00/305
JP Facet: ZAB



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Priority:

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WO2007US24044 20071116	US20080042996P 20080407	US20080042996 20080407
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US20090466873 20090515	US20090466899 20090515	US20150688263 20150416

Probable Assignee: SUMMERHILL BIOMASS SYSTEMS INC**Assignee(s):** (std): MCKNIGHT JAMES K ; JAMES MCKNIGHT ; KEN WHITE ; MCKNIGHT JAMES ; WHITE KEN W ; MCKNIGHT JAMES T ; THORNE ROBERT E ; SUMMERHILL BIOMASS SYSTEMS INC ; WHITE KEN ; BACORN EDWARD**Assignee(s):** EDWARD BACORN**Inventor(s):** (std): WHITE KEN W ; MCKNIGHT JAMES T ; BACORN EDWARD ; MCKNIGHT JAMES K ; THORNE ROBERT E ; EDWARD BACORN**Inventor(s):** KEN W WHITE ; JAMES T MCKNIGHT ; JAMES K MCKNIGHT ; MCKNIGHT JAMES J**Agent(s):** ADAMS PLUCK; CULLENS PATENT AND TRADE MARK ATTORNEYS; SPRUSON AND FERGUSON; CULLENS PTY LTD; GOWLING LAFLEUR HENDERSON LLP; GOWLING WLG CANADA LLP; AVENTUM IP LAW LLP; GARAVELLI PAOLO; JONES GRAHAM HENRY; SAEKI NORIO; BROWN AND MICHAELS PC 400 M AND T BANK BUILDING; EDWARDS ANGELL PALMER AND DODGE LLP; BROWN AND MICHAELS PC; MARBURY LAW GROUP PLLC; LAURO PETER C; BROWN MICHAEL F ET AL**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 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 LI 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 PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW**15) Family number: 29412397** (US4699588A)

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Title: Method and apparatus for conducting a process in a pulsating environment

Abstract: An improved pulsating processing system for thermal, chemical, and physical processes which employs nonlongitudinal acoustic modes in a processing chamber to enhance the processing. An acoustically resonant processing chamber is provided as the processing vessel. A frequency tunable pulse combustor or other selectively variable frequency acoustic exciter is positioned to excite natural nonlongitudinal acoustic modes in the processing chamber. Material introduced into the processing chamber is thereby subjected to nonlongitudinal acoustic pulsations while the material is being processed. Also disclosed is an improved frequency and amplitude tunable pulse combustor which may be employed to excite the natural acoustic modes in the processing chamber. One disclosed embodiment is a system for drying a slurry of material such as kaolin. The nonlongitudinal acoustic excitations in the system result in improved moisture removal and particle heating. Also disclosed are other various modulation devices for exciting longitudinal and nonlongitudinal natural acoustic modes.

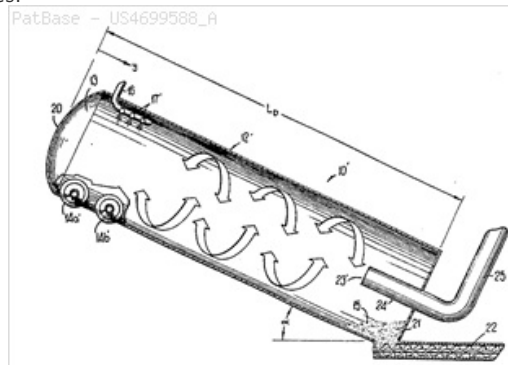
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F27D99/00 (Advanced/Invention);

B01J19/10 F23C15/00 F27D23/00 (Core/Invention)

International (IPC 1-7): F23C11/04 F27B15/00 F27D7/00**CPC:** B01J19/10 B01J2219/187 F23C15/00 F27D99/0035**European:** B01J19/10 F23C11/04 F23C15/00 F27D99/00A5A

L01J219/18F

US: 110/244 122/24 431/1 431/114 432/25 432/38 432/58 432/99**Family:**

Publication number	Publication date	Application number	Application date
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US5015171 A	19910514	US19900493490	19900314

Priority:

US19860836997 19860306	US19870075065 19870717	US19880227900 19880803
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Probable Assignee: SONOTECH INC A CORP OF GA**Assignee(s):** (std): SONOTECH INC**Assignee(s):** SONOTECH INC A CORP OF GA**Inventor(s):** (std): ZINN BEN T ; DANIEL BRADY R ; RABHAN ANDREW B**16) Family number: 1337412** (US3914090A)

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Title: Method and furnace apparatus

Abstract: Carbonaceous fuel is thermally combusted with an amount of air substantially less than that needed for complete combustion to carbon dioxide and water of all the combustible components in the fuel to produce a gaseous effluent containing a substantial proportion of carbon monoxide but little or no nitrogen oxides. Additional carbonaceous fuel is mixed with air, and at least a portion of this mixture is passed into the presence of a solid oxidation catalyst for adiabatic combustion at a temperature

above the instantaneous auto-ignition temperature of the mixture but below nitrogen-oxide-forming temperatures. The first gaseous effluent and the gases exiting from the catalyst are mixed and thermal combustion takes place in this mixture to produce a completely combusted final combustion effluent which is low in atmospheric pollutants, particularly nitrogen oxides.

Classifications:

International (IPC 8-9): B01J23/64 B01J35/04 F02C3/00 F02C3/16 F02C3/24 F02C7/22 F02M27/02 F22B31/00 F22B31/04 F23C1/08 F23C13/00 F23C6/04 F23C9/00 F23C99/00 F23D99/00 F23L9/00 F23R3/40 (Advanced/Invention); F23C13/00 (Advanced/Non-invention); B01J23/54 B01J35/00 F02C3/00 F02C3/20 F02C7/22 F02M27/00 F22B31/00 F23C1/00 F23C13/00 F23C6/00 F23C9/00 F23C99/00 F23D99/00 F23L9/00 F23R3/00 (Core/Invention); F02C (Subclass/Invention)

International (IPC 1-7): B01J1/00 B01J19/00 B01J8/04 B01J9/00 B01J9/04 C101/00 F02C1/00 F02C1/04 F02C3/00 F02C3/04 F02C3/08 F02C3/14 F02C3/16 F02C3/20 F02C7/00 F02C7/22 F02C7/26 F02C7/32 F02M27/00 F02M27/02

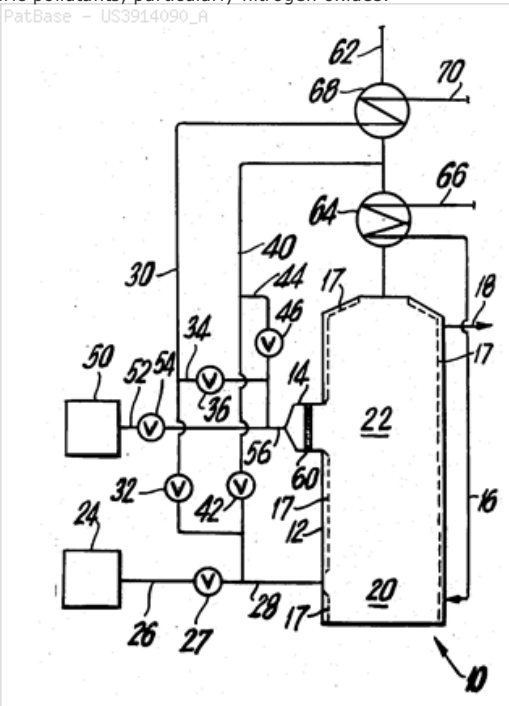
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European: 46F12 B01J23/64 B01J35/04 F02M27/02 F22B31/00 F22B31/04 F23C13/00 F23C13/08 F23C6/04 F23C6/04B1 F23C9/00 F23C99/00 F23L9/00 F23R3/40 R02D200/0606 R23C201/101 R23C700/06B R23R900/00002

US: 431/10 431/115 431/351 431/6 431/7 431/9 60/39.17 60/39.822 60/39.82C 60/723 60/735 60/736 60/737 60/746 60/776 60/777

JP F-Term: 3G104 3G111 3K065 3K065/TA01 3K065/TA04 3K065/TB01 3K065/TB11 3K065/TC01 3K065/TC02 3K065/TC03 3K065/TC08 3K065/TC10 3K065/TD04 3K065/TD05 3K065/TE01 3K065/TE04 3K065/TF02 3K065/TG01 3K065/TH14 3K065/TJ02 3K065/TJ06 3K065/TJ07 3K065/TK02 3K065/TK06 3K065/TL00 3K065/TL02 3K065/TL05 3K065/TL06 3K065/TM03 3K065/TM06 3K065/TN01 3K065/TN09 3K065/TP09 3K077 3K077/AA01 3K077/AA04 3K077/BB01 3K077/BB11 3K077/CC01 3K077/CC02 3K077/CC03 3K077/CC08 3K077/CC10 3K077/DD04 3K077/DD05 3K077/EE01 3K077/EE04 3K077/FF02 3K077/GG01 3K077/HH14 3K077/JJ02 3K077/JJ06 3K077/JJ07 3K077/KK02 3K077/KK06 3K077/LL02 3K077/LL05 3K077/LL06 3K077/MM03 3K077/MM06 3K077/NN01 3K077/NN09 3K077/PP09 3K091 3K091/AA01 3K091/AA03 3K091/BB02 3K091/BB05 3K091/BB13 3K091/BB26 3K091/BB35 3K091/CC02 3K091/CC06 3K091/CC22 3K091/CC23 3K091/DD01 3K091/DD04 3K091/FB08 3K091/FB12 3K091/FB14 3K091/FB22 3K091/FB32 3K091/FB35 3K091/FB44 3K091/FB62 3K091/FB66 3K022 3K065/TB02 3K065/TB06 3K065/TB08 3K065/TB12 3K065/TD06 3K065/TD07 3K065/TD08 3K065/TE02 3K065/TE07 3K065/TE09 3K065/TF01 3K065/TF05 3K065/TG06 3K065/TH02 3K065/TK04 3K065/TK05 3K065/TK09 3K065/TL04 3K065/TM02 3K077/BB02 3K077/BB06 3K077/BB08 3K077/BB12 3K077/DD06 3K077/DD07 3K077/DD08 3K077/EE02 3K077/EE07 3K077/EE09 3K077/FF01 3K077/FF05 3K077/GG06 3K077/HH02 3K077/KK04 3K077/KK05 3K077/KK09 3K077/LL04 3K077/MM02 3K091/BB21 3K091/BB25 3K091/CC13 3K091/DD03 3K091/DD07 3K091/FB05 3K091/FB43 3K065/TA06 3K065/TA13 3K065/TB09 3K065/TM05 3K065/TP08 3K077/AA06 3K077/AA13 3K077/BB09 3K077/MM05 3K077/PP08

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JP57047130 A2	19820317	JP19810068404	19810508
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Priority:

US19710142939 19710513	US19710164718 19710721	US19710197323 19711110
US19720252916 19720512	BE19720792871 19721215	BE19720792872 19721215
US19730358411 19730508	US19740463436 19740424	US19740513139 19741008
US19750538211 19750102	US19750644873 19751229	AU19790047972 19790611

Probable Assignee: ENGELHARD MIN AND CHEM

Assignee(s): (std): ENGELHARD CORP ; ENGELHARD MIN AND CHEM ; ENGELHARD MINERALS AND CHEMICALT ; PFEFFERLE WILLIAM C

Assignee(s): ENGERUHAATO MINERARUZU ANDO CHEM CORP ; ENGELHART MINERALS AND CHEM CORP ; ENGLHARD MINERALS CHEMICAL CORP ; ENGELHARD MINERALS YAND CHEIMCALS CORP ; ENGELHARD MINERALS AND CHEMICALT CORP ; ENGELHARD MINERALS AND CHEMICALS CORP MURRAY HILL N J V ST A ; ENGELHARD MINERALS CHEMICALS COR US ; ENGELHARD MINERALS CHEMICALS COR ; ENGELHARD MINERALS CHEMI ; ENGELHARD MINERALS CORP ; ENGELHARD MINERALS CHEMICALS CORP ; ENGELHARD MINERALS AND CHEIMCALS CORP ; ENGELHARD MINERALS AND CHEM CORP ; ENGELHARD MINERALS AND CHEMICAL CO ; ENGELHARD MINERALS AND CHEMICAL CORP ; ENGELHARD MINERALS AND CHEMICALS CORP ; ENGELHARD MINERALS AND CHEMICALS CORP 07974 MURRAY HILL N J US ; ENGELHARD MINERALS AND CHEMICALS CORP 430 MOUNTA ; ENGELHARD MINERALS AND CHEMICALS CORP 430 MOUNTAIN AVENUE MURRAY HILL NEW JERSEY E U A

Inventor(s): (std): C PFEFFERLE WILLIAM ; PFEFFERLE W ; PFEFFERLE W C ; PFEFFERLE WILLIAM C ; PREFFERLE W C ; UIRIAMU SHII PUFUEFUAARU

Inventor(s): W C PFEFFERLE ; W C PREFFERLE ; WC PFEFFERLE ; WILLIAM C PFEFFERLE

Agent(s): GRIFFITH HACK; CLEMENT HACK AND CO

17) Family number: 31454432 (US4056772A)

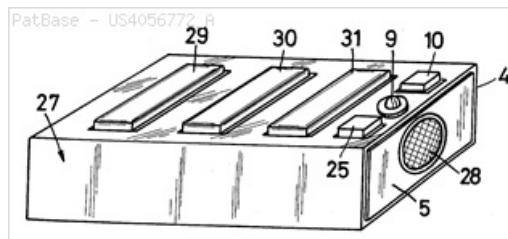
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Title: Ion detector

Abstract: An ion detector of simple construction and ease of operation comprising a space charge detector having a sensing electrode which detects the presence of a space charge by the charging of the sensing electrode, an evaluating circuit contained in a housing bearing the sensing electrode in the form of a surface electrode, and indicator means for indicating the presence or absence of ions depending on the charge on the sensing electrode.

Classifications:

International (IPC 8-9): B01D47/10 B01D53/02 B01D53/06 B01D53/10 B01D53/14 B01D53/18 B01D53/34 B01D53/52 B01D53/60 B01D53/62 B01D53/72 B01D53/74 B01J20/04 B01J20/06 B01J20/32 B01J8/18 C01F11/46 C10B47/28 C10B53/00 C10J3/84 C10K1/02 C10K1/06 C10K1/16 C10K1/18 C10K1/20 F23G5/00 F23G5/027 F23J15/00 G01N27/60 G01N27/62 G01N27/66 (Advanced/Invention); B01D47/00 B01D53/02 B01D53/06 B01D53/14 B01D53/18 B01D53/34 B01D53/46 B01D53/48 B01D53/60 B01D53/62 B01D53/74 B01J20/04 B01J20/06 B01J20/30 B01J8/18 C01F11/00 C10B47/00 C10B53/00 C10J3/00 C10K1/00 F23G5/00 F23G5/027 F23J15/00 G01N27/60 G01N27/62 G01N27/64 (Core/Invention)



International (IPC 1-7): B01D47/06 B01D47/10 B01D53/00 B01D53/02 B01D53/06 B01D53/10 B01D53/14 B01D53/16 B01D53/18 B01D53/34 B01D57/00 B01J1/22 B01J20/16 B01J8/06 C01F11/46 C10J3/00 C10K1/02 C10K1/08 C10K1/16 C10K1/18 C10K1/20 C10K1/32 F23J15/00 G01N27/00 G01N27/62 G01N27/70 G01R31/02

CPC: G01N27/60 G01N27/62 G01N27/66 B01D53/62 F23G5/0273 C10B47/28 C10G49/007 Y10S423/18 B01J20/106 B01J20/12 B01J20/28004 B01J20/3085 B01J20/3204 B01J20/3236 B01J2220/42 B01J2220/4825 B01J2220/56 B01J20/041 B01D53/34 B01J20/0229 B01J20/06 C10J3/00 C10J3/78 C10J2300/093 C10J2300/1861 C10J2300/1884 C10J2300/1892 B01D53/52 B01D53/72 C10J3/20 C10J2300/0946 C10J2300/0996 C10J2300/1671 C10J3/84 C10K1/02 C10K1/18 C10K1/20 Y02P20/124 Y02A50/2344 C10B53/00 B01D53/02 B01D53/60 F23G2201/301 F23G2201/303

European: B01D53/02 B01D53/34 B01D53/52 B01D53/60 B01D53/62 B01D53/72 B01J20/02B12B B01J20/04 B01J20/04B B01J20/06 B01J20/32 B01J20/32F4 C10B47/28 C10B53/00 C10G49/00H C10J3/84 C10K1/02 C10K1/18 C10K1/20 F23G5/027B G01N27/60 G01N27/62 G01N27/66 L01J20/04B R23G201/301 R23G201/303

US: 110/242 110/245 201/2.5 201/25 201/4 252/191 252/192 324/133 324/72 340/565 340/657 422/176 422/177 423/210 423/215.5 423/230 423/231 423/236 423/239.1 423/240R 423/240S 423/242.1 423/244.01 423/244.02 423/245.1 423/DIG.18 48/197R 48/210 502/405 502/407 55/474 55/479 55/77 95/108 95/129 95/136 95/137 95/189 95/193 96/150

JP F-Term: 4H060 4H060/AA01 4H060/BB22 4H060/BB23 4H060/BB24 4H060/CC03 4H060/CC15 4H060/DD12 4H060/DD23 4H060/DD24 4H060/FF03 4H060/FF04 4H060/FF06 4H060/GG01 2G041 2G041/CA04 2G041/EA05 2G041/JA01 2G041/LA20 3K062 3K070 3K070/DA02 3K070/DA03 3K070/DA05 3K070/DA07 3K070/DA15 3K070/DA16 3K070/DA17 3K070/DA18 3K070/DA24 3K070/DA29 3K070/DA32 3K070/DA39 3K070/DA56 3K070/DA64 3K070/DA73 3K070/DA83 4D002 4D002/AA02 4D002/AA03 4D002/AA12 4D002/BA03 4D002/BA04 4D002/BA05 4D002/CA11 4D002/DA03 4D002/DA05 4D002/DA11 4D002/DA12 4D002/DA16 4D002/DA22 4D002/DA38 4D002/DA41 4D002/DA46 4D002/DA47 4D002/DA52 4D002/EA08 4D002/EA11 4D002/GA01 4D002/GB03 4D002/GB04 4D002/GB12 4D002/HA01 4D012 4D012/CA07 4D012/CA12 4D012/CA15 4D012/CA16 4D012/CC13 4D012/CD04 4D012/CE03 4D012/CF04 4D012/CF10 4D012/CG05 4D012/CH01 4D020 4D020/AA04 4D020/AA05 4D020/AA06 4D020/BA02 4D020/BA08 4D020/BB01 4D020/BC01 4D020/BC05 4D020/CA08 4D020/CC01 4D020/CD02 4D020/CD03 4D032 4D032/CA10 4G070 4G070/AA01 4G070/AB10 4G070/BA02 4G070/BB31 4G070/CA07 4G070/CA13 4G070/CA17 4G070/CA26 4G070/CB11 4G070/CB17 4G070/CB18 4G070/CB19 4G070/DA21 4G076 4G076/AA14 4G076/AB02 4G076/AB03 4G076/AB06 4G076/AB08 4G076/AB09 4G076/AB28 4G076/BA09 4G076/BA11 4G076/BB01 4G076/BC05 4G076/BC07 4G076/BC10 4G076/BD02 4G076/BH01

