

Search history

Search 1: (tire or organic) and waste and (reactor or furnace) and cool* and (separator or separating) and nozzle* (Results 3969)

Search 2: 1 and particle* and liquid and solid and (tank or vessel) and gas and chamber (Results 1487)

Search 3: 2 and opening (Results 980)

Search 4: 3 and tac=(apparatus or reactor or furnace) (Results 655)

Search 5: 4 and tac=(waste) (Results 306)

Search 6: 5 and tac=(tire or organic) (Results 170)

Search 7: 6 and decomposit* and resid* (Results 107)

Search 8: 7 and Tac=(solid or liquid or particles) (Results 106)

Search 9: 8 and tac=nozzle (Results 32)

Search 10: 9 and tac=gas* (Results 31)

Search 11: 10 and tac=(cool*) (Results 25)

Search 12: 11 and (closure or output) and bottom and top (Results 19)

Search 13: 12 and inorganic (Results 14)

Search 14: 13 and cooler (Results 10)

Search 15: TAC=(reactor and waste and pyrolysis) (Results 1632)

Search 16: (tyre or organic or tire) and waste and (reactor or furnace) and cool* and (separator or separating) and nozzle* and liquid and solid and condens* (Results 2354)

Search 17: 16 and (tank or vessel) and tac=(nozzle and gas) (Results 260)

Search 18: 17 and tac=waste (Results 128)

Search 19: 18 and (closure or output) and bottom and top and opening (Results 65)

Search 20: 19 decomposit* and (resid* or particle) (Results 0)

Search 21: 19 and decomposit* and (resid* or particle) (Results 36)

Search 22: (21) AND IPC=(B01 OR C10 OR B09 OR B03 OR B29) (Results 27)

Search 23: tac=((reactor or furnace or apparatus) and waste and (tire or tyre or wheel) and (pyrolysis or decomposition) and gas) (Results 275)

Search 24: 23 and (closure or output) and bottom and top and opening (Results 38)

Search 25: 24 and nozzle (Results 22)

Search 26: 25 and separat* and (Cool* or condens*) and solid and liquid (Results 20)

Search 27: (26) AND IPC=(C10 OR B01 OR B09 OR B29 OR C22) (Results 19)

Title: PROCESS AND **APPARATUS** FOR THERMALLY CRACKING ORGANIC **SOLID WASTE**

Abstract: Source: GB1507138A [EN] 1507138 Carbon black from rubber-containing **solid waste** SANYO ELECTRIC CO Ltd 12 Oct 1976 [16 Oct 1975] 42309/76 Heading C1A [Also in Division C5] Carbon black may be obtained from rubber-containing organic **solid waste** by thermal cracking of the **waste** with superheated steam obtained from a superheated steam generator of the internal heating type, the water, recovered by **condensing** the resulting cracked product and steam, being recycled for use as a source of water for the steam generator. The **waste** may comprise **tyres**, rubber hose or golf balls and is preferably not broken up before treatment. The carbon black may be reused in the manufacture of rubber products.

Classifications:

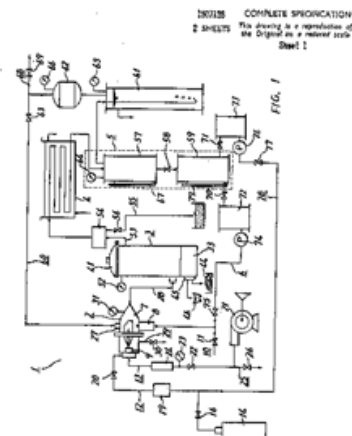
International (IPC 8-9): C10B53/07 C10G1/10 (Advanced/Invention); C10B53/07 C10G1/00 (Core/Invention)

International (IPC 1-7): B29C29/00 C08J11/00 C10B53/00 C10G1/10 C10G3/00 C10L5/48

CPC: Y02P20/143 Y02P30/20 C10B53/07 C10G1/10

European: C10B53/07 C10G1/10

PatBase - GB1507138_R



Family:

Publication number	Publication date	Application number	Application date
DE2646729 A1	19770428	DE19762646729	19761015
DE2646729 B2	19810423	DE19762646729	19761015
DE2646729 C3	19811224	DE19762646729	19761015
GB1507138 A	19780412	GB19760042309	19761012
JP52049668 A2	19770420	JP19750125112	19751016
JP54023002 B4	19790810	JP19750125112	19751016
JP987368 C3	19800221	JP19750125112	19751016

Priority:

JP19750125112 19751016 JP19750125112 19751016

Probable Assignee: SANYO ELECTRIC CO

Assignee(s): (std): SANYO ELECTRIC CO

Assignee(s): SANYO ELECTRIC CO LTD ; SANYO ELECTRIC CO LTD MORIGUCHI OSAKA JP

Inventor(s): (std): TSUTSUMI SHIGERU ; YOSHIDA NAGATOSHI ; YOSHIDA CHIYOUJIYU ; UENO MIKIO

Inventor(s): YOSHIDA NAGATOSHI OSAKA JP ; TSUTSUMI SHIGERU HIRAKATA JP

Title: HEAT ENERGY RECAPTURE AND RECYCLE AND ITS NEW APPLICATIONS

Abstract: Source: US2005120715A [EN] What has been created is a plurality and a variety of processes and a variety of devices correspondingly supportive to each process, wherein, a new partnership between; (1) a heat absorbing radiator compressed air pipes/tubes and (2) a **gas** turbine engine or a reciprocating piston engine, -is used to recapture and reconvert the, otherwise **wasted**, heat energies expelled by engines, by factories, by smelting plants, by distillation plants, by chillers/**coolers**/freezers, by cooking ovens, by lamps/stoves, by trash burners, and the heat energies created by the solar heat on the desert/ocean water, -into electric power and finally into hydrogen-deuterium fuel, -by having the engine's tailpipes submerged in cold compressed air inside the heat absorbing radiator pipes in reverse air flow, to further drive and re-drive the same engine; wherein, in order to capture fusion heat energy the hydrogen bomb is detonated in the deep ocean to catch the flames by the water and the hot water is used to energize the compressed air inside the heat absorbing radiator pipes; wherein, in order to produce fusion energy, an abundant electric arc is passed across **liquid** deuterium or across gaseous deuterium by the electro-plasma torch and sparkplug in the internal combustion engine, and by detonating a dynamite inside a **liquid** deuterium; wherein diamond is produced by placing carbon inside the hydrogen bomb; and wherein, deuterium fusion flame is used first in smelting glass to large sizes before running an engine.