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Priority:

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Probable Assignee: HOLTER PATENTVERWERT

Assignee(s): (std): BERCKHEIM CONSTANTIN GRAF VON 6940 WEINHEIM ; BERCKHEIM GRAF VON ; CONSTANTIN GRAF VON BERCKHEIM ; HOELTER H ; HOELTER HEINZ ; GRESCH HEINZ ; HEINZ HOELTER TE GLADBECK BONDSREPUBLIEK DUTSLAND ; CONSTANTIN GRAF VON BERCKHEIM TE WEINHEIM BONDSREP ; BERCKHEIM CONSTANTIN GRAF VON ; BERCKHEIM C G V ; IGLBUESCHER HEINRICH ; VON BERCKHEIM CONSTANTIN G ; KONSUTANTEIN GURAAFU FUON BERUKUHAIMU ; VON BERCKHEIM C ; VON BERCKHEIM C G ; VON BERCKHEIM CONSTANTIN GRAF ; HOLTER PATENTVERWERT

Assignee(s): VON BERCKHEIM CG ; IGLBUSCHER HEINRICH ; HOLTER H ; HOLTER GESELLSCHAFT FUR PATENTVERWERTUNGSVERFAHREN MBH ; HOELTER HEINZ 4390 GLADBECK ; HOELTER HEINZ DIPL ING ; HOELTER HEINZ DIPL ING 4390 GLADBECK DE ; HOLTER GESELLSCHAFT FUR PATENTVERWERTUNGSVERFAHREN ; HOLTER GES FUR ; HOLTER GES FUR PATENTVERWERTUNGSVERFAHREN MBH ; BERCKHEIM CONSTANTIN GRAF VON ; HEINZ HOLTER ; GRAF VON BERCKHEIM CONSTANTIN ; CONSTANTIN GRAF VON BERCKHEIM TE WEINHEIM BONDSREPUBLIEK DUTSLAND ; HOLTER HEINZ ; HEINZ HOELTER ; CONSTANTIN GRAF VON BERCKHEIM TE WEINHEIM

Inventor(s): (std): HOELTER HEINZ GLADBECK ; IGELSBUESCHER HEINRICH ; HOELTER HEINZ DIPL ING ; GRESCH HEINRICH ; IGLBYSCHER H ; HOELTER H ; IGLBUESCHER H ; BERCKHEIM C G V ; VON BERCKHEIM CONSTANTIN GRAF ; HAINTSU GURESHIYU ; HAINRITSUHI IGERUBIYUTSUSHIYAA ; HAINTSU GUREESHU ; HAINRITSUHI IGERUBIYUTSUSHAA ; GRAF VON BERCKHEIM CONSTANTIN ; VON BERCKHEIM C ; H HOLTER ; H IGLBUSCHER ; H GRESCH ; BERCKHEIM CONSTANTIN GRAF VON ; CONSTANTIN GRAF VON BERCKHEIM ; 2H GRESCH ; HEINZ HOLTER ; HEINRICH IGLBUESCHER ; HEINZ GRESCH ; 1H HOLTER ; HEINZ HOELTER ; HAINRITSUHI IGERUBIYUTSUSHIYAA ; 3H IGLBUSCHER ; KONSUTANTEIN GURAAFU FUON BERUKUHAIMU ; HEINRICH IGLBUSCHER ; HOLTER HEINZ ; GRESCH HEINZ ; IGLBUSCHER HEINRICH ; HOLTER H ; GRESCH H ; IGLBUSCHER H ; VON BERCKHEIM CONSTANTIN G ; HOELTER HEINZ ; IGLBUESCHER HEINRICH ; HAINRITSUHI IGERUBIYUTSUSHIYAA ; HAINTSU GURESHIYU ; HAINTSU HERUTAA ; KONSUTANTEIN GURAAFU FUON BERU

Inventor(s): 2 H GRESCH ; 3 H IGLBUSCHER ; 1 H HOLTER ; 4390 GLADBECK ; IGLBUESCHER HEINRICH 4390 GLADBECK DE ; HOELTER HEINZ 4390 GLADBECK DE ; GRESCH HEINZ 4600 DORTMUND DE ; HOELTER HEINZ DIPL ING 4390 GLADBECK DE ; HOLTER H GERSCH H IGLBUSCHER H

Agent(s): DM; DAVIES COLLISON CAVE PTY LTD

18) Family number: 56775436 (US2015343501A)

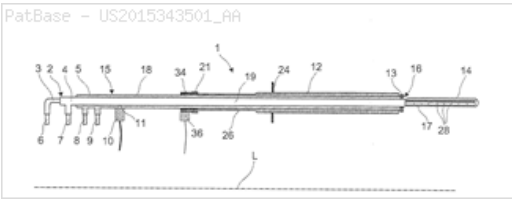
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Title: DEVICE AND METHOD FOR CLEANING COMBUSTION DEVICES

Abstract: A cleaning device for removing deposits in receptacles by way of blasting technology includes a cleaning lance with a grip-side and with a cleaning-side end section, on which a flexible container envelope forming a receiving space can be attached. The cleaning lance includes a feed tube with a container connection device that is arranged on the cleaning-side end section and is for feeding the explosive mixture or its starting components, to the container envelope, as well as a protective tube with a receiving space for a container envelope for the propose of shielding the container envelope to the outside. The protective tube is displaceably arranged along the longitudinal axis of the cleaning lance relative to the feed tube from a first position, in which the container envelope is shielded by the protective tube, into a second position in which the container envelope projects out through the protective tube.

Classifications:

International (IPC 8-9): B08B7/00 B08B9/00 B08B9/08 F23J3/00 F23J3/02 F27D25/00 F28G7/00 (Advanced/Invention); F28G7/00 (Advanced/Non-invention)
CPC: B08B9/08 B08B7/0007 F23J3/02 F27D25/006 F28G7/005
US: 134/166R 134/17



Family:

Publication number	Publication date	Application number	Application date
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DE502013005348 D1	20161222	DE201350005348T	20131217
EP2936026 A1	20151028	EP20130811345	20131217
EP2936026 B1	20161109	EP20130811345	20131217
ES2614786 T3	20170601	ES20130811345T	20131217
US2015343501 AA	20151203	US20130653133	20131217
US9636717 BB	20170502	US20130653133	20131217
WO14094190 A1	20140626	WO2013CH00225	20131217

Priority:

CH20120002911 20121220 EP20130811345 20131217 WO2013CH00225 20131217

Probable Assignee: BANG AND CLEAN GMBH

Assignee(s): (std): BANG AND CLEAN GMBH

Inventor(s): (std): BUERGIN MARKUS ; FLURY RAINER

Inventor(s): RAINER FLURY ; MARKUS BUERGIN

Agent(s): FREI PATENT ATTORNEYS; DE ELZABURU ALBERTO; RANKIN HILL AND CLARK LLP; FREI PATENTANWALTSBUERO AG

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 LI 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: 6275440 (US4748010A)

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Title: ENERGY CONSERVING LIMESTONE CALCINING SYSTEM

Abstract: Energy conserving limestone calcining system, including a process and apparatus in which in a first step or kiln zone limestone is heated, e.g., at 1700 DEG -2100 DEG F., sufficiently to achieve more than only about 50 or 60 percent, e.g., 75 percent, partial conversion thereof to calcium oxide and carbon dioxide and to form a partially calcined hot mass containing sufficient retained heat for substantially completing the conversion of the remaining unconverted limestone therein, and thereafter in a second step or separate vacuum chamber zone substantially completing the conversion of the limestone in the hot mass to calcium oxide and carbon dioxide by such retained heat while subjecting the partially calcined hot mass to a vacuum sufficiently to remove substantially completely the resultant carbon dioxide and for a duration sufficient to achieve such substantially complete conversion of the limestone and thereby provide a substantially completely calcined hot mass, the apparatus including a closable calcining vacuum chamber separate from and adjacent the discharge outlet of a lime kiln and arranged for receiving therefrom the partially calcined hot mass for completing the conversion of the limestone to calcium oxide and carbon dioxide and for applying a vacuum thereto for removing the carbon dioxide, and a heat retaining hood operatively enclosing the kiln discharge outlet and the vacuum chamber for minimizing heat loss from the hot mass in the vicinity of such discharge outlet and in the vacuum chamber.

Classifications:

International (IPC 8-9): C04B2/10 F27B19/00

F27B7/38 (Advanced/Invention);

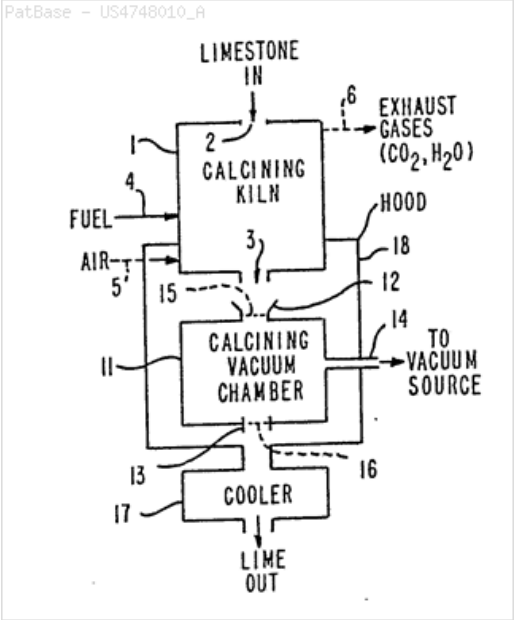
C04B2/00 F27B19/00 F27B7/20 (Core/Invention)

International (IPC 1-7): C01F11/06 C04B2/10 F27B19/00

CPC: Y02P40/42 C04B2/10 F27B7/383 F27B19/00

European: C04B2/10 F27B19/00 F27B7/38B

US: 423/175 423/176 423/177 423/415.1 423/415R 423/438 423/637



Family:

Publication number	Publication date	Application number	Application date
EP0196176 A1	19861001	EP19860301629	19860307
US4748010 A	19880531	US19850710157	19850311

Priority:

US19850710157 19850311

Probable Assignee: CHEMSTAR INC

Assignee(s): (std): CHEMSTAR INC ; FLINTKOTE CO

Assignee(s): FLINTKOTE EMBERCADERO CENTER SAN FRANCISCO CA A CO ; CHEMSTAR INC 901 MARINER'S ISLAND BLVD STE 425 SAN MATEO CA 94404 A CORP OF DE ; FLINTKOTE EMBERCADERO CENTER SAN FRANCISCO CA A CORP OF DE CORP ; CHEMSTAR INC 901 MARINER S ISLAND BLVD STE 425 SAN ; CHEMSTAR INC 901 MARINER S ISLAND BLVD STE 425 SAN MATEO CA 94404 A CORP OF DE ; FLINTKOTE CORP

Inventor(s): (std): WALKER DANIEL D

Designated states: AT BE CH DE FR GB IT LI LU NL SE

20) Family number: 8725464 (US5630470A)

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Title: CERAMIC HEAT EXCHANGER SYSTEM

Abstract: Disclosed is a high temperature heat recovery system having a unique high temperature heat exchanger made of refractory and ceramic materials which can operate in gas streams of up to about 1,500 DEG C.

Classifications:

International (IPC 8-9): F27D17/00 F28F21/04 F28F9/02

F28F9/06 (Advanced/Invention);

F28F21/00 F28F9/02 F28F9/04 (Core/Invention)

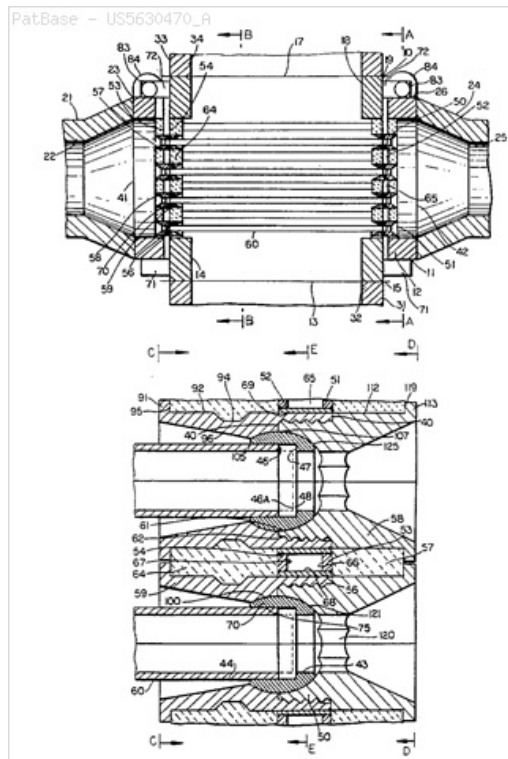
International (IPC 1-7): F16L15/02 F27D17/00 F28F21/04 F28F9/02

F28F9/04 F28F9/06

CPC: F28F9/0229 F28F9/06 F28F21/04 Y10S165/052

European: F28F21/04 F28F9/02C F28F9/06

US: 165/178 165/82 165/DIG.52 285/165

**Family:**

Publication number	Publication date	Application number	Application date
AU199655460 A1	19961030	AU19960055460	19960409
CA2218042 AA	19971010	CA19962218042	19960409
EP0817949 A1	19980114	EP19960912760	19960409
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WO9632617 A1	19961017	WO1996US05173	19960409

Priority:

US19950422097 19950414 WO1996US05173 19960409

Probable Assignee: TURBOTAK TECHNOLOGIES INC**Assignee(s):** (std): SONIC ENVIRONMENTAL SYSTEMS IN ; TURBOSONIC TECHNOLOGIES INC**Assignee(s):** TURBOTAK TECHNOLOGIES INC ; SONIC ENVIRONMENTAL SYSTEMS INC ; LOCKWOOD HANFORD N ; NATWEST BANK NA**Inventor(s):** (std): LOCKWOOD HANFORD N ; LOCKWOOD JR HANFORD N ; LOCKWOOD HANFORD N JR**Inventor(s):** HANFORD N LOCKWOOD ; HANFORD N LOCKWOOD JR**Agent(s):** SMART AND BIGGAR**Designated states:** AT AU BE BR CA CH CN DE DK ES FI FR GB GR IE IT JP LU MC MX NL NO PT SE**21) Family number: 49554486** (US2012067257A)

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Title: A LATERAL TRANSFER SYSTEM

Abstract: A modular lateral transfer system for use in a horizontally oriented processing chamber is provided. Each module has the ability to deliver process gas in addition to moving the reactant material through the horizontally oriented processing chamber. The modular design enables the operator to remove and replace a module of the system, thereby substantially minimizing the downtime of the chamber required during servicing.

Classifications:

International (IPC 8-9): B01J B01J19/00 B01J19/08 B01J4/00 B09B3/00 C10B C10B53/00 C10B7/00 C10J C10J3/00 C10J3/20 C10J3/40 C10J3/46 C10J3/72 C10K1/02 F23G5/027 F23G5/08 F23G5/46 F23G5/50 F23H11/10 F23H7/00 F23H7/08 F27B9/04 F27B9/26 F27D F27D15/02 F27D3/12 F27D3/16 (Advanced/Invention);

B09B3/00 C10B53/00 C10J3/00 (Core/Invention);

B01J C10B C10J F27D (Subclass/Invention)

International (IPC 1-7): B01J4/00 F27D3/12 F27D3/16

CPC: C10J3/18 C10J2300/0956 C10J2300/1869 C10J2300/1884

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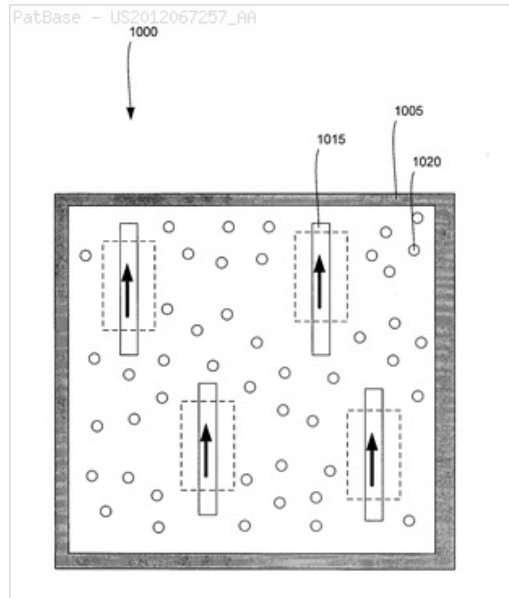
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F27D15/0213 F27D3/12 F27D3/16

European: C10B7/00 C10J3/00 C10J3/20 C10K1/02 C10K1/02F
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F23H11/10 F23H7/08/Z F27B9/04 F27B9/26



Family:

Publication number	Publication date	Application number	Application date
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ZA201206012 A	20130529	ZA20120006012	20120810

Priority:

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WO2011CA50123 20110301 US20110263326 20110301 US20110263330 20110301
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Probable Assignee: PLASCO ENERGY GROUP INC

Assignee(s): (std): BACON MARC ; PLASCOENERGY IP HOLDINGS S L ; PLASCOENERGY IP HOLDINGS S L BILBAO SCHAFFHAUSEN BRANCH ; PLASCO ENERGY GROUP INC ; TSANGARIS ANDREAS ; PLASCOENERGY IP HOLDINGS SLB