Classifications:

International (ipc 8-9): B01D61/10 B63B1/10 B63B1/12 B63B35/00 B63B35/44 B63B39/06 B63B43/06 B63G1/00 B63G8/30 B63H19/02 B63H9/06 B63H9/10 B63J3/00 B64C31/04 B64C31/06 E02B3/06 F01K13/00 F01K23/10 F01K27/00 F02C1/00 F02C1/05 F02G5/00 F03B13/18 F03D11/04 F03D5/00 F03D5/04 F03G7/00 F24F5/00 F24F6/14 F28D5/00 (Advanced/Invention);

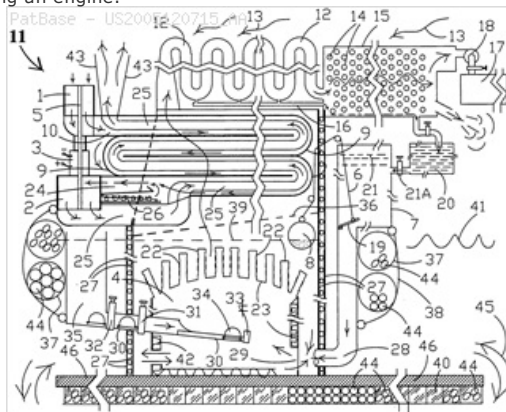
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International (ipc 1-7): B01D61/10 B63B17/00 B63B35/00 B63B7/00 F01K23/10 F03D5/02 F03D5/04 F03G7/00 F04B35/00 F24F6/14 F28D5/00

CPC: B63H9/06 B63H9/1021 F05D2260/212 F01K27/00 F02C1/05 F03G7/00 Y02T50/672 Y02T50/676 B63B1/121 Y02W10/33 Y02W10/37 B63B1/107 B63B1/24 B63B39/06 B63B2039/067 B63G1/00 B63G8/30 B63H19/02 B63J1/00 C02F1/04 F05B2240/40 Y02T70/59 B63B35/00 B63B43/06 B63J3/00 E02B3/062 E02B2017/0091 F03B13/182 F03D5/04 F24F5/0035 F24F6/14 Y02B10/30 Y02B10/50 Y02E10/38 F03D13/20 F28D5/00 B01D61/10 B63B35/44 B63B2035/446 B63B2035/4466 B64C31/04 B64C31/06 F03D5/00 F05B2240/921 F05B2240/922 F24F2001/0088 Y02B30/545 Y02E10/70 Y02E10/728 B63H9/10 F05B2210/18 Y02A20/131 Y02A20/144 Y02A10/14

European: B01D61/10 B63B1/10C B63B1/12B B63B35/00 B63B35/44 B63B39/06 B63B43/06 B63G1/00 B63G8/30 B63H19/02 B63H9/06 B63H9/10 B63H9/10C B63J3/00 B64C31/04 B64C31/06 E02B3/06B F01K27/00 F02C1/05 F03B13/18B2D F03D11/04 F03D5/00 F03D5/04 F03G7/00 F24F5/00C7 F24F6/14 F28D5/00 L63B1/24 L63B35/44 L63B35/44E7 L63B35/44E9 L63B39/06R L63B43/06 L63H9/10 L63J1/00 L63J3/00 M02F1/04 P02B17/00M R05B210/18 R05B240/40 R05B240/921 R05B240/922 R05B240/931 R05B260/212 R24F1/00G1 Y02B10/30 Y02B10/50 Y02B30/14 Y02B30/54D Y02E10/38 Y02E10/70 Y02E10/72L Y02E10/72N Y02E20/18 Y02T50/67B2 Y02T50/67F2 Y02T70/59

US: 114/102 114/267 114/382 114/39.1 114/39.2 114/39.26 114/39.29 114/39.31 210/136 210/170 210/259 210/321.87 244/153.00R 244/153R 244/24 405/76 415/5 416/8 417/330 417/332 60/39.01 60/506 60/618 60/618P 60/676 60/698 60/698P 60/772 62/304 62/310 62/314 623/40

**Family:**

Publication number	Publication date	Application number	Application date
AP200704109 A0	20070831	AP20070004109	20050727
AU2005325208 AA	20060727	AU20050325208	20050727
AU2005325208 BB	20120329	AU20050325208	20050727
CA2397847 AA	20040212	CA20022397847	20020812
CA2404410 AA	20040320	CA20022404410	20020920
CA2599414 AA	20070823	CA20052599414	20050727
CN101146981 A	20080319	CN200580049207	20050727
EA200701538 A1	20081030	EA20070001538	20050727
EP1851418 A1	20071107	EP20050779535	20050727
EP1851418 A4	20090513	EP20050779535	20050727
IN05612DN2007 A	20070831	IN2007DN05612	20070719
US2005120715 AA	20050609	US20050039624	20050120
US2008155985 AA	20080703	US20050795835	20050727
US4756666 A	19880712	US19840631321	19840719
US4859146 A	19890822	US19880177599	19880405
US5027735 A	19910702	US19900472753	19900131
US5052902 A	19911001	US19860820082	19860121
US5056447 A	19911015	US19880255657	19881013
US5094595 A	19920310	US19890376002	19890815
US5435259 A	19950725	US19930097655	19930727
US5507943 A	19960416	US19910811470	19911218
US6293121 BA	20010925	US19980137499	19980820
US6327994 BA	20011211	US19970999729	19971223
US8051637 BB	20111108	US20050795835	20050727
WO06078315 A1	20060727	WO2005US26793	20050727
WO06078315 C1	20061102	WO2005US26793	20050727

Priority:

US19840631321	19840719	US19840631322	19840719	US19860820082	19860121
US19880177599	19880405	US19880255719	19881013	US19880255657	19881013
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US19970058062P	19970905	US19970999729	19971223	US19980137499	19980820
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Probable Assignee: CHRISTIAN SCHOOL OF TECHNOLOGY CHARITABLE FOUNDATION TRUST

Assignee(s): (std): CHRISTIAN SCHOOL OF TECHNOLOGY ; CHRISTION SCHOOL OF TECHNOLOGY ; CHRISTIAN SCHOOL OF TECHNOLOGY CHARITABLE FOUNDATION TRUST ; LABRADOR GAUDENCIO A ; LABRADOR GAUDENCIO AQUINO ; GAUDENCIO LABRADOR ; LABRADOR GAUDENCIO

Assignee(s): CHRISTION SCHOOL OF TECHNOLOGY CHARITABLE FOUNDATION TRUST ; CHRISTIAN SCHOOL OF TECHNOLOGY CHARITABLE FOUNDATI ; CHRISTION SCHOOL OF TECHNOLOGY CHARITABLE

Inventor(s): (std): LABRADOR GAUDENCIO A ; LABRADOR GAUDENCIO AQUINO ; CHRISTIAN SCHOOL OF TECHNOLOGY

Inventor(s): GAUDENCIO AQUINO LABRADOR ; CHRISTIAN SCHOOL OF TECHNOLOGY CHARITABLE ; LABRADOR GAUDENCIO

Agent(s): ROGER SYN AND CO PATENT AND TRADE MARK ATTORNEYS; FURMAN AND KALLIO; OYEN WIGGS GREEN AND MUTALA LLP; GAUDENCIO AQUINO LABRADOR

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

Title: TYRE PYROLYSIS.