Assignee(s): TSANGARIS ANDREAS248 MADHU CRESCENTOTTAWAO1K2C 4J3CA ; NORTH SHORE POWER GROUP INC ; PLASCOENERGY IP HOLDINGS SL ; PLASCO ENERGY GROUP INC400 - 1000 INNOVATION DRIVEKANATAO1K2K 3E7CA ; GRAVELLE ROBERT A701 ALMA STREETCORNWALLO1K6J 5C8CA ; PLASCOENERGY IP HOLDINGS SL BILBAO SCHAFFHAUSEN ; PLASCO CONVERSION TECHNOLOGIES INC ; GRAVELLE ROBERT A ; PLASCOENERGY IP HOLDINGS ; PLASCOENERGY IP HOLDINGS SL BILBAO SCHAFFHAUSEN BRANCH ; BACON MARC72 HARTSMERE DR.STITTSVILLEO1K2S 2B7CA ; CANADIAN WATER PROJECTS INC ; FEASBY DOUGLAS MICHAEL ; FEASBY DOUGLAS MICHAEL5 HIGHVIEW COURTSHERWOOD PARKA1T8A 5K8CA

Inventor(s): (std): FESBY DOUGLAS MICHAEL ; ROBERT A GRAVELLE A ; DOUGLAS MICHAEL PHISBY ; ROBERT A GRAVELLE ; DOUGLAS MICHAEL FEASBY ; MARC BACON ; ANDREAS TSANGARIS ; MICHAEL FEASBY DOUGLAS ; FEASBY DOUGLAS MICHAEL ; GRAVELLE ROBERT A ; TSANGARIS ANDREAS ; BACON MARC

Inventor(s): BACON MARC72 HARTSMERE DR.STITTSVILLEO1K2S 2B7CA ; TSANGARIS ANDREAS248 MADHU CRESCENTOTTAWAO1K2C 4J3CA ; GRAVELLE ROBERT A701 ALMA STREETCORNWALLO1K6J 5C8CA ; FEASBY DOUGLAS MICHAEL5 HIGHVIEW COURTSHERWOOD PARKA1T8A 5K8CA

Agent(s): LESICAR MURRAY TRENT0; LESICAR MAYNARD ANDREWS PTY LTD; MBM INTELLECTUAL PROPERTY LAW LLP; BOSCH JEHLE PATENTANWALTSGESELLSCHAFT MBH; CLEGG RICHARD IAN; CHAN TANG AND KWOK

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 LI 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

22) Family number: 29448490 (US2003150718A)

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Title: HYDROGEN GENERATOR FOR FUEL CELL OPERATION

Abstract: The invention is a hydrogen generator for supplying hydrogen to the anode of a fuel cell and electrons to the fuel cell electrical circuit. The hydrogen generator employs a consumable electrode comprising an alkali metal which is brought into contact with an aqueous solution of its hydroxide liberating hydrogen. The hydrogen generator operates as an alkaline cell electrode emersed in the electrolyte that is continuously being formed by the oxidation of the alkali metal within the electrode by its reaction in the electrolyte with the cycled water produced at the cathode of the fuel cell. The current flow within the hydrogen generator internal circuit of the reaction chamber is approximately equivalent to the feed rate of the consumable electrode into the electrolyte and the quantity of hydrogen formed is proportional to the equivalent weight of the water reacted.

Classifications:

International (IPC 8-9): A62C31/00 B01D47/00 B01D47/06 B01D50/00 B01D53/14 B01D53/18 B01D53/34 B01D53/62 B01J19/08 B01J4/02 B01J7/02 B05B7/04 C01B21/12 C01B3/08 C01C3/14 C25B1/02 F01N3/00 F23D11/10 F23J11/00 H01F5/02 H01F7/06 H01M2/14 H01M8/06 H03K9/00 H03M13/03 H04B10/00 H04B10/04 H04B10/08 H04B10/13 H04J14/00 H04L1/00 H04L25/49 H04L27/04 H04L27/06 H04L27/20 H04L27/26 H04L27/36 H04L27/38 (Advanced/Invention); H04J14/02 H04L1/00 (Advanced/Non-invention); A62C31/00 B01D47/00 B01D47/06 B01D50/00 B01D53/14 B01D53/18 B01D53/34 B01D53/62 B01J4/02 B01J7/00 B05B7/04 C01B21/00 C01B3/00 C01C3/00 F01N3/00 F23D11/10 F23J11/00 H01F7/06 H01M8/06 H04L1/00 H04L27/26 (Core/Invention); H04L1/00 (Core/Non-invention)

International (IPC 1-7): B23P19/00 C01B3/08 C25B1/02 C25C7/02 G02F2/00 H01M10/00 H01M2/14 H01M2/16 H01M2/18 H01M6/00 H01M8/06 H01M8/18 H03C3/00 H04B10/00 H04B10/12 H04K1/10 H04L1/00 H04L27/04 H04L27/26 H04L27/28

CPC: B01D53/323 H04L27/2697 H04B10/548 H04L1/006 H04B10/2575 H04B10/2581 H04B10/504 H04B10/5055 H04B10/541 H04J14/02 H04L25/0204 H04L25/0224 H04L27/34 H04L1/0059 H04L1/0041 H04L1/0045 H04L5/0005 H04L5/0046 H04L27/2637 H04L27/2653 Y10T29/49071 B01D53/32 B01D2257/504 Y02P70/34 B01D49/006 B01D53/1475 B01D53/62 Y02C10/04 Y02C10/06 H01F5/00 H01F41/071 C01B3/08 B01J4/02 B01J7/02 C01B2203/066 H01M8/065 Y02E60/36

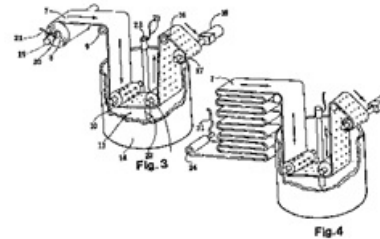
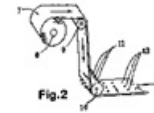
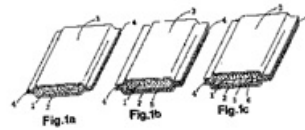
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422/186.040P 423/365 429/19 429/27 429/28 429/34 429/36 429/38
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PatBase - US2003150718_AA

Patent Application Publication Aug. 14, 2003 Sheet 1 of 3 US 2003/0150718 A1



Family:

Publication number	Publication date	Application number	Application date
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Priority:

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Probable Assignee: AVAGO TECHNOLOGIES LTD**Assignee(s):** (std): AGAZZI OSCAR E ; BROADCOM CORP ; MCWHORTER EDWARD MILTON ; MCWHORTER EDWARD M ; MEWHORTER EDWARD M**Assignee(s):** AVAGO TECHNOLOGIES GENERAL IP SINGAPORE PTE LTD ; AVAGO TECHNOLOGIES INT SALES PTE LTD ; AVAGO TECHNOLOGIES LTD ; BANK OF AMERICA NA COLLATERAL AGENT AS**Inventor(s):** (std): MCWHORTER EDWARD M ; AGAZZI OSCAR E ; AGAZZI OSCAR ; MEWHORTER EDWARD M ; MCWHORTER EDWARD MILTON**Inventor(s):** MEWHORTER EDWARD ; MCWHORTER EDWARD ; OSCAR E AGAZZI ; EDWARD M MCWHORTER ; MEWHORTER EDWARD MILTON**Agent(s):** OYEN WIGGS GREEN AND MUTALA LLP; JEHL VOLKER ARMIN; EDWARD M MCWHORTER; EDWARD M MEWHORTER; MCANDREWS HELD AND MALLOY LTD; THOMAS KAYDEN HORSTEMEYER AND RISLEY LLP**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 CO CR CU CY CZ DE DK DM DZ EC EE ES FI FR GA GB GD GE GH GM GN GQ 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 OM PH PL PT RO RU SC SD SE SG SI SK SL SN SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW**23) Family number: 29315519 (US4377704A)**

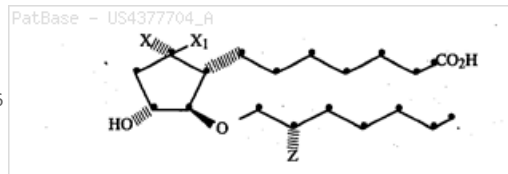
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Title: HETERO-PROSTAGLANDIN DERIVATIVES AND PROCESSES FOR PREPARING THEM**Abstract:** Prostanoid acid derivatives represented by the general formula: in which X represents hydrogen or hydroxy, X1 represents hydrogen or X and X1, when they are taken together with the carbon atom to which they are attached, represent a carbonyl group and Z represents hydrogen or hydroxy and pharmaceutically acceptable alkali metal salts thereof. They can be used as bronchodilators and/or inhibitors of blood-platelet aggregation.**Classifications:****International (IPC 8-9):** A61K31/557 A61K31/5575 A61P43/00 C07C35/06 C07C401/00 C07C405/00 C07C43/196 C07C45/00 C07C45/29 C07C45/60 C07C45/66 C07C47/00 C07C47/277 C07C47/40 C07C47/47 C07C5/00 C07C67/00 C07D317/14 C07D319/00 C07D319/06 C07D319/08 C07D339/00 C07D339/06 C07D407/08 C07D409/00 C07D409/02 C07D409/04 C07D409/08 C07D495/10 C12M1/02 E04F17/02 F16L59/12 F16L59/18 F16L9/22 F23J13/02 (Advanced/Invention); A61K31/557 C07C5/00 C07D319/04 C07D339/06 (Advanced/Non-invention);

A61K31/557 A61P43/00 C07C35/00 C07C401/00 C07C405/00 C07C43/00 C07C45/00 C07C47/00 C07C47/20 C07C47/38 C07C5/00 C07C67/00 C07D317/00 C07D319/00 C07D339/00 C07D407/00 C07D409/00 C07D495/00 E04F17/00 F16L59/00 F16L59/12 F23J13/00 (Core/Invention); A61K31/557 C07D319/00 C07D339/00 (Core/Non-invention); C07C (Subclass/Invention)

International (IPC 1-7): A61K/A A61K31/19 A61K31/335 A61K31/557 A61K31/5575 B01F5/12 C01G C02F3/16 C07C149/26 C07C177/00 C07C35/06 C07C405/00 C07C43/184 C07C43/196 C07C45/29 C07C45/60 C07C45/61 C07C45/66 C07C47/00 C07C47/00 C07C47/277 C07C47/30 C07C47/40 C07C47/47 C07C49/395 C07C51/353 C07C59/00 C07C59/13 C07C59/215 C07C61/00 C07CA C07D317/14 C07D319/00 C07D319/04 C07D319/06 C07D319/08 C07D339/00 C07D339/04 C07D339/06 C07D407/08 C07D409/00 C07D409/02 C07D409/04 C07D409/08 C07D411/08 C07D495/06 C07D495/10 C12M1/02 E04F17/02 F16L59/08 F16L59/10 F16L59/12 F16L59/14 F16L9/18 F16L9/22 F23J11/00 F23J13/02 F23J13/04**CPC:** F16L59/123 F16L59/188 F23J13/025 C07C45/296 C07C47/277 C12M27/02 Y02P20/55 C07C2601/10 C07D409/04 C07C43/196 C07C47/47 C07D495/10 C07C45/29 C07C45/60 C07C45/66 C07C405/00 C07C405/0033 C07D319/06 C07D339/06**European:** 124HC1A6+A3B C07C405/00 C07C405/00B6 C07C43/196 C07C45/29 C07C45/29L C07C45/60 C07C45/66 C07C47/277 C07C47/47 C07D319/06 C07D339/06 C07D409/04 C07D495/10 C12M27/02 F16L59/12H F16L59/18N F23J13/02B**US:** 138/149 366/265 366/305 422/225 422/227 424/305 424/317 435/295.1 435/316 454/1 549/374 549/375 549/39 560/121 562/503 568/446**JP F-Term:** 4C022 4C022/GA04 4C022/GA07 4C023 4C023/NA08 4C086 4C086/AA01 4C086/AA02 4C086/AA03 4C086/AA04 4C086/DA02 4C086/DA03 4C086/DA05 4C086/GA16 4C086/MA01 4C086/MA02 4C086/MA03 4C086/MA04 4C086/NA14 4C086/ZA36 4C086/ZA39 4C086/ZA54 4C086/ZA59 4C086/ZA61 4C201 4C206 4H006 4H006/AA01 4H006/AA02 4H006/AA03 4H006/AB20 4H006/AB23 4H006/AB24 4H006/AB25 4H006/AC11 4H006/AC41 4H006/AC44 4H006/AC47 4H006/BA07 4H006/BA22 4H006/BA37 4H006/BA55 4H006/BA70 4H006/BA92 4H006/BB11 4H006/BB12 4H006/BB71 4H006/BE15 4H006/BE20 4H006/BE23 4H006/BE32 4H006/BE60 4H031 4H031/AA01 4H031/AA02 4H031/AA03 4H031/AB20 4H031/AB23 4H031/AB24 4H031/AB25 4H031/AC11 4H031/AC44 4H031/AC47 4H031/BA07 4H031/BA22 4H031/BA37 4H031/BA55 4H031/BB14 4H031/BB16 4H031/BB17 4H031/BE10 4H031/UE14 4H031/UE32 4H031/UE38 4H031/UE52 4H036 4H036/AA01 4H036/AA02 4H036/AC13 4H036/AC21 4H036/AC28 4H036/AC41 4H036/AC43 4H036/AC44 4H036/AC45 4H036/AC63 4H036/BA02 4H036/BA11 4H036/BA21 4H036/BA28 4H036/BA29 4H036/BA31 4H036/BA32 4H036/BA34 4H036/BA36 4H036/BA37 4H036/BA46 4H036/BA70 4H036/BA92 4H036/BB11 4H036/BB12 4H036/BB71 4H036/BE15 4H036/BE20 4H036/BE23 4H036/BE32 4H036/BE60**JP F-Index:** A61K31/5575 A61P43/00/112 C07C177/00/102/J C07C401/00/X C07C405/00/502/J C07C45/00/X C07C47/47 C07C67/00/X C07D319/06 C07D339/06**Family:**

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Assignee(s): VAN HATTEM HENDRICUS WM ; SANOFI SOC ANONYME ; SANOFI SOC ANONYME TE PARIJS ; FIRMA SANOFI ; CIER ANDRE ; GERO STEPHAN ; CLEOPHAX JEANINE ; BARRIERE JEAN CLAUDE ; AMGAS 23 OUDE VEERSEWEG BV ; AMGAS B V ; SANOFI FIRMA

Inventor(s): (std): ZHANIN KLEOFAKS FR ; ZHANINI KLEOFAKS FR ; GIERO STEPHAN FR ; CLEOPHA0 JEANINE FR ; HATTEM HENDRICUS WILHELMUS MARIA VAN ; CIERA A ; STEFAN ZHERO FR ; BARRIERE JC ; BARRIERE JEAN CLAUDE FR ; ZHAN KLOD BARRER FR ; FERO S ; GERO STEPHAN FR ; CLEOPHAX JEANINE FR ; VAN HATTEM HENDRICUS WM ; BARRIERE JEAN CLAUD FR ; ANDRE SIER FR ; STEPHEN GERO ; VAN HATTEM HWM ; S GERO ; CIER ANDRE FR ; A CIER ; HENDRICUS WILHELMUS MARIA VAN HATTEM ; J C BARRIERE ; BARRIERE JEAN C ; J CLEOPHAX ; GERO S ; CLEOPHAX J ; BARRIERE J C ; CIER A ; SUTEFUAN JERO ; JANIINU KUREOFUAKUSU ; JANNKURAUDDO BARIIRE ; ANDORE SHUURU ; CLEOPHAX JEANINE ; BARRIERE J ; KLEOFAKS ZHANIN ; BARRER ZHAN KLOD ; VAN HATTEM HENDRICUS W M ; VAN HATTEM HENDRICUS WILHELMUS ; ANDRE CIER ; JEAN CLAUDE BARRIERE ; JEANINE CLEOPHAX ; STEPHAN GERO ; CIER ANDRE ; BARRIERE JEAN CLAUDE ; CLEOPHAX JEANINE ; GERO STEPHAN ; CLEOPHAX JEANIE ; BARRIERE JEAN CLAUDE ; CLEOPHA JEANINE ; BAREIRE JEAN C ; CIER ; CLEOPHAX ; BARRIERE ; GERO ; BARRIERE JEAN CLAUD ; GIERO STEPHAN ; VAN HATTEM HENDRICUS W M ; VAN HATTEM H W M ; HATTEM HENDRICUS WILHELMUS MAR ; GERO STEPHAN ; SIER ANDRE ; KLEOFAKS ZHANINI ; ZHERO STEFAN ; SALVET MIROSLAV ; KROVAK PREMYSL ; CLEOPHA

Inventor(s): CLEOPHA0 ; STEPHAN GERO JEAN CLAUDE BARRIERE JEANINE CLEOPHAX ; STEPHAN GERO JEAN CLAUDE BARRIERE JEANINE... ; BARRIERE JEAN CLAUDE FR ; JCLEOPHAX ; JCBARRIERE ; SGERO ; STEPHAN GERO JEAN CLAUDE BARRIERE JEANINE CLEOPHAX ET ANDRE CIER ; VAN HATTEM HENDRICUS WILHELMUS MARIA ; VAN HATTEM HENDRICUS WILHELMUS M ; CLEOPHAX JEANIE FR

Agent(s): COLLISON AND CO ; GRIFFITH HACK ; KIRBY EADES GALE BAKER ; ROBIC ROBIC AND ASSOCIES ASSOCIATES ; REINHOLD COHN AND PARTNERS

Designated states: AT BE CH DE FR GB IT LI LU NL SE

24) Family number: 46869547 (US2010237291A)

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Title: SYSTEMS AND METHODS FOR SOLAR-THERMAL GASIFICATION OF BIOMASS

Abstract: A method, apparatus, and system for a solar-driven chemical plant that may include a solar thermal receiver having a cavity with an inner wall, where the solar thermal receiver is aligned to absorb concentrated solar energy from one or more of 1) an array of heliostats, 2) solar concentrating dishes, and 3) any combination of the two. Some embodiments may include a solar-driven chemical reactor having multiple reactor tubes located inside the cavity of solar thermal receiver, wherein a chemical reaction driven by radiant heat occurs in the multiple reactor tubes, and wherein particles of biomass are gasified in the presence of a steam (H2O) carrier gas and methane (CH4) in a simultaneous steam reformation and steam biomass gasification reaction to produce reaction products that include hydrogen and carbon monoxide gas using the solar thermal energy from the absorbed concentrated solar energy in the multiple reactor tubes.