Abstract: In a process for thermal reprocessing, in particular pyrolysing of carbon-containing starting material which has a high content of polymers, organic substances, for example used rubber, old **tyres**, plastic **wastes** or the like, by means of combustion gases originating from a combustion process, the gases and vapours coming from the thermal **decomposition** being **cooled**, **condensed** and scrubbed, the starting material is thermally decomposed by means of virtually oxygen-free combustion gases, wherein the pressure prevailing during the course of the process is determined by a hydrostatic pressure. Equipment for carrying out the process has a guide element (16) which passes combustion gases originating from the burner (4) through the starting material (17). To generate a hydrostatic pressure, an element (26, 38) bearing **pyrolysis gas** dips into an **open** vessel (25; 39) of greater diameter, filled with **liquid**.

Classifications:

International (IPC 8-9): C10B1/10 C10B49/02 C10B49/04

C10B53/00 C10B53/07 C10K1/06 (Advanced/Invention);

C10B1/00 C10B49/00 C10B53/00 C10B53/07

C10K1/00 (Core/Invention)

International (IPC 1-7): C08J11/12 C08J11/14 C10B1/10 C10B53/00

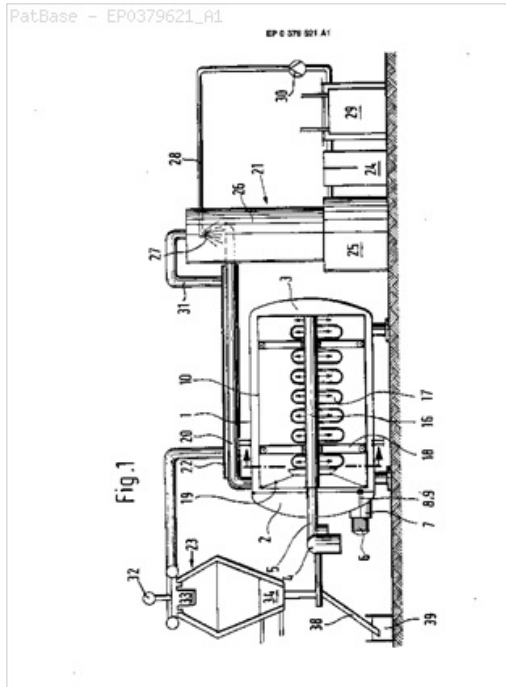
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CPC: C10B1/10 C10B49/02 C10B49/04 C10B53/00 C10B53/07

C10K1/06 Y02P20/143

European: C10B1/10 C10B49/02 C10B49/04 C10B53/00

C10B53/07 C10K1/06



Family:

Publication number	Publication date	Application number	Application date
DE3725584 A1	19890216	DE19873725584	19870801
DE3725584 C2	19891102	DE19873725584	19870801
EP0379621 A1	19900801	EP19890101391	19890127

Priority:

DE19873725584 19870801 EP19890101391 19890127

Probable Assignee:

ZINK HELMUT

Assignee(s): (std):

ZINK HELMUT

Assignee(s):

ZINK HELMUT 7441 UNTERENSINGEN DE

Inventor(s): (std):

ZINK HELMUT

Inventor(s):

ZINK HELMUT 7441 UNTERENSINGEN DE

Designated states:

DE FR GB IT

Title: APPARATUS FOR PYROLYSIS OF TIRES AND WASTE

Abstract: Source: US5167772A [EN] Method and apparatus for pyrolyzing used tires into a char fraction, wire, fiberglass, oil fraction and gas fraction. The tires are continuously conveyed to a preheating chamber where they are heated to a temperature level of 200 DEG F. to 400 DEG F. The heated tires are metered into a cavity having disposed therein a ram system, which shapes and forces the whole tire into a pipe which leads to a pyrolyzing chamber. The tires form a plug at the front end of the system to prevent the release of toxic gases into the atmosphere and also to prevent air from entering the pyrolyzing chamber. Similarly, solid residue produced by pyrolysis of the apparatus is forced into a discharge column, forming a plug to seal the system at its outlet end. An alternate embodiment of the invention apparatus operated manually can also be used for compacting, neutralizing and disposing of medical waste, infectious materials and the like as well as auto tires.

Classifications:

International (IPC 8-9): C10B31/06 C10B47/12 C10B53/00 C10B53/07 C10B7/00 C10G1/10 (Advanced/Invention); C10B31/00 C10B47/00 C10B53/00 C10B53/07 C10B7/00 C10G1/00 (Core/Invention)

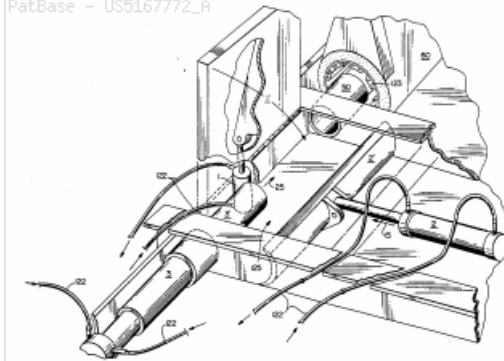
International (IPC 1-7): C10B31/00

CPC: C10G1/10 C10B7/00 C10B31/06 C10B47/12 C10B53/07 Y02P20/143

European: C10B31/06 C10B47/12 C10B53/00 C10B53/07 C10B7/00 C10G1/10

US: 100/232 201/25 201/6 202/105 202/136 202/262 414/173 414/198

PatBase - US5167772_A



Family:

Publication number	Publication date	Application number	Application date
US5167772 A	19921201	US19900526280	19900521

Priority:

US19900526280 19900521

Probable Assignee:

PARKER SR THOMAS H

Assignee(s): (std):

PARKER SR THOMAS H

Inventor(s): (std):

PARKER SR THOMAS H

Title: MOLTEN METAL **DECOMPOSITION APPARATUS**

Abstract: Source: US5435814A [EN] In an improved molten metal hydrogen generation bath, baffles form a draft tube or chimney-effect near the center of the bath. Flow through the chimney is aided by maintaining a temperature differential favoring convection and, optionally, a differential pressure between the portions of the bath on either side of the baffle-chimney arrangement. Feed is added to the feed zone and oxygen is added to the oxidation zone, emitting H₂ from the feed zone and CO from the oxidation zone. Baffles may be made simply of brick work or high temperature metal and can fit into existing refractory-lined molten metal vessels. Products can be mixed as syngas feed for Fischer-Tropsch synthesis. Additionally, the Boudouard endothermic reaction (CO₂+C → 2CO) can be used to control temperatures by injecting CO in place of oxygen.

Classifications:

International (ipc 8-9): B09B3/00 C01B17/16 C01B3/24 C10J3/06 C10J3/20 C10J3/57 C10J3/72 C10K1/02 C10K3/02 C21B11/08 C21B13/10 (Advanced/Invention);

B09B3/00 (Advanced/Non-invention);

B09B3/00 C01B17/00 C01B3/00 C10J3/00 C10J3/02 C10K1/00

C10K3/00 C21B11/00 C21B13/00 (Core/Invention)

International (ipc 1-7): B01D53/14 B09B3/00 C01B3/24 C10G9/34

C10J3/06 C10J3/20 C10J3/48 C10J3/57 C10J3/72 C10K1/02

C21B11/08 C21B13/10

CPC: C01B17/162 C10K1/004 C10K1/12 C10K1/143 C10J3/721

C10J3/723 C10J2200/158 C10J2300/0956 C10J2300/0996

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C10J2300/0946 C10J2300/0959 C10J2200/09 C10J2300/1659 C10K3/04 C01B2203/1252 C01B3/348 C01B3/10

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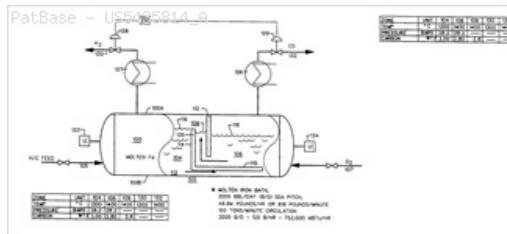
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European: C01B17/16D2 C01B3/10 C01B3/34T C10J3/57 L01J219/18B M01B203/02B4B M01B203/02D M01B203/04P8

M01B203/12B2D2 M01B203/12B2D4 M01B203/12B2D6 M01B203/16H Y02E20/18 Y02E60/36

US: 201/11 266/217 423/563 423/648.1 423/650 48/111 48/116 48/197.00R 48/197R 48/198.2 48/206 48/209 48/25 48/61

48/92 48/920 75/429 75/529 92/206 92/209 92/92

**Family:**

Publication number	Publication date	Application number	Application date
AT156511 E	19970815	AT19940903138T	19941116
AT184633 E	19991015	AT19930908347T	19930310
AU199339198 A1	19940315	AU19930039198	19930310
AU199512111 A1	19950627	AU19950012111	19941116
AU199712756 A1	19980622	AU19970012756	19961125
AU199714074 A1	19980622	AU19970014074	19961125
AU199714609 A1	19980622	AU19970014609	19961125
CA2140876 AA	19940303	CA19932140876	19930310
CA2176966 AA	19960517	CA19942176966	19941116
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CN1040968 C	19981202	CN19941004288	19940420
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CN1124295 A	19960612	CN19941012938	19941209
DE69326472 D1	19991021	DE19936026472	19930310
DE69326472 T2	20000518	DE19936026472T	19930310
DE69404861 D1	19970911	DE19946004861	19941116
DE69404861 T2	19980312	DE19946004861T	19941116
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EP0733092 A1	19960925	EP19950903138	19941116
EP0733092 B1	19970806	EP19950903138	19941116
EP0946680 A1	19991006	EP19960943538	19961125
EP0946680 A4	20030122	EP19960943538	19961125
JP2001507050 T2	20010529	JP19980526585T	19961125
JP2660102 B2	19971008	JP19930506223T	19930310
JP7506145 T2	19950706	JP19930506223T	19930310
KR19957003042 A	19950823	KR19957000536	19930310
RU94013470 A	19960427	RU19940013470	19940421
RU94013470 A1	19960427	RU19940013470	19940421
US5435814 A	19950725	US19930165068	19931210
US5577346 A	19961126	US19950421102	19950413
US5645615 A	19970708	US19950513035	19950809
US5984985 A	19991116	US19920838642	19920220
US6254652 BA	20010703	US19990308530	19990518
US6315802 BA	20011113	US19990308523	19990518
US6350289 BA	20020226	US19990308524	19990518
WO9404633 A1	19940303	WO1993US02350	19930310
WO9516010 A1	19950615	WO1994US13421	19941116
WO9823707 A1	19980604	WO1996US19081	19961125
WO9823708 A1	19980604	WO1996US19112	19961125
WO9823709 A1	19980604	WO1996US19115	19961125

Priority:

US19900542234	19900621	US19900625350	19901211	US19910763097	19910920
US19920838642	19920220	US19920930250	19920813	US19920939533	19920901
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Probable Assignee: MARATHON PETROLEUM CO LLC

Assignee(s): (std): ASHLAND PETORLEUM CO ; ASHLAND PETROLEUM COMPANY ; MARATHON ASHLAND PETROLEUM LLC ; ENVIRES LLC ; HOLCOMBE THOMAS C ; ESHLAND OJL ; INK ; INC ; AHLAND OIL INC ; ASHLAND INC ; ASHLAND OIL INC ; MALONE DONALD P ; MILLER CHARLES B

Assignee(s): WISEMAN JONATHAN A ; ASHURANDO INC ; ASHLAND INC ASHLAND ; ASHLAND INC ASHLAND KY US ; ASHALND INC ; MARATHON PETROLEUM CO ; MARATHON PETROLEUM CO LLC ; MARATHON PETROLEUM CO LP

Inventor(s): (std): HOLCOMBE THOMAS C ; MALONE D P ; MALONE DONALD ; MALONE DONALD P ; MILLER CHARLES ; MILLER CHARLES B ; WISEMAN JONATHAN ; WISEMAN JONATHAN A ; DONAL D P MEHLOUN

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Agent(s): GOWLING LAFLEUR HENDERSON LLP

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

Title: TREATING USED **TYRES** WITHOUT SEPG. OUT COMPONENTS

Abstract: Source: DE4447357A1 [EN] Treatment of used **tyres** (15) comprises passing the **tyres** (15) through the reaction stages of **pyrolysis**, gasification of **pyrolysis** prods. and Fe-water vapour reaction in a shaft-like **reactor** (I) from **top** to **bottom**. In all reaction stages a superheated water-vapour/O₂ mixt. is used, and a reaction **gas** contg. H₂ and CO produced, and Fe-rich slag are continuously removed from the **reactor** (I). An appts. for carrying out the process is also claimed.