Classifications:

International (IPC 8-9): B01J19/00 B01J19/08 B01J19/12 B01J19/24
B01J7/00 B01J8/00 B01J8/04 B01J8/42 B02B5/02 B21D53/02 C01B3/00

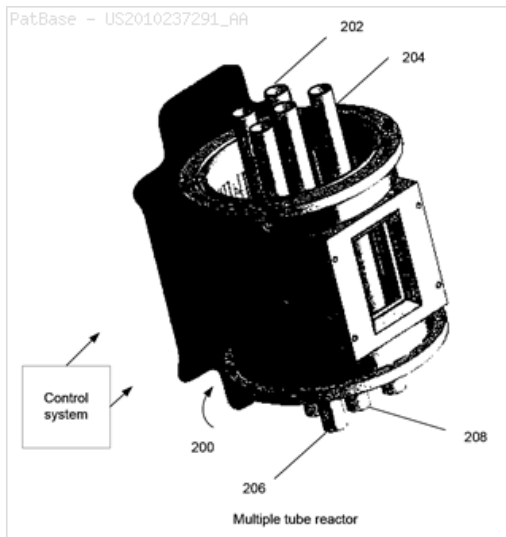
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European: B01J8/00F12 B01J8/00F4 B01J8/08H B01J8/12 C01B3/22 C01B3/24 C01B3/34 C01B3/38B C07C29/15 C07C29/152 C10G2/30 C10J3/00 C10J3/48B C10J3/48D C10J3/72C F24J2/07 L01J208/00C24 L01J208/00C2H2 L01J208/00C2L8 L01J208/00C2M4 L01J208/00C2R L01J208/00C2T L01J208/00F2 M01B203/02B2B M01B203/02B2D M01B203/02B4B M01B203/02F2 M01B203/04P12 M01B203/04P8 M01B203/06B M01B203/06D M01B203/08B2 M01B203/08B2B M01B203/08B2D M01B203/08D2 M01B203/08D6B M01B203/12B2D2 M01B203/16L M01B203/84 M10G300/10B M10J200/09 M10J300/09B2 M10J300/09B4 M10J300/09D2 M10J300/09F14 M10J300/09H4 M10J300/12V M10J300/12V2 M10J300/16B14 M10J300/16F4B M10J300/16F4F M10J300/16V R28D21/00T20 Y02E10/41 Y02E20/18 Y02E50/18 Y02E50/32

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Family:

Publication number	Publication date	Application number	Application date
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US2015376518 AA	20151231	US20150852077	20150911
US2016024403 AA	20160128	US20150875290	20151005
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Priority:

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US20150875290	20151005	US20170419826	20170130		

Probable Assignee: SUNDROP FUELS INC

Assignee(s): (std): HILTON COURTLAND ; HILTON COURTLAND M ; JOVANIC ZORAN ; JOVANOVIC ZORAN ; PERKINS CHRISTOPHER ; POPP PETER ; MINDEN ANDREW ; POP PETER ; LASKA TIMOTHY E ; SCHRAMM BRYAN ; RIDLEY RICHARD ; KELLEY DONNA ; SUNDROP FUELS INC ; SIMMONS WAYNE ; TURNER JOHN T ; SIMMONS WAYNE W ; SCHRAMM BRYAN J ; WHITE SIDNEY P ; STRAND STEVEN

Assignee(s): SUNDROP FUELS INC2410 TRADE CENTRE AVENUE, SUITE ALONGMONT CO80503US ; SUNDROP IP HOLDINGS LLC

Inventor(s): (std): SIMMONS WAYNE ; JOVANOVIC ZORAN ; PERKINS CHRISTOPHER ; HILTON COURTLAND ; MINDEN ANDREW ; RIDLEY RICHARD ; STRAND STEVEN ; KELLEY DONNA ; SCHRAMM BRYAN ; HILTON JOSEPH ; LANCASTER BRITTANY ; HILTON COURTLAND ; STRAND STEVEN R ; JOVANIC ZORAN ; SIMMONS WAYNE W ; SCHRAMM BRYAN J ; TURNER JOHN T ; POPP PETER ; HILTON COURTLAND M ; COURTLAND HILTON ; ZORAN JOVANOVIC ; BRYAN SCHRAMM ; WAYNE SIMMONS ; CHRISTOPHER PERKINS ; STEVEN STRAND ; DONNA KELLEY ; ANDREW MINDEN ; BRITTANY LANCASTER ; RICHARD RIDLEY ; COURTLAND HILTON ; POP PETER ; WHITE SIDNEY P ; ZORAN JOVANIC ; LASKA TIMOTHY E ; JOVANOVIC ZORAN RADOJICA

Inventor(s): PERKINS CHRISTOPHERUS ; WHITE SIDNEY PUS ; SIMMONS WAYNE WUS

Agent(s): DAVIES COLLISON CAVE; DAVIES COLLISON CAVE PTY LTD; SMART AND BIGGAR; RUTAN AND TUCKER LLP; FERRILL THOMAS S

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

25) Family number: 47319577 (US2010267188A)

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Title: DIFFUSION FURNACES EMPLOYING ULTRA LOW MASS TRANSPORT SYSTEMS AND METHODS OF WAFER RAPID DIFFUSION PROCESSING

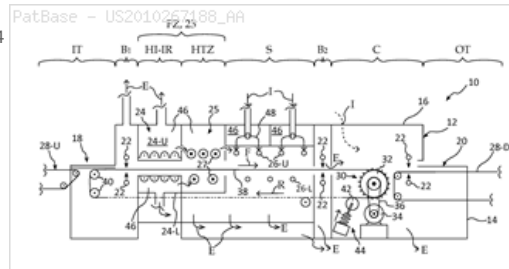
Abstract: Multi-zone, solar cell diffusion furnaces having a plurality of radiant element (SiC) or/and high intensity IR lamp heated process zones, including baffle, ramp-up, firing, soaking and cooling zone(s). The transport of solar cell wafers, e.g., silicon, selenium, germanium or gallium-based solar cell wafers, through the furnace is implemented by use of an ultra low-mass, wafer transport system comprising laterally spaced shielded metal bands or chains carrying non-rotating alumina tubes suspended on wires between them. The wafers rest on raised circumferential standoff spaced laterally along the alumina tubes, which reduces contamination. The bands or chains are driven synchronously at ultra-low tension by a pin drive roller or sprocket at either the inlet or outlet end of the furnace, with appropriate tensioning systems disposed in the return path. The high intensity IR flux rapidly photo-radiation conditions the wafers so that diffusion occurs>3x faster than conventional high-mass thermal furnaces.

Classifications:

International (IPC 8-9): B05C11/00 C30B C30B31/02 F27B17/00
F27B9/20 F27B9/24 F27B9/36 F27D19/00 F27D5/00 F27D9/00 H01L
H01L21/00 H01L21/22 H01L21/225 H01L21/302 H01L21/324 H01L21/38
H01L21/461 H01L21/66 H01L21/67 H01L21/677 H01L27/66 H01L31/042
H01L31/18 (Advanced/Invention);
H01L31/042 (Advanced/Non-invention);
H01L31/042 H01L31/18 (Core/Non-invention)
CPC: Y10S438/905 Y10S438/907 Y02E10/50 F27B9/20 F27B9/243
F27B17/0025 F27D5/0037 H01L21/2254 H01L21/324 H01L21/67109
H01L21/67115 H01L21/67173 H01L21/67706 H01L21/6776 H01L31/18

Y02P70/521

European: F27B17/00B1 F27B9/20 F27B9/24C F27D5/00E H01L21/225A4 H01L21/324 H01L21/677A1 H01L21/677B14 H01L21/67S2H4 H01L21/67S2H6 H01L21/67S2Z2L H01L31/18
US: 118/46 118/46S 118/695 118/695S 198/339.1 198/606 219/388 219/388S 219/411 219/411S 257/E21.001 257/E21.082 257/E21.135 257/E21.135S 257/E21.145 257/E21.158 257/E21.476 257/E31.11 257/E31.110S 373/113 392/411 392/411S 392/416 432/55 432/55S 438/54 438/542 438/57 438/61 438/61P 438/652 438/715 438/72 438/87 438/87P 438/905 438/907



Family:

Publication number	Publication date	Application number	Application date
CN102356458 A	20120215	CN201080008230	20100416
CN102356458 B	20141015	CN201080008230	20100416
CN102953123 A	20130306	CN201210279698	20120807
CN102953123 B	20160817	CN201210279698	20120807
HK1163342 A1	20120907	HK20120103393	20120405
HK1182147 A1	20131122	HK20130107035	20130614
IN06649DN2012 A	20160831	IN2012DN06649	20120727
IN07669DN2011 A	20121228	IN2011DN07669	20111005
TW201110396 A	20110316	TW20100111937	20100416
TW201314942 A	20130401	TW20120126439	20120723
TWI398014 B	20130601	TW20100111937	20100416
TWI473290 B	20150211	TW20120126439	20120723
US2010267188 AA	20101021	US20100761632	20100416
US2011306160 AA	20111215	US20110213503	20110819
US2012269226 AA	20121025	US20120540482	20120702
US8039289 BB	20111018	US20100761632	20100416
US8236596 BB	20120807	US20110213503	20110819
US8828776 BB	20140909	US20120540482	20120702
WO10121190 A1	20101021	WO2010US31473	20100416

Priority:

US20090170051P 20090416 US20100761632 20100416 WO2010US31473 20100416
US20110213503 20110819 IN2011DN07669 20111005 US20120540482 20120702

Probable Assignee: TP SOLAR INC

Assignee(s): (std): PARKS RICHARD W ; RAGAY PETER G ; RAGAY PETER M ; REY GARCIA LUIS ALEJANDRO ; TP SOLAR INC A CORP OF CA ; TP SOLAR INC

Assignee(s): TP SOLAR INC A OF CA CORP

Inventor(s): (std): PARKS RICHARD W ; REY GARCIA LUIS ALEJANDRO ; RAGAY PETER G ; RAGAY PETER M ; ALEJANDRO REY GARCIA LUIS

Inventor(s): PARKS RICHARD ; RAGAY PETER ; REY GARCIA LUIS

Agent(s): WENPING AND CO; JACQUES M DULIN ESQ DBA INNOVATION LAW GROUP LTD; INNOVATION LAW GROUP LTD; JACQUES M; DULIN JACQUES M

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

26) Family number: 31037602 (US2002127505A)

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Title: Oxygen enhanced low nox combustion

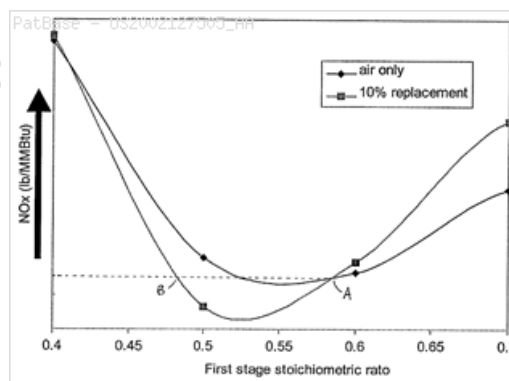
Abstract: Fuel such as coal is combusted in a staged combustion device in a method comprising feeding into a first combustion stage of said furnace said fuel and gaseous oxidant containing more than 21 vol. percent oxygen, and preferably 21.8 to 29 vol. percent oxygen, at a stoichiometric ratio below that which, if the stage were operated with air as the only oxidant, would produce the same amount of NO_x, and combusting said fuel with said gaseous oxidant in said combustion stage to produce combustion products and unburned fuel.

Classifications:

International (ipc 8-9): F23C6/04 F23L7/00 F23M3/02 A61B17/08 A61B18/04 A61B18/08 A61B18/18 B01D53/56 B01D53/76 F02G F16L7/00 F23B99/00 F23C5/00 F23C5/32 F23C7/00 F23C9/00 F23C99/00 F23D1/00 F23D1/02 F23D14/24 F23D14/32 F23D17/00 F23J15/00 F23K1/00 F23K3/00 F23K5/00 F23L9/00 F23L9/04 F23M3/04 (Advanced/Invention); F23C5/00 F23D14/24 F23D14/32 F23M3/02 F23M3/04 (Advanced/Non-invention); C01B F02G (Subclass/Invention)

International (ipc 1-7): A61B18/04 A61B18/18 A61B19/00 B01D53/56 B01D53/76 C10L5/00 F02G0/00 F02G1/00 F23B1/00 F23B1/02 F23B5/00 F23B7/00 F23C1/06 F23C1/10 F23C11/00 F23C5/00 F23C6/04 F23C7/00 F23C9/00 F23D1/00 F23D1/06 F23D14/24 F23D14/32 F23J11/00 F23K1/00 F23K3/02 F23K3/16 F23K5/00 F23L15/00 F23L7/00 F23M3/02 F23M3/04 F23N1/00 F23N1/08

CPC: F23L9/04 F23D17/007 F23J15/003 A61B18/082 A61B18/085 A61B2018/00345 A61B2018/00404 A61B2018/00619 A61B17/11 A61B18/18 A61B2017/1107 A61B2017/1121 A61B2017/1125



Family:

Publication number	Publication date	Application number	Application date
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AU2003212026 AA	20040129	AU20030212026	20030709
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EP1537362 A4	20121114	EP20030736578	20030513
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ES2566798 T3	20160415	ES20030736578T	20030513
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WO04007351 C2	20050324	WO2003US21272	20030709
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Priority:

US20010757611	20010111	EP20010991189	20011220	WO2001US48713	20011220
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US20020195764	20020715	US20020322659	20021219	EP20030736578	20030513
US20030436164	20030513	WO2003US14751	20030513	US20030438514	20030515
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WO2003US21272	20030709	WO2003US21274	20030709	US20070803135	20070511
US20090584965	20090914	US20090589381	20091022		

Probable Assignee: PRAXAIR TECHNOLOGY INC

Assignee(s): (std): BOOL LAWRENCE E III ; KOBAYASHI HISASHI ; FLOCK STEPHEN T ; PRAXAIR TECHNOLOGY INC ; MARCHITTO KEVIN ; PLEX TECHNOLOGY L L C ; PLEX TECHNOLOGY LLC ; MARCHITTO KEVIN S ; ROCKY MOUNTAIN BIOSYSTEMS INC

Assignee(s): WU KUANG TSAI ; SNYDER WILLIAM J ; THOMPSON DAVID R ; PRAXAIR TECHNOL INC ; PRAXAIR TECHNOLOGY INC DANBURY ; UNITED STATES DEPARTMENT OF ENERGY ; PRAXAIR TECHNOLOGY INC 39 OLD RIDGEB ; ENERGY UNITED STATES DEPARTMENT OF ; BOOL LAWRENCE E

Inventor(s): (std): BOOL H KOBAYASHI L E III ; BOOL LAWRENCE E ; BOOL LAWRENCE EIII ; COBASCH H ; H COBASCH ; H KOBAYASHI ; H KOBAYASHI LE BOOL III ; KUANG TSAI WU ; LAWRENCE E ; LAWRENCE E BOOL III ; LAWRENCE E III BOOL ; LE BOOL ; LE POHL III ; MARCHITTO KEVIN S ; POHL L E III ; SNEID H COBASCH L E POHL III W ; SNEID W J ; SNYDER WILLIAM J ; KEVIN MARCHITTO ; KOBAYASHI HISASHI ; KOBAYASHI HISASHI BOOL LAWRENC ; STEPHEN T FLOCK ; THOMPSON DAVID R ; KOBAYASHI H ; III ; HISASHI KOBAYASHI ; FLOCK STEPHEN T ; DAVID R THOMPSON ; BOOL L E ; BOOL III LAWRENCE E ; BOOL III ; TSAI WU KUANG ; WILLIAM J SNYDER ; WJ SNEID ; TSAI KOBAYASHI HISASHI BOOL LA ; MARCHITTO KEVIN ; WU KUANG TSAI ; BOOL LAWRENCE E III ; KOYABASHI HISASHI

Inventor(s): BOOL ; W J SNEID ; L E POHL III ; L E BOOL ; KOBAYASHI HISASHI PUTNAM VALLEY ; KOBAYASHI HISASHI BOOL LAWRENCE E III WU KUANG... ; KOBAYASHI HISASHI BOOL LAWRENCE E III WU KUANG TSAI ; H KOBAYASHI L E BOOL III ; BOOL LAWRENCE E III EAST AURORA ; KOBAYASHI HISASHI BOOL LAWRENCE E III THOMPSON... ; THOMPSON DAVID R GRAND ISLAND ; III LAWRENCE E ; H COBASCH L E POHL III W J SNEID ; BOOL LAWRENCE

Agent(s): WATERMARK PATENT AND TRADE MARKS ATTORNEYS; WATERMARK INTELLECTUAL PROPERTY PTY LTD; SIM AND MCBURNEY; SCHWAN SCHORER U PARTNER PATENTANWALTE MBB; SCHWAN SCHWAN SCHORER; SCHWAN SCHORER AND PARTNER MBB; DE ELZABURU ALBERTO; AXIS PATENT INT; PRAXAIR INC LAW DEPARTMENT M1 557; BENJAMIN AARON ADLER,ADLER AND ASSOCIATES; BENJAMIN AARON ADLER ADLER AND ASSOCIATES; BENJAMIN ADLER,ADLER AND ASSOCIATES; BENJAMIN ADLER ADLER AND ASSOCIATES; DONALD T; BLACK DONALD T; BENJAMIN AARON

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 CO CR CU CY CZ DE DK DM DZ EC EE EF FI FR GA GB GD GE GM GN GQ 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 NI NL NO NZ OM PH PL PT RO RU SC SD SE SG SI SK SL SN SZ TD TG TJ TM TN TR TT TZ UA UG UZ VC VN YU ZA ZM ZW

27) Family number: 5527635 (EP0130225A1)

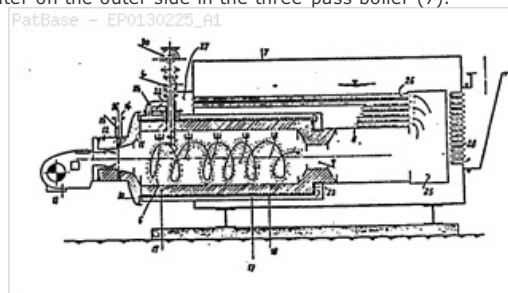
© PatBase

Title: Three-pass boiler with cyclonic combustion.

Abstract: 1. Cyclonic combustion for all combustible powders with at least one inversion of the three-phase current at an inwardly-directed constriction (9) of the combustion chamber of a three-pass boiler (7), characterised in that the combustion chamber (6) projects partially into the first pass of the three-pass chamber (7) and is surrounded with a mantle (17) which is also formed as an inlet for the combustion and vortex air and is rinsed with water on the outer side in the three-pass boiler (7).