Classifications:

International (IPC 8-9): B29B17/02 C10B1/04 C10B53/07 C10G1/02 C10G1/10 C10J3/06 C10J3/66 F23G5/027

F23G7/12 (Advanced/Invention);

B29B17/02 C10B1/00 C10B53/07 C10G1/00 C10J3/00 C10J3/02

F23G5/027 F23G7/12 (Core/Invention)

International (IPC 1-7): B29B17/00 C08J11/14 C10B53/00

C10G1/10 C10J3/58 F23G5/027

CPC: C10J2200/152 C10J2300/0946 C10J2300/0959 C10J2300/0976

C10J2300/1223 F23G7/12 B29B17/02 B29B2017/0496 B29K2021/00

B29L2030/00 C10B1/04 C10B53/07 C10G1/02 C10G1/10 C10J3/06

C10J3/66 F23G5/027 F23G2202/10 F23G2209/281 F23L2900/07005

F23L2900/07009 Y02E20/344 Y02W30/622 Y02W30/625 Y02P20/143

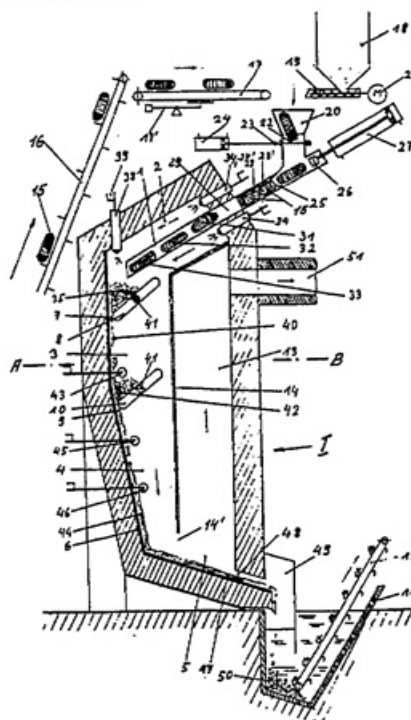
European: B29B17/02 C10B1/04 C10B53/00 C10B53/07 C10G1/02

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L29K21/00 L29L30/00 R23G202/10 R23G209/281 R23L900/07005

R23L900/07009 Y02E20/34D

PatBase - DE4447357_A1



Family:

Publication number	Publication date	Application number	Application date
DE4447357 A1	19960627	DE19944447357	19941220
DE4447357 C2	19990107	DE19944447357	19941220

Priority:

DE19944447357 19941220

Probable Assignee: UMWELTGEMEINSCHAFT RUNDUM EV

Assignee(s): (std): UMWELTGEMEINSCHAFT RUNDUM EV

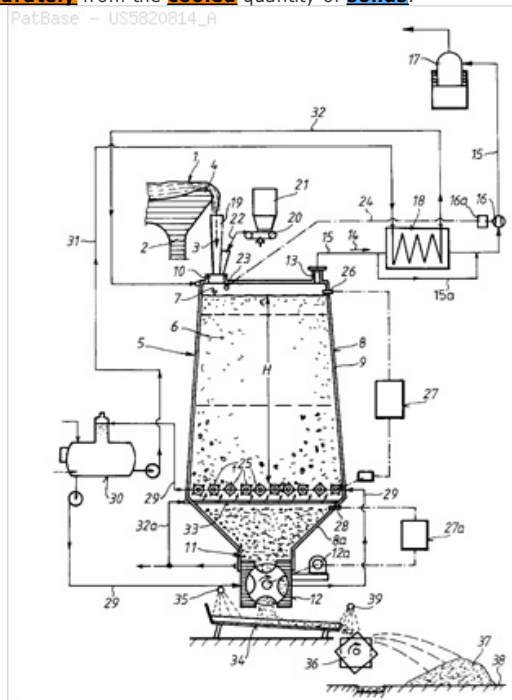
Assignee(s): UMWELTGEMEINSCHAFT RUNDUM EV 12681 BERLIN DE

Inventor(s): (std): SCHLEICHER HAGEN

Inventor(s): SCHLEICHER HAGEN 12435 BERLIN DE

Abstract: Source: US5820814A [EN] The invention relates to the **cooling** of red-hot molten blast **furnace** slag. In this case in order that a substantial proportion of the heat content of the red-hot molten blast **furnace** slag can be recovered this is introduced together with coal or fuel containing substantially coal into a **reactor** in which the blast **furnace** slag is **cooled** by utilising the heat content of this slag and with the aid of supplied steam to gasify the coal to form a fuel **gas**, particularly water **gas** or blue **gas** containing CO and H₂, which is drawn off **separately** from the **cooled** quantity of **solids**.

US: 266/201 266/44



Publication number	Publication date	Application number	Application date
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DE19522320 C1	19960822	DE19951022320	19950620
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FR2735791 B1	19971205	FR19960006984	19960606
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GB2302397 B2	19990127	GB19960008287	19960422
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RU96111968 A	19980310	RU19960111968	19960619
US5820814 A	19981013	US19960653389	19960524

Inventor(s): ZHOZE EHLI DUME[LB] ; DOUMET JOSEPH E JDEYDEH EL METN LB ; JIYOSEFU E DOYUME ; JOSEPH E DOUMET ; JOSEPH ELIAS DOUMET

Title: METHOD FOR RECOVERING CARBON BLACK FROM COMPOSITES

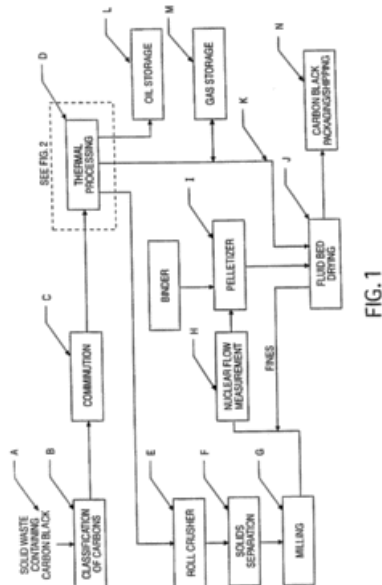
Abstract: Source: US5728361A [EN] The invention provides a method and system for continuously recovering carbon black from a plurality of composites where each one of the composites comprises carbon black and polymers. The basic method of the invention comprises a heating step which is conducted in a **reactor**. In the method, it is necessary to prepare a series of mixtures of the composites, with each one of the series comprising a distribution of carbon black properties substantially similar to the other mixtures of the series. The composites may be fragmented or comminuted into smaller pieces more suitable for **pyrolysis** and **decomposition** reactions in the **reactor**. In the **reactor**, the fragmented mixtures are heated to a temperature sufficient to crack the polymers and to form a vaporizable constituent. The vaporizable constituents are removed from the **reactor** at first and second outlet ends whereby the amount of time the vaporized constituents are in the **reactor** is reduced. That is, their residence time is reduced by the method of the invention which includes removal at two ends. The vaporized constituents are then **cooled** to form **condensate** fraction and a gaseous fraction. The gaseous fraction is then used for reinjection into the **reactor** chamber.

Classifications:

International (IPC 8-9): C09C1/48 C10B47/30 C10B53/00 C10B53/07 (Advanced/Invention); C09C1/44 C10B47/00 C10B53/00 C10B53/07 (Core/Invention)
International (IPC 1-7): C01D3/00
CPC: C10B47/30 C01P2004/61 C01P2006/12 C01P2006/19 C09C1/48 C09C1/482 C10B53/07 Y02P20/143
European: C09C1/48 C09C1/48M C10B47/30 C10B53/00 C10B53/07
US: 423/449.6 423/449.7

PatBase - US5728361_A

U.S. Patent Mar. 17, 1998 Sheet 1 of 4 5,728,361

**Family:**

Publication number	Publication date	Application number	Application date
US5728361 A	19980317	US19950551329	19951101

Priority:

US19950551329 19951101

Probable Assignee:

FERRO TECH TIRE RECLAMATION INC

Assignee(s): (std):

FERRO TECH TIRE RECLAMATION INC

Assignee(s):

FERRO TECH TIRE RECLAMATION INC

Inventor(s): (std):

HOLLEY CARL A

Title: PRECISION SPRAY PROCESSES FOR DIRECT WRITE ELECTRONIC COMPONENTS

Abstract: Source: US2002170890A [EN] This invention combines the precision spray process with in-flight laser treatment in order to produce direct write electronic components. In addition to these components, the process can lay down lines of conductive, inductive, and resistive materials. This development has the potential to change the approach to electronics packaging. This process is revolutionary in that components can be directly produced on small structures, thus removing the need for printed circuit boards.

Classifications:

International (IPC 8-9): B01J19/12 B05B1/08 B05B1/28 B05B1/30 B05B5/00 B05B5/03 B05B7/22 B05C11/00 B05C11/06 B05C19/00 B05C5/00 B05D1/02 B05D1/12 B05D1/40 B05D11/08 B05D3/00 B05D3/02 B05D3/06 B05D5/00 B05D5/06 B05D5/12 B05D7/00 B05D7/02 B07B1/26 B23K26/00 B23K26/14 B23K26/34 B29C67/00 B41J2/015 B41J2/02 B41J29/38 B81C99/00 C08F2/46 C08J7/04 C08J7/18 C23C14/30 C23C16/00 C23C18/00 C23C18/02 C23C18/14 C23C24/04 C23C24/10 C23C26/00 C23C4/08 C23C4/12 F23D11/10 G02B21/32 G02B6/00 G03F7/00 G03G13/20 G21K1/00 H01L21/20 H01L21/285 H01L21/288 H01L21/3205 H01L21/3213 H01L21/33 H01L21/336 H01L21/48 H01L21/82 H01L21/822 H01L27/04 H01L29/78 H01L29/786 H01L35/20 H01L35/34 H01S3/00 H05B6/02 H05K1/16 H05K3/00 H05K3/10 H05K3/14 (Advanced/Invention);

B01J19/12 B05B1/30 B05D1/02 G02B21/32 H01L21/60 H01L51/00 H01S3/00 H05K3/10 H05K3/22 H05K3/46 (Advanced/Non-invention); B05B1/30 B05B7/16 B05C5/00 B05D1/02 B05D1/40 B05D3/00 B05D3/06 B05D5/12 B05D7/02 B23K26/00 B23K26/14 B29C67/00 B41J2/015 C08F2/46 C08J7/00 C23C18/00 C23C24/00 C23C26/00 C23C4/12 G02B6/00 G21K1/00 H01L21/02 H01L21/70 H01L27/04 H01L29/66 H01L35/00 H01L35/12 H05K1/16 H05K3/10 (Core/Invention); H01L51/00 H05K3/22 H05K3/46 (Core/Non-invention); B23K (Subclass/Invention)

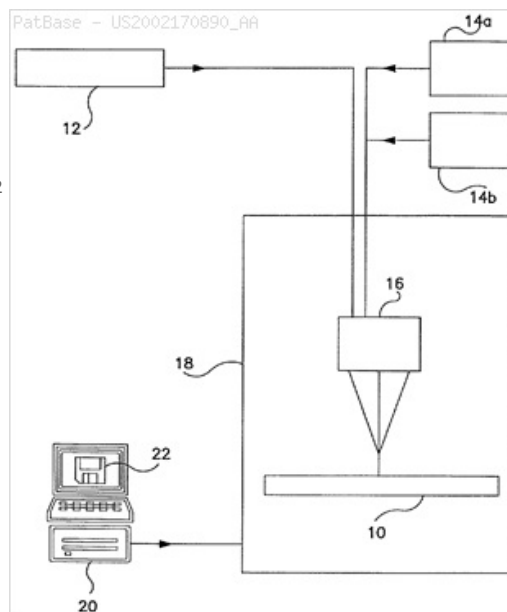
International (IPC 1-7): B01J19/12 B05B7/22 B05D1/02 B05D1/12 B05D1/40 B05D3/00 B05D3/06 B05D5/12 B05D7/02 B07B1/26 B23K B23K1/00 B23K26/00 B23K26/14 B23K26/34 B41J2/015 B41J2/02 B41J29/38 B81C5/00 C08F2/46 C08J7/04 C08J7/18 C23C16/48 C23C18/00 C23C4/12 G01N15/00 G02B1/10 G02B21/32 G02B6/00 G02B6/02 G02B6/20 G03G13/20 H01L21/285 H01L21/3205 H01L21/82 H01L21/822 H01L27/04 H01S3/00 H05K3/14

CPC: B05D3/06 C23C18/02 H01L51/0009 G21K1/006 B05B17/0615 C23C18/08 H05K3/14 B82Y10/00 B82Y40/00 G02B21/32 G03F7/0002 Y10S428/901 H01L24/742 H01L2224/11312 H01L2224/742 B05D5/12 B05D3/068 B05D5/00 C23C18/06 C23C18/14 H05K3/1241 B41J2/02 H01L21/6715 B05B7/228 C23C24/10 H05K1/16 H05K3/225 B23K26/34 H01L21/32131 H01L21/481 H01L21/4846 H05K3/4664 B23K35/0244 B23K35/0222 B23K2201/36 B41J2/215 C23C24/04 H01L24/11 H01L24/81 H01L2224/13099 H01L2224/24011 H01L2224/76155 H01L2224/81801 H01L2224/82 H01L2224/85 H01L2224/86 H01L2924/01005 H01L2924/01006 H01L2924/01013 H01L2924/01015 H01L2924/01018 H01L2924/01022 H01L2924/01023 H01L2924/01025 H01L2924/01027 H01L2924/0103 H01L2924/01033 H01L2924/01046 H01L2924/01047 H01L2924/01056 H01L2924/01074 H01L2924/01087 H01L2924/09701 H01L2924/14 H01L2924/19041 H01L2924/19042 H01L2924/19043 H01L2924/30107 H01L2924/3025 B23K26/32 B23K26/324 B23K2203/16 B23K2203/30 B23K2203/50 B23K2203/52 B23K26/144 H01L2924/12042 C08F2/46 B23K2203/172 C23C4/12 B41J2/435 H05K3/102 H05K3/125 H05K3/105 H05K2203/086 H05K2203/087 H05K2203/107 H05K2203/1344 H01L2924/19105 B29C64/153 B29C64/40 B05D1/02 H05K3/12C2 L05B17/06B1 L05D1/02 B05D3/06 B23K26/14B B23K26/34 B29C67/00R4B B29C67/00R8D B41J2/02 B82Y10/00 B82Y40/00 C08F2/46 C23C18/02 C23C18/06 C23C18/08 C23C18/14 C23C24/04 C23C24/10 C23C4/12 G02B21/32 G03F7/00A G21K1/00N H01L21/3213B H01L21/48B3 H01L21/48C4 H01L24/11 H05K1/16 H05K3/10B H05K3/10D H05K3/12C H05B17/06B1 L05D1/02 L05D3/06E L05D5/00 T01L21/60C4B T01L224/13099 T01L224/24011 T01L224/76155 T01L224/81801 T01L224/82 T01L224/85 T01L224/86 T01L24/11 T01L24/81 T01L51/00A2D2 T01L924/01002 T01L924/01013 T01L924/01015 T01L924/01018 T01L924/01022 T01L924/01025 T01L924/01027 T01L924/01046 T01L924/01056 T01L924/01074 T01L924/14000 T01L924/19041 T01L924/19042 T01L924/19043 T01L924/30107 T01L924/30250 T05K203/08E T05K203/08F T05K203/10E T05K203/13B2 T05K3/10B T05K3/14 T05K3/22B T05K3/46C6