Classifications:**International (IPC 8-9):** F23C3/00 (Advanced/Invention);

F23C3/00 (Core/Invention)

International (IPC 1-7): F23C3/00**CPC:** F23C3/008**European:** F23C3/00F1**Family:**

Publication number	Publication date	Application number	Application date
AT27054 E	19870515	AT19830106418T	19830701
DE3371403 D1	19870611	DE19833371403	19830701
EP0130225 A1	19850109	EP19830106418	19830701
EP0130225 B1	19870506	EP19830106418	19830701

Priority:

EP19830106418 19830701

Probable Assignee: RAG FOUNDATION**Assignee(s):** (std): RAG FOUNDATION ; RUHRKOHL CARBORAT GMBH**Inventor(s):** (std): LUTTGER HANS ; LUETTGER HANS**Designated states:** AT BE CH DE FR GB IT LI NL SE**28) Family number: 29361638 (US5317979A)**

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Title: METHOD AND APPARATUS FOR THE COMPLETE, DRY DESULPHURIZATION OF COMBUSTION WASTE GASES COMPRISING SO₂ AND DUST

Abstract: PCT No. PCT/EP91/01548 Sec. 371 Date Apr. 16, 1992 Sec. 102(e) Date Apr. 16, 1992 PCT Filed Aug. 14, 1991 PCT Pub. No. WO92/03211 PCT Pub. Date Mar. 5, 1992. Combustion waste gases of coal dust comprising SO₂ and fly ash are completely and dry desulphurized by very quickly heating up the fly ash to a high temperature which, however, is below the sintering temperature of the fly ash, and cooling the combustion waste gases to a temperature, the distance of which to the water dew point is relatively small and is below 25 DEG C. Thereby, SO₂ is bound into the ash, so that the combustion waste gases become free of SO₂. (Fig.)

Classifications:**International (IPC 8-9):** B01D53/34 B01D53/50 B01D53/68 B01D53/75

F23C99/00 F23D1/00 F23J15/00 F23J15/06 (Advanced/Invention);

B01D46/00 (Advanced/Non-invention);

B01D53/34 B01D53/50 B01D53/68 B01D53/74 F23C99/00 F23D1/00

F23J15/00 F23J15/06 (Core/Invention);

B01D46/00 (Core/Non-invention)

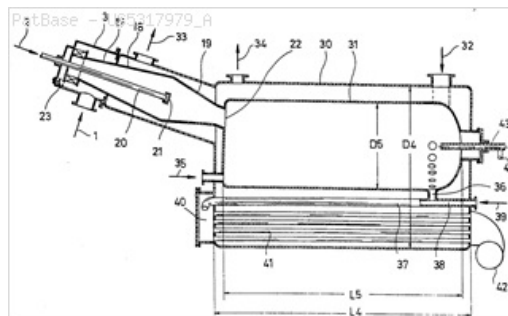
International (IPC 1-7): B01D115/24 B01D46/00 B01D46/48 B01D53/34

B01D53/40 B01D53/50 B01D53/75 B01D53/81 C10K1/02 F23B7/00

F23C11/00 F23D14/00 F23D15/00 F23J15/00 F23J3/02

CPC: F23J15/06 B01D53/508 F23D1/00 B01D53/68 Y02E20/363**European:** B01D53/50D B01D53/68 F23D1/00 F23J15/06 Y02E20/34F

Y02E20/36B

US: 110/234 110/264 110/345 110/347**Family:**

Publication number	Publication date	Application number	Application date
CN1034788 C	19970507	CN19911009781	19910817
CN1061916 A	19920617	CN19911009781	19910817
CS9201192 A3	19920812	CS19920001192	19920417
CS9201193 A3	19920812	CS19920001193	19920417
CZ287790 B6	20010214	CS19920001193	19920417
CZ288020 B6	20010411	CS19920001192	19920417
DE59105451 D1	19950614	DE19915005451	19910814
DE59106865 D1	19951214	DE19915006865	19910814
EP0496856 A1	19920805	EP19910914390	19910814
EP0496856 B1	19950510	EP19910914390	19910814
EP0500838 A1	19920902	EP19910914765	19910814

DE4035239 A1	19920507	DE19904035239	19901106
JP3061308 A2	19910318	JP19900198055	19900727
US4820313 A	19890411	US19860908270	19860917
US4978106 A	19901218	US19890385688	19890727

Priority:

US19860908270 19860917 US19890385688 19890727 DE19904035239 19901106

Probable Assignee: KELMAR ENERGY CORP

Assignee(s): (std): JIYON JIEI KERUMAA ; KELMAR ENERGY CORP ; KELMAR JOHN J

Assignee(s): KELMAR JOHN J MCKEESPORT PA US

Inventor(s): (std): KELMAR JOHN J ; JIYON JIEI KERUMAA

30) Family number: 60395735 (US2015267611A)

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Title: APPLICATIONS OF OXY-FUEL COMBUSTION TECHNOLOGY INTO GAS TURBINE COMBUSTORS AND ION TRANSPORT MEMBRANE REACTORS

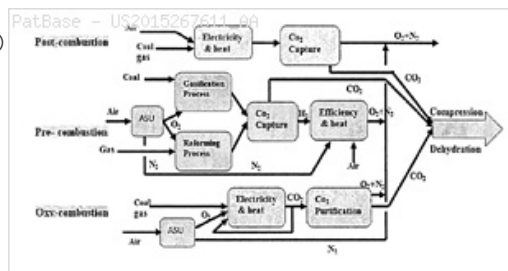
Abstract: Experimental and numerical investigations on an atmospheric diffusion oxy-combustion flame in a gas turbine model combustor are conducted. The combustor is fuelled with CH₄CH₄ and a mixture of CO₂ and O₂ as oxidizer. The stability of the oxy-combustion flame is affected when the operating percentage of oxygen in the oxidizer mixture is reduced below 25 percent. A new 3D reactor design is introduced for the substitution of ITM reactors into a gas turbine combustor. A new oxygen permeation equation model has been developed by fitting the experimental data available in the literature for a LSCF ion transport membrane. The monolith structure design ITM reactor is capable of delivering power ranging from 5 to 8 MWe based on cycle first law efficiency.

Classifications:

International (IPC 8-9): F02C3/20 F23L7/00 F23R3/28 (Advanced/Invention)

CPC: F02C3/20 F23L7/007 F23R3/286 F05D2240/35 Y02E20/16 Y02E20/322 Y02E20/344

US: 110/297 60/39.461 60/737 60/776



Family:

Publication number	Publication date	Application number	Application date
US2015267611 AA	20150924	US20140178907	20140212
US2017284294 AA	20171005	US20170491191	20170419
US2018320590 AA	20181108	US20180035743	20180716
US2018328278 AA	20181115	US20180035767	20180716
US9702300 BB	20170711	US20140178907	20140212
US10107192 BB	20181023	US20170491191	20170419
US10184396 BB	20190122	US20180035743	20180716
US10196977 BB	20190205	US20180035767	20180716

Priority:

US20140178907 20140212 US20170491191 20170419 US20180035743 20180716
US20180035767 20180716

Probable Assignee: KING FAHD UNIV OF PETROLEUM AND MINERALS

Assignee(s): (std): UNIV KING FAHD PET AND MINERALS

Assignee(s): KING FAHD UNIV OF PETROLEUM AND MINERALS

Inventor(s): (std): NEMITALLAH MEDHAT AHMED ; HABIB MOHAMED ABDEL AZIZ

Agent(s): OBLON MCCLELLAND MAIER AND NEUSTADT LLP

31) Family number: 50738745 (US2012049114A)

© PatBase

Title: GAS STREAM MULTI-POLLUTANTS CONTROL SYSTEMS AND METHODS

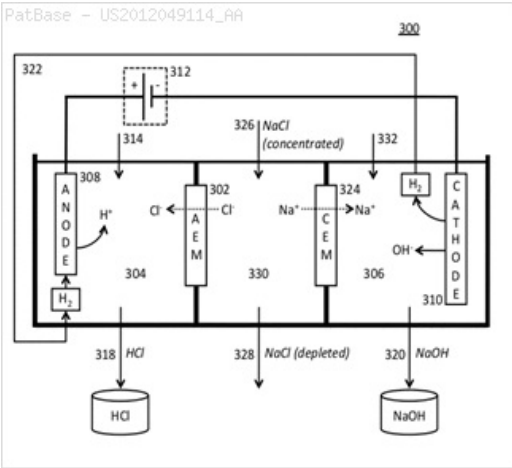
Abstract: In some embodiments, the invention provides systems and methods for removing carbon dioxide and/or additional components of waste gas streams, comprising contacting the waste gas stream with an aqueous solution, removing carbon dioxide and/or additional components from the waste gas stream, and containing the carbon dioxide and/or additional components, in one form or another, in a composition. In some embodiments, the composition is a precipitation material comprising carbonates, bicarbonates, or carbonates and bicarbonates. In some embodiments, the composition further comprises carbonate and/or bicarbonate co-products resulting from co-processing SO_x, NO_x, particulate matter, and/or certain metals. Additional waste streams such as liquid, solid, or multiphase waste streams may be processed as well.

Classifications:

International (IPC 8-9): B01D53/62 C01B32/50 C01G13/00 C09K3/00 C22B3/00 C22B43/00 F23J15/00 (Advanced/Invention)

CPC: B01D53/62 B01D53/1418 B01D2251/304 B01D2251/404 B01D2251/606 B01D2257/2045 B01D2257/2047 B01D2257/302 B01D2257/404 B01D2257/504 B01D2257/60 B01D2257/602 Y02C10/04 Y02C10/06 Y10T436/235 B01D53/44 B01D53/502 B01D53/56 B01D53/64 B01D53/78 Y02E20/326

European: B01D53/14D B01D53/62 L01D251/304 L01D251/404
L01D251/606 L01D257/204C L01D257/204F L01D257/302 L01D257/404
L01D257/504 L01D257/60 L01D257/602 Y02C10/04
US: 110/203 110/203S 252/184 252/184P 422/168 422/168S 422/261
422/262 423/105 423/106 423/226 423/226S 423/419.1 423/420.2
423/421 423/427 423/428 423/430 423/431 423/594.18 423/658.5
423/99 436/146 436/81 95/234 95/236 95/36



Family:

Publication number	Publication date	Application number	Application date
US2012049114 AA	20120301	US20110253272	20111005
US8491858 BB	20130723	US20110253272	20111005

Priority:

US20090156809P 20090302 US20090161369P 20090318 US20100305473P 20100217
US20100716235 20100302 US20100309812P 20100302 US20110253272 20111005

Probable Assignee: CALERA CORP

Assignee(s): (std): CALERA CORP ; CONSTANTZ BRENT ; KHOSLA VINOD ; SEEKER WILLIAM RANDALL

Inventor(s): (std): KHOSLA VINOD ; SEEKER WILLIAM RANDALL ; CONSTANTZ BRENT

Agent(s): CALERA CORP

32) Family number: 3335771 (EP0483520A2)

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Title: Method and apparatus for the combustion of gaseous and liquid fuels generating a low emission of noxious products.

Abstract: Method and apparatus for the combustion of gaseous and liquid fuels generating a low emission of noxious products together with minimum discharge of particulate combustion materials. The apparatus comprises a number of pipes of decreasing diameter and surrounding vent devices for concentrating the flame, with feeding of the recirculation air together with the combustion products. The pipes are arranged telescopically around the flame outlet or fuel nozzle, the pipe diameters decreasing in the direction of the flame outlet. Rotating vent devices in the pipes can be arranged in various ways to provide the recirculation air with a spin and acceleration. The flame is thus sharply concentrated and the air is rapidly recycled in the combustion chamber. The invention increases the burner output, reduces the combustion temperature and reduces the NOx emissions by up to 50 percent and the carbons by up to 100 percent.

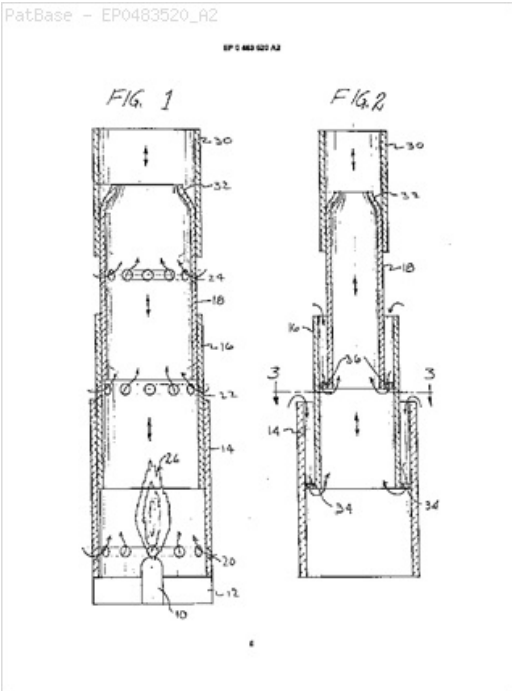
Classifications:

International (IPC 8-9): F23C9/00 F23D11/40 (Advanced/Invention);
F23C9/00 F23D11/40 (Core/Invention)

International (IPC 1-7): F23C9/00

CPC: F23C9/006 F23D11/404 F23M2900/05004

European: F23C9/00C F23D11/40C R23M900/05004



Family:

Publication number	Publication date	Application number	Application date
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EP0483520 A2	19920506	EP19910116528	19910927
EP0483520 A3	19921014	EP19910116528	19910927

Priority:

US19900591113 19901002

Probable Assignee: VAW VER ALUMINIUM WERKE AG

Assignee(s): (std): VAW VER ALUMINIUM WERKE AG

Assignee(s): VEREINIGTE ALUMINIUM WERKE AKTIENGESellschaft

Inventor(s): (std): SCHINDLER STEFAN DR ; SCHULTZE WERNER DR

Designated states: AT BE CH DE DK ES FR GB GR IT LI LU NL

33) Family number: 2870783 (US4941415A)

© PatBase

Title: Municipal waste thermal oxidation system

Abstract: An air-starved, batch burn, modular, municipal waste incinerator. It is designed to oxidize unsorted loads of heterogeneous materials in quantities ranging from 5 to 500 tons per 12 to 15 hours. The unique aspect of this system design is that through research in air mixing, air turbulence, and temperature control, it is possible to burn this material with a highly favorable stack emission product, without the need for bag houses, dry scrubbing, or other elaborate down stream air processing equipment. The incinerator includes a primary combustion chamber connected to a secondary combustion unit by a gas transfer tube. Solid material in the primary is oxidized--or gasified--without live flame. This flammable gas stream is vented into the secondary for ignition. Combustion gases from the primary chamber are completely burned in the secondary combustion unit as the gases pass upwardly through the air mixing ring and tangentially disposed re-ignition burners. The tangential orientation of the re-ignition burners forms a vortex of flame through which the combustion gases travel before exiting from the stack.

Classifications:

International (IPC 8-9): F23G5/027 F23G5/08 F23G5/16 F23J1/00

F23J13/08 (Advanced/Invention);

F23G5/027 (Core/Invention)

International (IPC 1-7): B09B3/00 F23G5/027 F23G5/08 F23G5/16

F23G7/00 F23J1/00 F23J13/08

CPC: F23G5/16 F23J1/00

European: F23G5/16 F23J1/00

US: 110/211 110/212 110/213 110/214 110/235

JP F-Term: 3K061 3K061/AA23 3K061/AB02 3K061/AC01 3K061/AC14

3K061/AC17 3K061/CA01 3K061/FA04 3K061/FA14 3K061/FA21

3K061/FA27 3K061/FA28 3K070 3K078 3K078/BA03 3K078/CA02

3K078/CA12 3K078/CA18 3K078/CA21 3K078/CA24 3K161 3K161/AA05

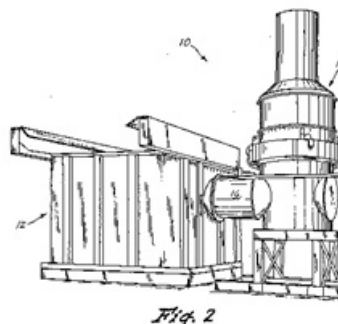
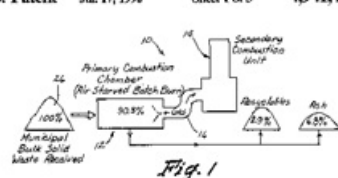
3K161/AA12 3K161/AA16 3K161/AA17 3K161/AA25 3K161/CA03

3K161/DA73 3K161/HA36 3K161/HA82 3K161/KA03 3K161/KA24

JP F-Index: F23G5/027/Z F23G5/16/B F23J13/08/Z

PatBase - US4941415_A

U.S. Patent Jul. 17, 1990 Sheet 1 of 3 4,941,415



Family:

Publication number	Publication date	Application number	Application date
AT100558 E	19940215	AT19900311971T	19901101
CA2028915 AA	19910503	CA19902028915	19901030
CA2028915 C	19950411	CA19902028915	19901030
DE69006176 D1	19940303	DE19906006176	19901101
DE69006176 T2	19940818	DE19906006176T	19901101
DK0426471 T3	19940530	DK19900311971T	19901101
EP0426471 A2	19910508	EP19900311971	19901101
EP0426471 A3	19911009	EP19900311971	19901101
EP0426471 B1	19940119	EP19900311971	19901101
ES2048444 T3	19940316	ES19900311971T	19901101
JP3194310 A2	19910826	JP19900298770	19901102
US4941415 A	19900717	US19890430371	19891102

Priority:

US19890430371 19891102

CA19902028915 19901030

EP19900311971 19901101

EP19900311971 19901101

Probable Assignee: ENTECH INC

Assignee(s): (std): ENTECH CORP ; ENTECH INC ; ENTETSUKU INC

Assignee(s): KERR DONALD F ; POPE G MICHAEL ; ENTECH INC ANCHORAGE ALAS US
Inventor(s): (std): DONARUDO EFU KAA ; JII MAIKERU POOPU ; KERR DONALD F ; POPE G MICHAEL
Inventor(s): POPE G MICHAEL WASILLA ALASKA 99687 US ; KERR DONALD F BURLINGTON IOWA 52601 US
Agent(s): SHAPIRO COHEN
Designated states: AT BE CH DE DK ES FR GB GR IT LI LU NL SE

34) Family number: 29876806 (US2267041A)

© PatBase

Title: METALLURGICAL FURNACE

Abstract: 1. In a metallurgical furnace, the combination which comprises a porous hearth, a rabble disposed above said hearth and adapted to move dnely-divided solid material thereover, means for imparting rotary movement of the rabble relative to and around the hearth, means for forcing gas upwardly through the porous hearth, a removable fumace shell extending above the hearth and enclosing the rabble and having a jointwith the hearth, and means for sealing the joint between the shell and the hearth. ' ,

Classifications:

International (IPC 8-9): C22B5/12 F27B17/00 (Advanced/Invention);

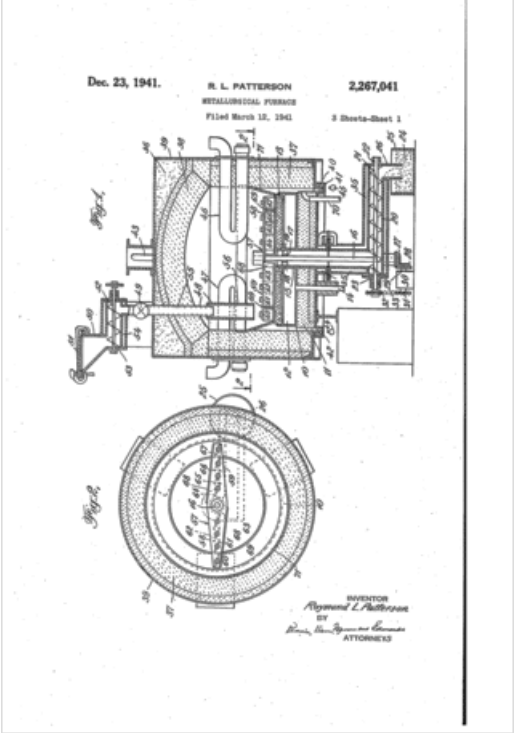
C22B5/00 F27B17/00 (Core/Invention)

CPC: C22B5/12 F27B17/00

European: C22B5/12 F27B17/00

US: 266/177 266/179 266/186 266/255 432/244

PatBase - US2267041_A



Family:

Publication number	Publication date	Application number	Application date
US2267041 A	19411223	US19410382903	19410312

Priority:

US19410382903 19410312

Probable Assignee: HARDY METALLURG CO

Assignee(s): (std): HARDY METALLURG CO ; HARDY METALLURG COMPANY

Assignee(s): HARDY METALLURGICAL CO ; HARDY METALLURGICAL COMPANY

Inventor(s): (std): PATTERSON RAYMOND L

35) Family number: 30492812 (US4035132A)

© PatBase

Title: Gas-fired radiant heater

Abstract: Radiant heater having supported porous refractory panel through which combustion mixture passes and on the surface of which mixture burns as it emerges, has a narrow stream of incombustible relatively cold gas like air pumped through the panel adjacent the support to act as a barrier seal and minimize the leakage of combustible gas around the margin of the panel, and the consequent burning of such leaking gas, which burning can damage the marginal support and cause flashback. Panel can have edges held on tubular frame sealed to a back plate to provide a simpler heater construction with combustion mixture plenum defined by back plate and frame, and with cold gas supply to the tubular passageways in frame.

Classifications:

International (IPC 8-9): B23K1/00 B23K1/005 B23K3/04 B31F1/28

D21F5/00 F23D14/12 F23D14/16 F23D14/18 F23D14/78 F24C3/04

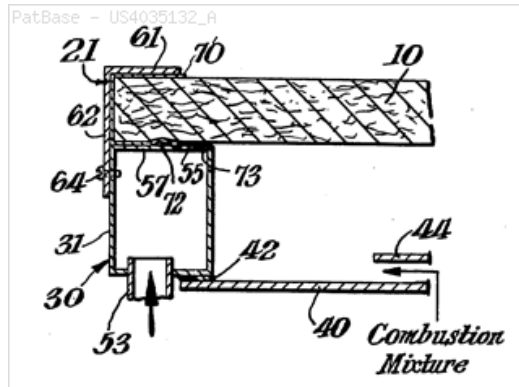
F24C3/06 F26B13/10 F26B3/30 F28F9/18 (Advanced/Invention);

B23K1/00 B23K1/005 B23K3/04 B31F1/20 D21F5/00 F23D14/12

F23D14/18 F24C3/00 F26B13/10 F26B3/00 F28F9/04 (Core/Invention)

International (IPC 1-7): B23K1/12 B23K3/04 B23K31/00 B65G23/44

C03B29/04 C21D9/52 C21D9/54 F16L39/00 F23D13/12 F23D13/14
F23D13/16 F23D13/18 F23D14/12 F23D14/16 F23D14/18 F23D14/78
F23D3/40 F23N5/00 F23Q3/00 F24C3/04 F24D14/12 F26B13/00
F26B13/10 F26B3/32 F27B9/28
CPC: F23D2900/14001 F28F9/18 B23K1/0012 B23K1/005 F23D14/12
B23K1/0053 B23K3/04 Y10T428/2933 B31F1/285 D21F5/002 F23D14/16
F23D2203/1012 F24C3/042 F24C3/062 F26B3/305 Y02E20/344
European: B23K1/005 B23K1/005L B23K1/00S4 B23K3/04 B31F1/28J2
D21F5/00B2 F23D14/12 F23D14/16 F24C3/04A F24C3/06A F26B3/30B
F28F9/18 R23D203/101A R23D900/14001
US: 198/813 198/814 228/183 228/234.1 266/102 266/103 34/41 34/519
361/253 428/375 431/264 431/326 431/328 431/33 431/7 432/175
432/226 432/266 432/31 432/59 432/72 432/8 65/118 65/119 65/120
JP F-Term: 3L113 3L113/AA02 3L113/AB03 3L113/AB06 3L113/AC04
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3L113/AC45 3L113/AC46 3L113/AC47 3L113/AC48 3L113/AC49
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3L113/AC90 3L113/BA02 3L113/BA23 3L113/BA26 3L113/BA28
3L113/BA30 3L113/BA31 3L113/BA32 3L113/CA10 3L113/CB03 3L113/CB23 3L113/CB34 3L113/DA01 3L113/DA13 3L113/DA26
3K017 3K017/BA00 3K017/BB01 3K017/BB09 3K017/BB10 3K017/BC07 3K017/BE13 3K018 3K018/AA00 3K018/BA01
3K018/BA09 3K018/BA10 3K018/BB07 3K018/BD13 3K017/DF04 3K017/DF08 3K021 3K021/DF04 3K021/DF08
JP F-Index: F26B13/10/A F23D14/16/A F23D14/78/B



Family:

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CA1118678 A1	19820223	CA19780318415	19781221
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GB8321644 A0	19830914	GB19830021644	19830811
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JP1412505 C3	19871127	JP19830130737	19830718
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JP52144831 A2	19771202	JP19770039068	19770407
JP54119139 A2	19790914	JP19780157718	19781222
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JP58016177 A2	19830129	JP19820110884	19820629
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US4326843 A	19820427	US19780952332	19781018
US4373904 A	19830215	US19800178121	19800814
US4378207 A	19830329	US19800186491	19800912
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US4500283 A	19850219	US19830509161	19830629
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US5090898 A	19920225	US19890424762	19891020
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US5306140 A	19940426	US19920934574	19920824

Priority:

US19760674409 19760407	US19760701687 19760701	US19760827016 19760701
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NZ19820201562 19820811	US19820312730 19821019	US19820435412 19821020
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US19910697906 19910501	US19920934574 19920824	

Probable Assignee: SMITH T M

Assignee(s): (std): FIRST CITY NAT BANK HOUSTON ; FIRST CITY NATIONAL BANK OF HO ; KOOMEY INC ; SMITH T M ; SMITH THOMAS M ; SMITH THOMAS MARSDEN ; TOOMASU MAAZUDEN SUMISU ; TOMASU EMU SUMISU

Assignee(s): THOMAS MARSDEN SMITH ; SMITH THOMAS M CINNAMINSON N J US

Inventor(s): (std): TOMASU EMU SUMISU ; TOOMASU MAAZUDEN SUMISU ; TOMLIN JERRY BENJAMIN ; TOMLIN JERRY B ; O NEIL MICHAEL ARNOLD ; O NEIL MICHAEL A ; LEVEY GUSTAVE STANLEY ; LEVEY GUSTAVE S ; SMITH THOMAS M ; SMITH THOMAS MARSDEN

Inventor(s): THOMAS MARSDEN SMITH ; M SMITH THOMAS

Agent(s): SMART AND BIGGAR

36) Family number: 1428834 (US4425763A)

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Title: Coal-fired steam locomotive

Abstract: A coal-fired steam locomotive powered by reciprocating steam engines. The locomotive is a two-unit drawbar-coupled locomotive. The units, which are designated as a power unit and a support unit, are arranged back-to-back, with each having a cab-in-front. Operation of the locomotive is equally effective in both directions. The power unit basically contains a furnace and combustion system, an ash storage system, a gas cleanup and exhaust system, a boiler and steam generator, steam engines, a jet condenser, and a control cab. The support unit, on two 6-wheel trucks, contains a modular coal storage area, a stoker motor, a water storage area, heat transfer assemblies and fans for air-cooling circulating water, and a second control cab. The coal-gasification furnace, steam boiler, and steam engines are all in a closed system. Further, the steam engines of the locomotive are in the form of a four cylinder, balanced system for driving the running gear of the locomotive. The steam expansion cycle is compounded; two high pressure cylinders exhaust into two low pressure cylinders, with all cylinders sized for equal thrust. Spent steam is condensed, cooled on-board, and the water recycled through the boiler. A condensing cycle is utilized to both obtain more power and minimize water make up. A large water supply is carried on the support unit to minimize way side water points. Condensing of the water is by jet condensing which takes place on the power unit and utilizes feedwater as the jet condensing means. The heated water is pumped through a heat exchanger provided on the support unit before returning to the water supply tank. In order to eliminate nuisance dirt, coal is prepackaged in large modules. Up to three modules are placed over the stoker screw mechanism contained on the support unit.

Classifications:

International (IPC 8-9): B61C1/00 B61C1/02 B61C1/08 B61C1/10 B61C1/12 B61C1/14 B61C9/04 F01K15/02 F22B7/00 F22B9/00 F23K3/04 (Advanced/Invention);

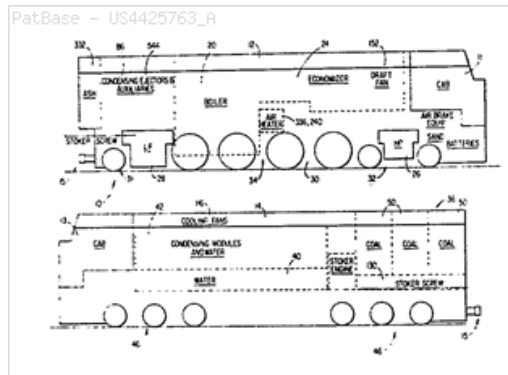
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CPC: B61C1/02 B61C1/08 B61C1/10 B61C1/12 B61C1/14 B61C9/04

European: B61C1/02 B61C1/08 B61C1/10 B61C1/12 B61C1/14 B61C9/04

US: 105/234 105/37 105/38 105/43 105/46 110/110 110/198 110/216 414/175 60/670 60/693 60/715



Family:

Publication number	Publication date	Application number	Application date
AU198175055 A1	19820318	AU19810075055	19810908
CA1183722 A1	19850312	CA19810385234	19810904
EP0047510 A2	19820317	EP19810106958	19810904
EP0047510 A3	19820407	EP19810106958	19810904
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US4425763 A	19840117	US19800185601	19800909
ZA8106222 A	19821124	ZA19810006222	19810908

Priority:

US19800185601 19800909 CA19810385234 19810904

Probable Assignee: AMERICAN COAL ENTERPRISES INC

Assignee(s): (std): AMERICAN COAL ENTERPRISES INC ; AMERIKAN KOORU ENTAAPURAIJIZU
Assignee(s): AMERIKAN KOORU ENTAAPURAIJIZU INC ; BERKOWITZ DAVID A ; HAMILTON CARL C ; WITHUHN WILLIAM L ; PORTA LIVIO D
Inventor(s): (std): PORTA LIVIO DANTE ; BERKOWITZ DAVID A ; WITHUHN WILLIAM L ; HAMILTON CARL C ; PORTA LIVIO D ; RIUIO DANTE HORUTA ; DEIUIITSUDO EI BERUKOITSUTSU ; KAARU SHII HAMIRUTON ; UIRIAMU ERU UIZAAN ; DEIBUITSUDO EI BERUKOITSUTSU ; RIBUIO DANTE PORUTA ; PORTA L ; BERKOWITZ D ; WITHUHN W ; HAMILTON C
Inventor(s): DAVID A BERKOWITZ ; LIVIO DANTE PORTA ; CARL C HAMILTON ; WILLIAM L WITHUHN
Agent(s): STEWART AND KOLASH LTD
Designated states: AT BE CH DE FR GB IT LI NL SE

37) Family number: 56253853 (US2015292737A)

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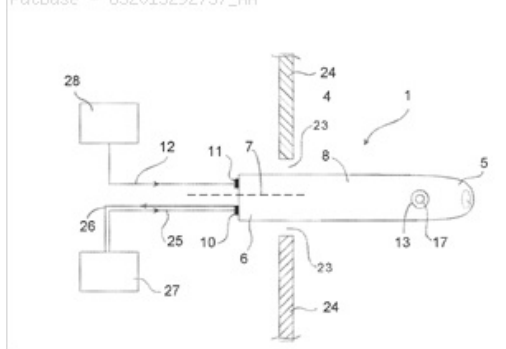
Title: SUPPLY DEVICE FOR A COMBUSTION CHAMBER

Abstract: A supply device for supplying solid particles and a carrier fluid to a heat generating plant combustion chamber. The supply device has a first end, a second end, a tube, an opening through the tube at the first end, and a supply pipe. A first end of the pipe is proximal to the first end of the supply device and has an opening defining an outlet of the pipe. A second end of the pipe is distal to the first end of the supply device, has an opening defining an inlet of the pipe, and is connected to an inside surface of the tube. The supply pipe defines a curved flow channel within the tube, and the flow channel at the outlet of the pipe has a direction towards the opening through the tube which is at an angle to the longitudinal axis of the supply device.

Classifications:

International (IPC 8-9): F23D14/58 F23J15/00 F23J7/00 F23K3/02
F23L7/00 F23L9/02 F23N1/02 (Advanced/Invention)
CPC: F23C2900/07021 F23D2201/20 F23D2214/00 F23D2900/00002
F23K3/02 F23N1/02 F23C5/06 F23D1/00 F23G2209/12 F23G2209/261
F23N2021/10
US: 110/104R 110/261 110/347 431/12 431/13

PatBase - US2015292737_AA



Family:

Publication number	Publication date	Application number	Application date
EP2906875 A1	20150819	EP20130845611	20131009
EP2906875 A4	20160720	EP20130845611	20131009
IN03435DN2015 A	20151120	IN2015DN03435	20150423
US2015292737 AA	20151015	US20130434233	20131009
WO14058381 A1	20140417	WO2013SE51185	20131009

Priority:

SE20120051154 20121011 WO2013SE51185 20131009

Probable Assignee: ECOMB AB

Assignee(s): (std): ECOMB AB PUBL

Assignee(s): ECOMB AB

Inventor(s): (std): HAGSTROEM ULF

Agent(s): KRANSELL AND WENNBORG KB

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 LI 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

38) Family number: 42226882 (US2008236561A)

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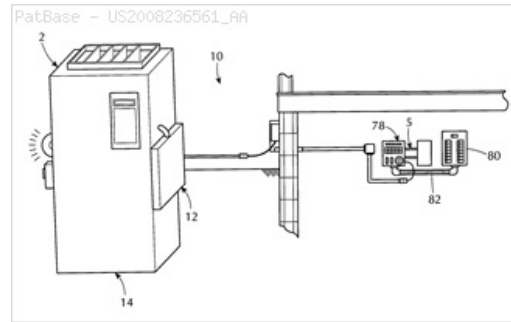
Title: COMBINATION GAS-FIRED FURNACE AND GAS-POWERED ELECTRICAL GENERATOR

Abstract: A combination gas-fired furnace and gas-powered electrical generator. The combination includes a furnace and an electrical generator. The furnace is gas-fired and has electrical components necessary to operate the furnace. The electrical generator is gas-powered, is electrically connected to the furnace, and activates automatically when normal electrical power to the furnace is interrupted so as to allow the electrical components of the furnace to operate when the normal electrical power to the furnace is interrupted thereby allowing the furnace to operate when the normal electrical power to the furnace is interrupted.