US: 118/300 118/300S 118/308 118/309 118/500 118/62 118/621 118/63 118/641 118/642 118/686 118/698 219/121.64 239/102.2 239/296 239/338 239/418 239/573 239/573S 239/601 257/E21.306 257/E21.508 257/E21.508S 257/E21.512 257/E21.512S 347/2 347/21 347/21P 347/2P 347/6 347/6P 347/75 347/75S 385/11 385/125 385/147 385/147P 427/101 427/102 427/102S 427/117 427/120 427/124 427/126.1 427/162 427/162S 427/180 427/226 427/226S 427/248.1 427/248.100P 427/256 427/256S 427/372.2 427/372.200S 427/383.1 427/384 427/421.1 427/421.100P 427/421.100S 427/427.4 427/446 427/455 427/508 427/532 427/532S 427/553 427/553S 427/554 427/555 427/555P 427/561 427/568 427/58 427/58P 427/58S 427/591 427/596 427/596P 427/597 427/79 427/79S 427/96 427/96.1 427/96.7 427/96.8 427/98.4 427/98.400S 428/901

Family:

Publication number	Publication date	Application number	Application date
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WO06041657 C2	20060629	WO2005US34323	20050927

Priority:

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US20000574955	20000519	US20000584997	20000601	US20000587997	20000606
US20010844666	20010427	WO2001US14841	20010530	US20020060090	20020130
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US20030691341	20031021	US20030746646	20031223	US20040914525	20040809
US20040945416	20040920	US20040952107	20040927	WO2004US31803	20040927
US20040952108	20040927	US20040011366	20041213	US20050317457	20051222
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US20100976906	20101222	US20130909870	20130604		

Probable Assignee: OPTOMEC DESIGN CO

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Assignee(s): NAVY SECRETARY OF UNITED STATES OF AMERICA OFFICE OF NAVAL RESEARCH ; BOARD OF CONTROL OF MICHIGAN TECHNOLOGICAL UNIV ; HUNTER LEMNA J ; BOARD OF CONTROL OF MICHIGAN TECHNOLOGICAL UNIVERSITY ; CFD RESEARCH CORP ; OPTOMEC DESIGN CO ; MILLER W ; NAVY SECRETARY OF UNITED STATES OF AMERICA OFFICE

Inventor(s): (std): ESSIEN MARCELINO ; JYH CHERNG SHEU ; KING BRUCE H ; MARCELINO ESSIEN ; MARCELINO RENN MICHAEL J KING ; RENN MICHAEL J ; MARQUEZ GREGORY J ; SHEU JYH CHERNG ; SHEU JYH CHEMG ; SEIGAL PAM ; MARQUEZ GREG ; KING BRUCE ; KEICHER DAVID ; HUNTER LEMNA J ; GIRIDHARAN MANAMPATHY G ; FERGUSON KEVIN ; MILLER W DOYLE ; PASTEL ROBERT L ; ODDE DAVID J ; KEICHER DAVID M

Inventor(s): GREG MARQUEZ ; BRUCE KING ; MARQUEZ GREGORY ; MICHAEL J RENN ; MANAMPATHY G GIRIDHARAN ; KEVIN FERGUSON ; DAVID J ODDE ; PAM SEIGAL ; GIRIDHARAN MANAMPATHY ; ROBERT L PASTEL ; RENN MICHAEL ; DAVID M KEICHER ; W DOYLE MILLER ; MILLER W

Agent(s): MACRAE AND CO; PEACOCK MYERS AND ADAMS P C; PEACOCK MYERS PC; JEFFREY D; PEASOCK MYERS PC; PHILIP D; ASKENAZY PHILIP D; STEPHEN A; PEACOCK MYERS P C

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

Title: CONTINUOUS PACKAGING IN ENCLOSED CONDUITS

Abstract: Source: US2002110625A [EN] The invention relates to a package having a first web defining a cavity and a second web bonded to the first web, wherein the second web includes microperforations at a location that is specific to minimize the escape of **liquids** from the cavity to the exterior of the package. In one particular embodiment, the first web defines a four sided cavity with walls and corresponding flaps attached to the walls that can be folded and bonded to the cavity walls. The second web is an overwrapping lidding web, wherein microperforations are provided on the web material so that the microperforations are aligned with a flap recess, which in turn is in communication with the interior of the tray cavity. In this manner, suitable **gas** exchange can occur with minimal to no escape of **liquids** from the tray cavity.

Classifications:

International (IPC 8-9): A22C17/00 A22C17/08 A22C17/10 A22C18/00 A23B4/00 A23B4/12 A23B4/16 A23B4/18 A23B4/20 A23B4/24 A23B4/26 A23K1/18 A23L1/015 A23L1/27 A23L1/31 A23L1/312 A23L1/313 A23L1/317 A23L1/48 A23L13/00 A23L13/20 A23L13/30 A23L13/60 A23L3/015 A23L3/34 A23L3/3418 A23L3/3445 A23L35/00 A23L5/20 A23L5/40 A23P1/00 A23P1/02 A23P1/10 A61L2/16 B01D21/02 B01D21/26 B04B3/04 B32B37/00 B60K6/12 B61J1/08 B65B25/06 B65B31/00 B65B31/02 B65B47/02 B65B55/00 B65B55/12 B65B7/16 B65D21/00 B65D21/06 B65D5/42 B65D6/10 B65D77/20 B65D81/00 B65D81/20 B65D81/26 B65D81/28 B65D85/00 B65G47/61 C10L1/18 C10L5/00 C10L5/40 C12C3/04 F02B57/08 G01N21/00 G01N31/12 G01N33/12 G06Q30/00 (Advanced/Invention);