Classifications:

International (IPC 8-9): B60L1/02 F01K15/00 F01K17/02 F01N3/00
F01N3/10 F02B63/04 F02C6/00 F02C6/18 F02G5/00 F23J13/00 F24D1/00
F24D10/00 F24D3/00 F24D5/00 F24H3/00 F27B19/00 F28D1/04 F28D7/02
F28D7/10 H01R43/00 H02J9/08 (Advanced/Invention);
F24H3/00 G07C9/00 (Core/Invention)
CPC: H02J9/08 Y02T10/16 F24D2200/04 F24H2240/02 F28D7/02
F28D7/106 Y02E20/14 F01N5/02 F24H1/22 H02J3/00 F02G5/00

F24H1/0027 Y10T29/49117 Y10T307/625 H02J3/28 Y02T10/166
European: F24H1/00D R24D200/04 R24H240/02 Y02E20/14
US: 126/116.00CP 126/116C 126/307R 165/157 165/163 237/12.1
 237/53 237/56 237/57 29/825 290/2 290/2P 307/66 307/66S 432/1
 432/92 60/297 60/297S 60/298 60/298S



Family:

Publication number	Publication date	Application number	Application date
AU2010351041 AA	20111020	AU20100351041	20100423
CA2774896 AA	20111020	CA20102774896	20100423
CA2774896 C	20170411	CA20102774896	20100423
EP2558790 A1	20130220	EP20100849981	20100423
MX2011002341 A1	20120102	MX20110002341	20110302
US2008236561 AA	20081002	US20080069211	20080208
US2010326641 AA	20101230	US20100824857	20100628
US2011254269 AA	20111020	US20100760256	20100414
US2012256419 AA	20121011	US20120445056	20120412
US2012282561 AA	20121108	US20120488680	20120605
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US8590605 BB	20131126	US20100824857	20100628
US8847417 BB	20140930	US20120445056	20120412
WO11129840 A1	20111020	WO2010US32207	20100423

Priority:

US20070920925P 20070326	US20070964994P 20070816	US20070965002P 20070816
US20070965016P 20070816	US20080069211 20080208	US20100760256 20100414
WO2010US32207 20100423	US20100824857 20100628	US20120445056 20120412
US20120488680 20120605		

Probable Assignee: EVERLITE HYBRID IND

Assignee(s): (std): EVERLITE HYBRID IND ; EVERLITE HYBRID IND LLC ; KAISER STEWART RONALD ; KAISER STEWART

Assignee(s): ISAACS ARTHUR OWNER IN COMMON 1 2 ; PEREL NEIL OWNER IN COMMON 1 2 ; ISAACS ARTHUR ; PEREL NEIL ; ISAACS ARTHUR (OWNER IN COMMON 1 2) ; PEREL NEIL (OWNER IN COMMON 1 2) ; EVERLITE HYBRID INDUSTRIES LLC ; PEREL MR NEIL ; ISAACS MR ARTHUR

Inventor(s): (std): KAISER STEWART RONALD ; KAISER STEWARD ; KAISER STEWART

Inventor(s): STEWART KAISER

Agent(s): GRIFFITH HACK; MACRAE AND CO; Messulam Adam Clive; CHARLES E BAXLEY ESQUIRE; HERBERT L ALLEN ALLEN DYER DOPPELT MILBRATH AND GILCHRIST PA; ALLEN DYER DOPPELT MILBRATH AND GILCHRIST PA; SAUER JUSTIN R

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 LI 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

39) Family number: 43168920 (US2009200032A)

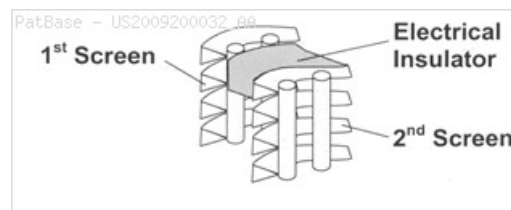
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Title: SYSTEM, METHOD AND APPARATUS FOR CREATING AN ELECTRICAL GLOW DISCHARGE

Abstract: The present invention provides system, method and apparatus for creating an electric glow discharge that includes a first and second electrically conductive screens having substantially equidistant a gap between them, one or more insulators attached to the electrically conductive screens, and a non-conductive granular material disposed within the gap. The electric glow discharge is created whenever: (a) the first electrically conductive screen is connected to an electrical power source such that it is a cathode, the second electrically conductive screen is connected to the electrical power supply such that it is an anode, and the electrically conductive fluid is introduced into the gap, or (b) both electrically conductive screens are connected to the electrical power supply such they are the cathode, and the electrically conductive fluid is introduced between both electrically conductive screens and an external anode connected to the electrical power supply.

Classifications:

International (IPC 8-9): B01D17/02 B01J19/08 B23K10/00 B23K10/02 B23K15/00 B23K15/06 B23K15/08 B64G1/40 C01B3/34 C02F1/28 C02F1/46 C02F1/461 C04B35/10 C04B37/00 C10B23/00 C10B53/06 C10G15/00 C10G32/00 C10J3/72 C25B1/00 C25B11/03 C25B13/02 C25B13/08 C25B9/00 C25B9/04 C25B9/08 E21B21/06 E21B35/00 E21B36/00 E21B36/04 E21B43/00 E21B43/08 E21B43/17 E21B43/24 E21B43/243 E21B43/25 E21B43/34 E21B43/40 E21B7/15 F01D13/00 F02C F02C3/14 F02C6/12 F02C7/26 F02C7/266 F02K3/08 F02K3/12 F02K9/42 F02K9/78 F03H1/00 F22B1/28 F22B1/30 F23R F23R3/00 F23R3/42 F23R3/58 F27B3/08 G06F17/30 H01J1/24 H01J17/26 H01J19/08 H01J37/02 H01J37/32 H01J5/10 H05B3/60 H05B31/26 H05B6/02 H05B6/10 H05B7/20 H05H H05H1/24 H05H1/26 H05H1/30 H05H1/32 H05H1/34 H05H1/38 H05H1/40 H05H1/42 H05H1/44 H05H1/46 H05H1/48 H05H1/50 (Advanced/Invention); B23K10/00 B64G1/40 C02F1/32 C02F1/78 G21D5/02 H05H1/24 H05H1/34 H05H1/46 (Advanced/Non-invention); B64G1/22 C02F1/46 C02F1/461 C25B9/00 E21B36/00 E21B43/00 E21B43/16 F02C3/00 F02C6/00 F02C7/26 F23R3/00 H01J17/02



H05B31/00 (Core/Invention);

H05H (Subclass/Invention)

CPC: E21B43/26 H05H2001/3494 E21B21/063 E21B43/40 E21B43/34 E21B21/066 F02K3/12 F01D13/00 F23R3/007 F23R3/58 F02K9/425 E21B36/008 E21B36/04 E21B43/17 E21B43/243 H05H1/40 H05H1/44 B64G1/405 B64G1/406 G21D5/02 Y02E50/12 Y02T50/678 E21B43/08 F22B1/30 H01J17/26 H05H1/38 H01J37/32018 H05H1/3405 H05H1/24 C02F1/46104 C10J3/72 C01B3/34 C10J2200/12 C10J2300/1238 C10J2300/0916 C01B2203/0216 C01B2203/1241 B23K15/0046 B23K15/06 B23K15/08 F02K3/08 H01J2237/31 H05H2001/3484 H01J37/32055 C02F1/283 H05H1/50 H05H2001/4667 C04B35/10 C04B2235/322 C04B2237/343 C04B2237/72 H01J37/32541 H01J37/32568 H01J37/32027 H05H2001/3489 C02F2103/005 H05H1/26 C01B3/342 C01B2203/0283 C01B2203/0861 C02F1/32 C02F1/4608 C02F1/46114 C02F1/78 C02F2301/026 C02F2303/16 Y02W10/33 Y02W10/37 E21B43/2405 C10B53/06 C10B23/00 C25B1/00 C25B11/03 C25B13/02 C25B13/08 C25B9/04 C25B9/08 H05H2001/483 F02C3/14 F02C7/266 F23R2900/00002 F23R2900/00009 H05H1/32 H05H2001/4695 F22B1/281 H05B7/20 H05B6/02 H05H1/30 H05H2001/3426 H05H2001/4697 F27B3/085 F05D2230/232 H05B6/10 H05H1/34 H05H2001/245 H05H2001/466 E21B43/082 E21B43/2401 H05H1/42 C04B37/001 B23K10/00 B23K10/006 B23K10/02 H05H1/2406 H05H1/48 H05H2001/2412 H05H2001/2431 H05H2001/3431

European: E21B36/04 E21B43/08P E21B43/24B E21B43/26 F02C3/14 F02C7/266 H05H1/24 H05H1/30 H05H1/32 H05H1/34 H05H1/42 R23R900/00002 R23R900/00009 T05H1/34T14 T05H1/34T36 Y02E50/12 Y02T50/67J

US: 1/1 156/89.11 166/248 166/302 166/60 166/60S 166/90.1 204/164 204/272 204/660 210/243 219/121.36 219/121.39 219/121.45 219/121.5 219/121.52 219/121.520P 219/121.56 219/121.59 219/121.59 219/383 219/601 219/618 313/231.01 313/231.010P 313/231.11 313/231.21 313/231.31 313/231.41 313/231.51 313/231.61 313/231.71 315/111.01 315/111.010S 315/111.11 315/111.31 373/20 373/25 392/312 392/331 392/387 392/394 392/401 422/162 422/186 422/186.03 422/186.04 422/186.21 60/202 60/203.1 60/204 60/204P 60/205 60/205P 60/244 60/244S 60/39.281 60/39.511 60/39.821 60/39.821S 60/39.826 60/39.826S

Family:

Publication number	Publication date	Application number	Application date
AU2009214660 AA	20090820	AU20090214660	20090212
AU2009214660 BB	20130117	AU20090214660	20090212
AU2013201613 AA	20130411	AU20130201613	20130318
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CN105247014 B	20171201	CN201480028310	20140315
EP2212516 A2	20100804	EP20080840081	20081016
EP2212516 A4	20140625	EP20080840081	20081016
EP2212516 B1	20161207	EP20080840081	20081016
EP2255081 A2	20101201	EP20090710927	20090212
EP2255081 A4	20140219	EP20090710927	20090212
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RU2010119361 A	20111127	RU20100119361	20081016
RU2481463 C2	20130510	RU20100119361	20081016
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Probable Assignee: FORET PLASMA LABS LLC

Assignee(s): (std): FOREST PLASMA LABS LLC ; FORET PLASMA LABS LLC ; FORET PLAZMA LABS LLK ; FORET TODD

Inventor(s): (std): FORET TODD ; FORET TODD T

Inventor(s): TODD FORET

Agent(s): PIZZEYS; PIZZEYS PATENT AND TRADE MARK ATTORNEYS PTY LTD; SHAPIRO COHEN; AVENTUM IP LAW LLP; SHAPIRO COHEN LLP; SONN HELMUT; SONN AND PARTNER PATENTANWAELTE; MUELLER BORE AND PARTNER PATENTANWAELTE PARTG MBB; MUELLER BORE AND PARTNER PATENTANWAELTE PARTG MBB; WILKINSON AND GRIST; SHUN SHUN CHAN; CHALKER FLORES LLP; DANIEL J; EDWIN S; CHALKER DANIEL J; FLORES EDWIN S; SINGLETON CHAINEY ET AL; FLORES EDWIN ET AL; CHALKER DANIEL ET AL; CHALKER DANIEL J ET AL

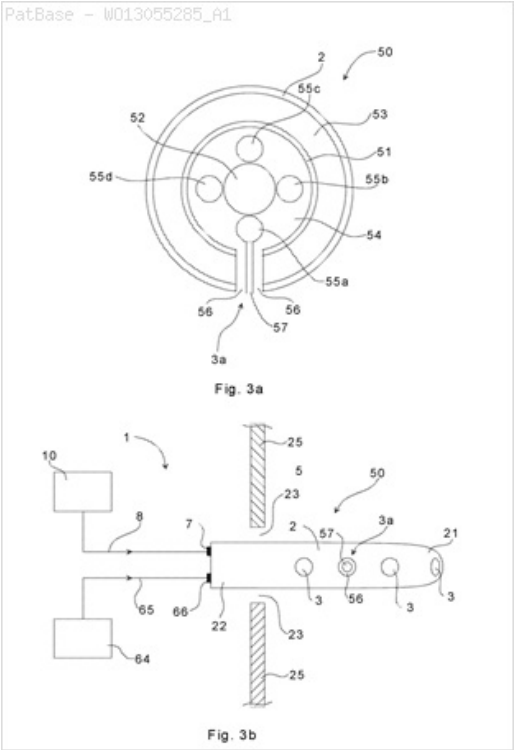
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40) Family number: 53522931 (WO13055285A1) © PatBase

Title: COMBUSTION CHAMBER SUPPLY DEVICE AND METHOD THEREOF

Abstract: The present invention relates to a method and a supply device (1) for supplying a fluid and/ or solid particles to a combustion chamber (5) in a heat-generating plant. The supply device comprises a tube (2) having a central longitudinal axis, a lateral surface, a first end (21) with a first end surface and a second end (22) with a second end surface, and at least one aperture (3) through one of said surfaces at said first end and arranged to emit the fluid and/ or solid particles into the combustion chamber at least partly in a direction parallel to the longitudinal axis of the tube away from the tube. The supply device also comprises a displacing device adapted for axial displacement of the first end of the tube and the at least one aperture along the longitudinal axis of the tube.

Classifications:
International (IPC 8-9): F23J15/00 F23J3/00 F23J7/00 F23K5/00 F23L7/00 F23L9/02 (Advanced/Invention); F23G5/48 (Advanced/Non-invention)
CPC: F23J7/00 F23L9/02 F23G5/48 F23J3/023 F23J15/003



Family:

Publication number	Publication date	Application number	Application date
WO13055285 A1	20130418	WO2012SE51091	20121011

Priority:
SE20110050942 20111012 SE20110050944 20111012

Probable Assignee: ECOMB AB PUBL

Assignee(s): (std): ECOMB AB PUBL

Assignee(s): ECOMB AB (PUBL)

Inventor(s): (std): HAGSTROEM ULF

Agent(s): KRANSELL AND WENNBORG KB

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 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

Title: METHOD AND DEVICE FOR COMBUSTION OF SOLID PHASE FUEL

Abstract: Method for combusting a solid phase fuel, where the fuel is caused, by the help of a non-pneumatic feeding element (11), to be fed to an inlet opening (11a) in a burner device (10) having a first inlet (13a) for the oxidant through which an oxidant is caused to flow via a first supply conduit (13). The first inlet (13a) for oxidant is caused to be arranged in the form of an opening surrounding the inlet opening (11a), in that the oxidant is caused to flow out through the opening (13a) with a velocity of at least 100 m/s, through a burner pipe (16) and out through a burner orifice (17) to a combustion space (18), so that the oxidant by ejector action causes the fuel to be conveyed through the burner pipe (16) and out through the burner orifice (17).

Classifications:

International (IPC 8-9): F23B40/00 F23B40/02 F23C99/00 F23D1/00 F23D1/04 F23D14/00 F23D14/62 F23D14/78 F23J7/00 F23K3/00 F23K3/02 F23L7/00 F24J7/00 (Advanced/Invention);

F23K3/14 (Advanced/Non-invention);

F23B40/00 F23B40/02 F23C99/00 F23D1/00 F23D14/72 F23J7/00

F23K3/00 F23L7/00 (Core/Invention)

CPC: F23K3/02 F23K2203/008 F23K3/00 F23L7/005 F23D1/00 F23C9/006 F23C2900/99001 F23L7/007 F23L2900/07007 Y02E20/342 Y02E20/344

European: F23C9/00C F23D1/00 F23L7/00D R23C900/99001

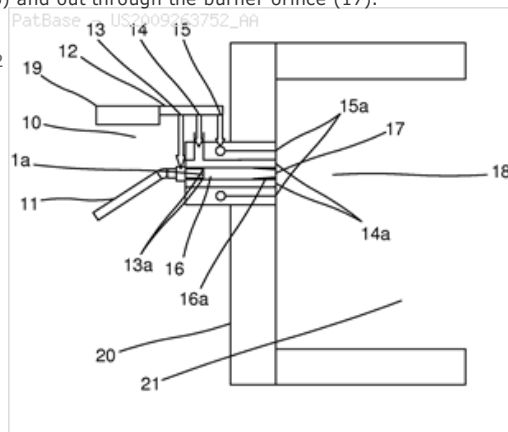
R23L900/07007 Y02E20/34B Y02E20/34D

US: 110/104B 110/243 110/261 110/263 110/265 110/267 110/267S 110/297 110/327 110/327S 110/342 110/347 110/348 431/10 431/12 431/160 431/350 431/354 431/354S 431/4 431/4P 431/8 431/9

JP F-Term: 3K023 3K065 3K065/QA04 3K065/QB11 3K065/QB18 3K065/QC03 3K065/TA01 3K065/TA14 3K065/TC01 3K065/TC03 3K065/TD07 3K065/TE02 3K065/TE06 3K065/TE10 3K065/TF03 3K065/TH02

JP F-Index: F23C99/00/305 F23C99/00/310 F23C99/00/323 F23D1/04 F23L7/00/B

JP Facet: ZAB

**Family:**

Publication number	Publication date	Application number	Application date
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Priority:

SE20080000919 20080422 WO2009SE50412 20090422

Probable Assignee: AGA AB

Assignee(s): (std): AGA AB ; EKMAN TOMAS ; LUGNET ANDERS

Inventor(s): (std): EHKMAN TOMAS ; ANDERS LUGNET ; TOMAS EKMAN ; LUGNET ANDERS ; EKMAN TOMAS

Agent(s): OERTENBLAD BERTIL TORE; GELLNER BERND; OERTENBLAD JOHAN TORE; YOUNG AND THOMPSON; OERTENBLAD JOHAN ET AL

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 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 LI LK LR LS LT LU LV MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: METHOD AND SYSTEM FOR FEEDING AND BURNING A PULVERIZED FUEL IN A GLASS MELTING FURNACE, AND BURNER FOR USE IN THE SAME

Abstract: A method and system for feeding and burning pulverized fuel, such as petroleum coke, in a glass melting furnace, which includes a glass melting and a plurality of burners associated with a pair of sealed regenerative chambers disposed side-by-side which act as heat exchangers, the burners are arranged in a series of ports that are associated with the glass melting region of the furnace. The system includes means for supplying the pulverized fuel by each one of the burners for melting glass raw materials. The emissions of flue gases produced by the combustion process of the fuel in the furnace are controlled in order to maintain clean the flue gases and for reducing the emission of impurities from the fuel such as SOx, NOx and particulates. The regenerative chambers are manufactured with selected refractories such as, magnesium, zircon-silica-alumina or magnesia and zirconium-silicate, for counteracting the erosive and corrosive effects produced by the combustion process of the fuel in the glass melting chamber. A burner is also provided for feeding the petroleum coke, the burner including means to simultaneously mix a primary air and pulverized fuel-air mixture for the burning of the pulverized fuel.

Classifications:

International (IPC 8-9): B01D53/00 B01D53/34 B01D53/50 B01D53/56 B01D53/60 B01D53/81 C03B5/00 C03B5/16 C03B5/167 C03B5/235 C03B5/237 C03B5/425 C03B5/43 F23C1/00 F23C7/00 F23C99/00 F23D1/00 F23D14/66 F23D17/00 F23J15/00 F23K1/00 F23K3/02 F23L15/02 F27B3/04 F27B3/20 F27B3/22 (Advanced/Invention); C03B5/235 C03B5/237 C03B5/435 F23D1/00 (Advanced/Non-invention); B01D53/00 B01D53/34 B01D53/50 B01D53/56 B01D53/81 C03B5/00 F23C99/00 F23D1/00 F23D17/00 F23J15/00 F23K1/00 F23L15/00 (Core/Invention); F23D (Subclass/Invention)

International (IPC 1-7): B01D53/00 B01D53/34 B01D53/50 B01D53/56 B01D53/81 C03B3/00 C03B37/00 C03B5/16 C03B5/167 C03B5/235 C03B5/237 C03B5/42 C03B5/425 F23C1/00 F23C1/10 F23C1/12 F23D1/00 F23D17/00 F23L15/02

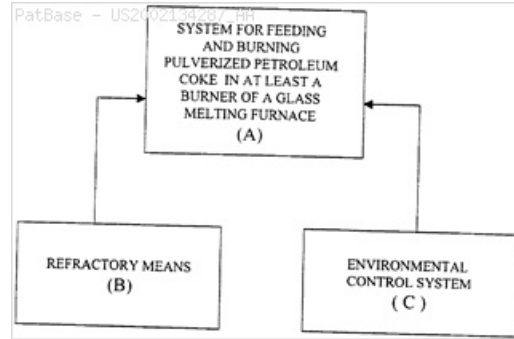
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European: C03B5/235 C03B5/237 F23C7/00A F23D1/00 R23C900/07021 R23C900/99004 R23D214/00

US: 110/261 110/261S 110/265 110/347 431/158 431/160 431/177 65/134.1 65/134.8 65/335 65/346 65/347 65/356 65/374.13 65/376 65/376S

JP F-Term: 3K023 3K023/QA06 3K023/QB02 3K023/QC05 3K023/SA00 3K065 3K065/QB11 3K065/QB14 4D002 4D002/AA02 4D002/AA12 4D002/AC10 4D002/BA03 4D002/BA14 4D002/CA11 4D002/DA02 4D002/DA05 4D002/DA12 4D002/DA16 4D002/EA02 4G014 4G014/AF00 3K065/QA01 3K065/QB09 3K065/QB20 3K065/QC04 4K045 4K045/AA06 4K045/BA08 4K045/RA12 4K045/RB13 4K045/RB14 3K017 3K017/DC03 3K065/QA06 3K065/TA01 3K065/TA02 3K065/TA08 3K065/TC03 3K065/TD08 3K065/TF02 3K065/TG04 4G014/AC01 4G014/AE00

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Priority:

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Probable Assignee: VITRO GLOBAL SA

Assignee(s): (std): IP TECNOLOGIA VIDRIERA LTD ; TECHNOLOGIA VIDRIERA LTD ; VITRO GLOBAL SA ; VITRO GLOBAL S A ; VITRO GLOBAL ; VIDRIERA WORLD WIDE LTD ; VITRO EUROPA LTD ; VITRO GLOBAL S

Assignee(s): VITRO CORPORATIVO DE CV SA ; VITRO SAB DE CV ; VITRO CORPORATIVO SA DE CV ; VALADEZ CASTILLO RAFAEL ; VITRO GLOBAL ROUTE DU MONT CARMEL SA ; LOREDO MURPHY JORGE ; MARGAIN ORTIZ GUSTAVO ; OLIN NUNEZ MIGUEL ANGEL ; FLORES PONCE JUAN GABRIEL ; KEER RENDON ARTURO ; CABRERA LLANOS ROBERTO MARCO ; CABRERA LLANOS ROBERTO MARCOS ; CENTRO DE TECNOLOGIA VIDRIERA LTD ; CENTRO DE TECNOLOGIA VIDRIERA MONTERREY SA DE CV ; CENTRO DE TECNOLOGIA VIDRIERA MONTERREY DE CV SA ; COMPANIA VIDRIERA DE CV SA

Inventor(s): (std): LOREDO MIGUEL ANGEL OLIN NUNIE ; MIGUEL ANGEL OLIN NUNIEZ ; ARTURO KEER RENDON ; MIGUEL ANGEL OLIN NUNEZ ; JORGE LOREDO MURPHY ; MURPHY JORGE LOREDO ; GUSTAVO MARGAIN ORTIZ ; ROBERTO MARCOS CABRERA LLANOS ; JUAN GABRIEL FLORES PONCE ; RAFAEL VALADEZ CASTILLO ; MARDZHEJN ORTIS GUSTAVO ; OLIN NUN ES MIGEL ANKHEL ; LOREDO MERFI KHORKHE ; KABRERA L JANOS ROBERTO MARKOS ; VALADES KASTIL O RAFAEHL ; FLORES PONSE KHUAN GABRIEL ; MARGAIN ORTIZ RAFAEL ; CABRERA LLANOS ROBERTO MARCO ; EZ MIGUEL ANGEL OLIN NU ; KEER RENDON ARTURO ; NUNIEZ MIGUEL ANGEL OLIN ; LLANOS ROBERTO MARCOS CABRERA ; ORTIZ GUSTAVO MARGAIN ; CASTILLO RAFAEL VALADEZ ; PONCE JUAN GABRIEL FLORES ; NUNEZ MIGUEL ANGEL OLIN ; ORITZ RAFAEL MARGIN ; ORTIZ RAFAEL MARGIN ; JOSU LORED MURPHY ; GUSTAVO MARGAIN ORTYZ ; FLORES PONCE JUAN GABRIEL MONTERREY ; LOREDO MURPHY JORGE MONTERREY ; MARGAIN ORTIZ RAFAEL GERZA GARCIA ; CABRERA LLANOS ROBERTO MARCOS MONTERREY ; OLIN NUNEZ MIGUEL ANGEL MONTERREY ; RENDON ARTURO KEER ; FLORES PONCE JUAN GABRIEL ; VALADEZ CASTILLO RAFAEL ; MARGAIN ORTIZ GUSTAVO ; LOREDO MURPHY JORGE ; CABRERA LLANOS ROBERTO MARCOS ; OLIN NUNEZ MIGUEL ANGEL ; MARGAIN ORITZ GUSTAVO ; LOREDA MURPHY JORGE ; MARCOS CABRERA LLANOS ROBERTO ; ARTURO CABRERA LLANOS ROBERTO

Inventor(s): CABRERA LLANOS ROBERTO MARCOS VALADEZ CASTILLO RAF ; CABRERA LLANOS ROBERTO MARCOS VALADEZ CASTILLO ; MIGUEL ANGEL OLIN NUNEZ ; MIGUEL ANGEL OLIN NUNIEZ ROBERTO MARCOS CABRERA LLANOS MURPHY JORGE LOREDO ; CABRERA LLANOS ROBERTO MARCOS VALADEZ CASTILLO RAFAEL KEER RENDON ARTURO ; MIGUEL ANGEL OLIN NU EZ ; MARGIN ORTIZ RAFAEL ; FLORES PONSE KHUAN GABRIEL' ; VALADES KASTIL'O RAFAEHL' ; KABRERA L'JANOS ROBERTO MARKOS ; OLIN NUN'ES MIGEL' ANKHEL' ; KEER-RENDON ARTURO ; VALADES-KASTIL'O RAFAEHL' ; KABRERA-L'JANOS ROBERTO MARKOS ; CABRERA LLANOS ROBERTO MARCOS ; MIGUEL ANGEL OLIN NUNIEZ ROBERTO MARCOS... ; MIGUEL ANGEL OLIN NU plus or minus EZ ; OLIN NUNEZ MIGUEL ANGEL ; RAFAEL MARGIN ORTIZ ; MIGUEL ANGEL OLIN NUNIEZ ROBERTO MARCOS CABRERA LL ; RAFAEL MARGIN ORTIZ

Agent(s): SPRUSON AND FERGUSON; MARKS AND CLERK; RAMIRO CASTRO DUQUE; ABELMAN FRAYNE AND SCHWAB

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ 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 NA NE NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

Title: ATOMIZING NOZZLE DEVICE, ATOMIZING PROCESS AND USE

Abstract: The invention relates to a new atomizing device with improved droplet formation. Smaller droplets are formed with increased micronized volume throughput, wherein high volumes of air are fed to a liquid sprayed from a liquid nozzle (2). High volume ratios result in mean free path between droplets being conveyed so as to minimize collisions and to prevent aggregation of the droplet.

Classifications:

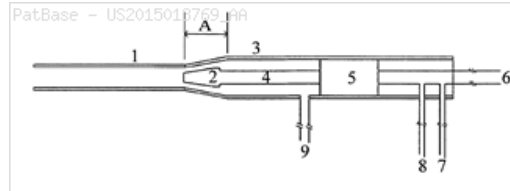
International (IPC 8-9): A01C23/00 A01M7/00 A62C31/02 A62C99/00 B01F3/04 B05B1/12 B05B1/34 B05B7/04 B05B7/06 B05B7/14 B05B7/26 C05G5/00 F23D1/00 (Advanced/Invention); B05B7/00 B05B7/04 (Core/Invention); B05B (Subclass/Invention)

CPC: B05B7/0416 B01F3/04063 B01F2215/0055 B01F2215/0036 A01M7/0003 A62C99/0072 B05B1/34 B05B7/0441 B05B7/0458 B05B7/0475 B05B7/0491 B05B7/066 B05B7/267 F23D1/005 Y10T137/0318 B05B1/3402

US: 137/1 252/3 252/364 261/78.2 504/116.1 71/64.1

JP F-Term: 2B052 2B052/BA07 2B052/BC07 2B052/DA08 2B052/EC18 2B052/ED03 2B052/FA03 2B052/FA09 2E189 2E189/KA01 4F033 4F033/QA05 4F033/QA07 4F033/QA10 4F033/QB02 4F033/QB03 4F033/QB09 4F033/QB12 4F033/QD03 4F033/QD15 4H061 4H061/AA01 4H061/AA04 4H061/FF01 4H061/JJ01 2B121 2B121/AA19 2B121/AA20 2B121/CB02 2B121/CB45 2B121/CB47 2B121/CB51 2B121/CB54 2B121/CB66 2E189/KB04 4F033/AA06 4F033/AA12 4F033/BA03 4F033/BA04 4F033/BA06 4F033/CA12 4F033/DA01 4F033/EA01 4F033/QB13 4F033/QB15 4F033/QB17 4F033/QB18 4F033/QD02 4F033/QE23

JP F-Index: A01C23/00/K A62C31/02 B05B7/04 C05G5/00/A A01M7/00/Q B05B1/12



Family:

Publication number	Publication date	Application number	Application date
AU2012282573 AA	20140116	AU20120282573	20120709
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SI2731729 T1	20170531	SI20120030922	20120709
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TR201706138 T4	20170522	TR20170006138T	20120709
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US2015013769 AA	20150115	US20120127342	20120709
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Priority:

EP20110176306 20110208	US20110506306P 20110711	EP20110176306 20110802
EP20120732682 20120709	JP20140519514T 20120709	WO2012EP63358 20120709
US20120127342 20120709	US20140127342 20140305	JP20160030210 20160219
US20190242542 20190108		

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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 LI 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

44) Family number: 32812953 (US2006075682A)

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Title: METHOD OF ENHANCING THE QUALITY OF HIGH-MOISTURE MATERIALS USING SYSTEM HEAT SOURCES

Abstract: The present invention harvests and utilizes fluidized bed drying technology and waste heat streams augmented by other available heat sources to dry feedstock or fuel. This method is useful in many industries, including coal-fired power plants. Coal is dried using the present invention before it goes to coal pulverizers and on to the furnace/boiler arrangement. Coal can be intercepted on current coal feed systems ahead of the pulverizers. Drying fuel, such as coal, is done to improve boiler efficiency and reduce emissions. A two-stage bed utilized in the process first "pre-dries and separates" the feed stream into desirable and undesirable feedstock. Then, it incrementally dries and segregates fluidizable and non-fluidizable material from the product stream. This is all completed in a low-temperature, open-air system. Elevation of fan room air temperature is also accomplished using waste heat, thereby making available to the plant system higher temperature media to enhance the feedstock drying process.

Classifications:

International (IPC 8-9): B01D50/00 B01D53/00 B01J8/18 B03B11/00 B03B4/06 B03B5/00 B07B11/00 B07B4/00 B07B4/08 B07B7/00 C07D C10B57/10 C10L5/00 C10L9/08 F23B90/00 F23G5/04 F23K1/00 F23K1/04 F23K3/02 F23L15/04 F26B15/18 F26B17/00 F26B17/10 F26B17/14 F26B19/00 F26B21/00 F26B23/00 F26B25/00 F26B3/00 F26B3/02 F26B3/08 F26B3/084 F26B3/22 F26B3/26 F26B7/00 F27B15/00 F27B15/14 F27D17/00 F27D3/00 (Advanced/Invention); C10L5/00 F23K1/04 F26B3/00 (Advanced/Non-invention); B01J8/18 B03B11/00 B03B4/00 B07B4/00 B07B7/00 C10L5/00 C10L9/00 F23B90/00 F23G5/02 F23K1/00 F23K3/00 F23L15/00 F26B15/00 F26B17/00 F26B17/12 F26B19/00 F26B23/00 F26B25/00 F26B3/00 F26B3/02 F27B15/00 F27D17/00 (Core/Invention); F26B3/00 (Core/Non-invention); B01J B03B C10L (Subclass/Invention)

International (IPC 1-7): B07B4/00 C07D C10L5/00

CPC: F23K2900/01001 F26B3/08 F26B3/082 Y02E20/12 F23K2900/01041 F23L15/04 Y02P20/129 B03B4/06 C10J3/482 C10J2300/094 C10J2300/0956 C10J2300/165 C10J2300/1671 C10L9/08 F23K1/04 F23K2201/20 F23K2201/30 F26B3/084 F26B23/001 C10B57/10 Y02P70/405 Y02E20/348

European: B03B4/06 C10B57/10 C10J3/48B C10L9/08 F23K1/04 F23L15/04 F26B23/00B F26B3/08 F26B3/084 F26B3/08B M10J300/09D8 M10J300/09F2 M10J300/16F2D M10J300/16K R23K201/20 R23K201/30 R23K900/01001 R23K900/01041 Y02E20/12

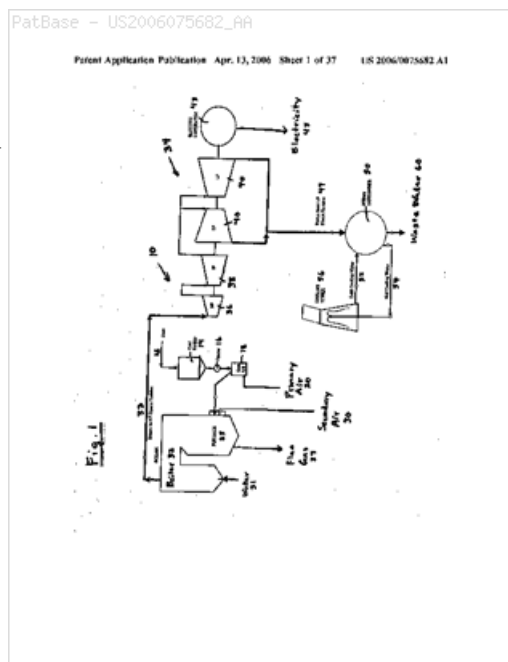
US: 110/224 110/224S 110/249 110/342 110/342S 110/346 166/248 202/99 209/132 209/132S 209/133 209/134 209/139.1 209/139.100S 209/143 209/147 209/155 209/155S 209/474 209/476 209/488 209/490 209/493 209/494 209/494S 34/138 34/180 34/359 34/359S 34/360 34/363 34/381 34/413 34/443 34/443S 34/493 34/493P 34/497 34/506 34/506S 34/509 34/509S 34/513 34/513P 34/526 34/526P 34/576 34/60 34/60S 34/80 34/86 34/86S 34/90 432/121 432/121P 432/219 432/29 44/492 44/626 44/626P 44/629 95/288 96/150

JP F-Term: 3L113 3L113/AA07 3L113/AB04 3L113/AC15 3L113/AC44 3L113/AC45 3L113/AC46 3L113/AC56 3L113/AC60 3L113/BA02 3L113/CA08 3L113/CB24 3L113/DA03 3L113/DA05 3L113/DA06 3L113/DA07 4K046 4K046/HA05 4K046/JA06 4K046/JD05 4K056 4K056/AA09 4K056/AA14 4K056/CA12 4K056/DA02 4K056/DA23 4K056/DA33 4K056/DA34 3K065 3L113/BA39 3L113/CB01 3L113/DA26 4D021 4D021/FA09 4D021/GA08 4D021/GA11 4D021/GA14 4D021/GA17 4D021/GA27 4D021/GA30 4D021/HA10 3L113/AB03 3L113/AC01 3L113/AC08 3L113/AC36 3L113/AC41 3L113/AC54 3L113/AC59 3L113/AC63 3L113/AC67 3L113/AC74 3L113/AC79 3L113/AC83 3L113/AC86 4D021/GA02 4D021/GA21 4D021/GA29 4H015 4H015/AA11 4H015/AB01 4H015/BA08 4H015/BA09 4H015/BA10 4H015/BB03

JP F-Index: F26B17/14/Z F26B23/00/A F26B25/00/J F26B3/08 F26B3/26 F27B15/14 F27D17/00/101/A F27D17/00/101/G F23K1/04 B07B4/08/B F23K1/00/B C10L9/08 F23K3/02/302 F26B17/10/C

Family:

Publication number	Publication date	Application number	Application date
AU2005295110 AA	20060420	AU20050295110	20051011
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Priority:

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ANTHONY

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HALLYBONE HUW GEORGE ; SEKIYA MITSUO ; HIRAKI YUSUKE ; MOSS AND BARNETT ; MOSS AND BARNETT
PA ; GLEN E SCHUMANN C O MOSS AND BARNETT ; SCHUMANN GLEN E

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 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 LI 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 PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN
TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

45) Family number: 30563990 (WO04040217A1)

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Title: HEATING FURNACE

Abstract: A method and apparatus for heating a material to a high temperature in a heating drum. The heating drum, capable of heating to a high emperature and rotatable around an axis, is light weight and can be mobile on wheels. The metal drum has a smooth mirror-like and wear resistant inner surface. Infrared radiation is reflected from the mirror-like polished metal surface back into the heating drum and to a material to be heated, which is at the same an abrasive of which is supplemented with an abrasive. The transfer of radiation heat from metal to a material to be heated is efficient by virtue of the metal's heat delivering capacity. Heating temperatures can be increased by virtue of the drum being fireproof or refractory.

Classifications:

International (IPC 8-9): F27B7/16 F27B7/20 F27B7/36 F27B7/38

F27D9/00 (Advanced/Invention);

F27B7/34 F27D1/00 (Advanced/Non-invention)

International (IPC 1-7): F27B F27B7/20

CPC: F27B7/16 F27B7/20 F27B7/34 F27B7/362 F27B7/38 F27D1/0033

F27D9/00 F27D2009/0013 F27D2009/0016 F27D2009/0035

European: F27B7/16 F27B7/20 F27B7/36A F27B7/38 F27D9/00

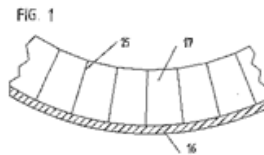
R27B7/34 R27D1/00A4 R27D9/00A2A R27D9/00A2A1 R27D9/00A3E

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INTERNATIONAL

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Family:

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AU2003275530 AA	20040525	AU20030275530	20031031
EP1561079 A1	20050810	EP20030758178	20031031
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Priority:

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Inventor(s): SEPPO RYRNAENEN ; SEPPO RYNNANEN ; MIKKO RYRNAENEN ; MIKKO RYNNANEN

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