B04B1/20 (Advanced/Non-invention); A23B4/00 A23B4/12 A23B4/14 A23B4/26 A23L1/015 A23L1/27 A23L1/31 A23L1/317 A23L3/015 A23L3/34 A23P1/02 A61L2/16 B01D21/02 B32B37/00 B65B25/00 B65B31/02 B65B7/16 B65D21/06 B65D6/00 B65D77/10 B65D81/20 B65D81/26 B65D81/28 C12C3/00 G01N33/02 (Core/Invention)

International (IPC 1-7): A01J1/00 A23B4/00 A23B4/12 A23C9/12 A23L1/27 A23P1/00 B01D11/02 B61J1/08 B65B25/06 B65B31/00 B65B31/02 B65B47/02 B65B51/10 B65B55/00 B65B9/04 B65D21/00 B65D5/42 B65D77/20 B65D81/00 B65D81/20 B65D85/00 B65G47/61 C12C3/04 G01N21/00 G01N33/02

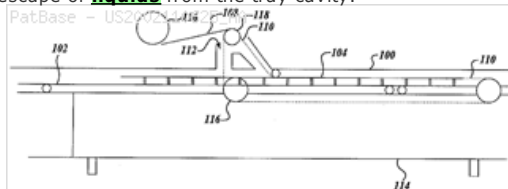
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Family:

Publication number	Publication date	Application number	Application date
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Priority:

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Probable Assignee: SAFEFRESH TECHNOLOGIES LLC

Assignee(s): (std): ATKINSON KEVAN J ; CASE READY SOLUTIONS LLC ; GARWOOD ANTHONY J ; GARWOOD ANTHONY J M ; STEPHENS ROBERT M ; SAFEFRESH TECHNOLOGIES LLC ; AGB LLC ; GARWOOD NICHOLAS J

Assignee(s): STONE MICHAEL ; TIMMERMAN SF LLC ; MILLER ANDREW W ; AMERICAN BEEF PROCESSING LLC ; ANTHONY J GARWOOD ; GARWOOD ANTHONY JM ; FEFRESH TECHNOLOGIES LLC SA

Inventor(s): (std): ANTHONY J ; ANTHONY J GARWOOD ; ANTHONY J M GARWOOD ; ANTHONY JM GARWOOD ; ATKINSON KEVAN J ; GARWOOD ANTHONY J ; GARWOOD ANTHONY J M ; GARWOOD NICHOLAS J ; STEPHENS ROBERT M

Inventor(s): KEVAN J ATKINSON ; ROBERT M STEPHENS ; GARWOOD ANTHONY JM ; GARWOOD ANTHONY

Agent(s): FREEHILLS PATENT AND TRADE MARK ATTORNEYS; FREEHILLS PATENT ATTORNEYS; FPA PATENT ATTORNEYS PTY LTD; HERBERT SMITH FREEHILLS; SMART AND BIGGAR; CHRISTENSEN OCONNOR

JOHNSON KINDNESS PLLC; FOLEY AND LARDNER; CHRISTENSEN O'CONNOR JOHNSON KINDNESS
PLLC; FOLEY AND LARDNER LLP; CHRISTENSEN; JOHNSON KINDNESS PLLC

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
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UG US UZ VC VN YU ZA ZM ZW

Title: METHOD FOR PRODUCING CLEAN ENERGY FROM COAL

Abstract: Source: US2003005634A [EN] A method for producing clean energy from coal by feeding the coal in a **reactor** which is sealed to the atmosphere and moving the coal in the **reactor** while injecting oxygen to combust a portion of the coal in a substoichiometric mode to devolatilize the coal and yield a pressurized hydrogen rich raw **gas** which contains coal-derived cancer causing distillates and hydrocarbons together with a hot char. The distillates and the hydrocarbons are cracked to result in a cracked **gas** of essentially 2H₂ and 1CO which after desulfurization becomes an ideal synthesis **gas** that can be synthesized to a **liquid** fuel for heating and transportation as an alternate to petroleum. The hot char is gasified in an air blown gasifier to produce a fuel **gas** and a molten slag which are jointly directed out of the gasifier through a common port which is maintained **open** for the free flow of both. The fuel **gas** and the molten slag **separate** from each other by flowing both **gas** and slag through a molten bath in a submerged manner in order to effectively scrub the fuel **gas** in the molten bath while it bubbles out of the bath. After **separation** the fuel **gas** is treated for sulfur removal and is in condition for use as an efficient **gas** turbine fuel for power generation by virtue of its mass, while producing very low NO_x emissions when combusted. This fuel **gas** can also be used for raising steam and for clean burning in industrial heating. The method is capable of making coke and/or activated carbon.

Classifications:

International (IPC 8-9): C01B3/02 C10J3/00 C10J3/02 C10J3/08 C10J3/16 C10J3/26 C10J3/46 (Advanced/Invention);

C10J3/08 (Advanced/Non-invention);

C01B3/00 C10J3/00 C10J3/02 C10J3/46 (Core/Invention)

International (IPC 1-7): C01J3/08 C10J3/00 C10J3/02 C10J3/08 C10J3/16 C10J3/46

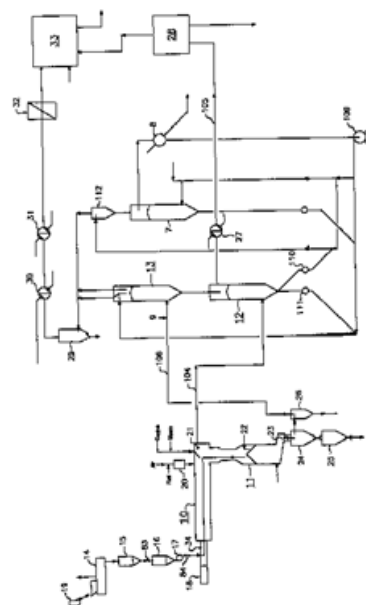
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European: C10J3/08 C10J3/16 C10J3/26 C10J3/72C C10K1/02D C10K1/02F M10J200/15 M10J200/15D M10J200/15F M10J300/09B4 M10J300/09D12 M10J300/09D14 M10J300/09D2 M10J300/09D2B M10J300/09D6 M10J300/09F14 M10J300/09F4 M10J300/12F M10J300/16D2D M10J300/16F4B M10J300/16F4F M10J300/16K M10J300/18M M10J300/18M6 M10J300/18M8 Y02E20/18 Y02E50/18 Y02E50/32

US: 110/65R 202/118 252/373 48/101 48/101S 48/144 48/144S 48/197 48/197.00R 48/197FM 48/197R 48/199 48/199.00RS 48/199FM 48/199R 48/202 48/203 48/203S 48/206 48/210 48/210P 48/219 48/219S 48/77 48/77S 60/39.02 60/39.12 60/39.182

PatBase - US2003005634_AA

Patent Application Publication Jan. 9, 2003 Sheet 1 of 3 US 2003/005634 A1



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Publication number	Publication date	Application number	Application date
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Priority:

US20010901554 20010709

WO2002US21099 20020708

WO2002US21099 20040108

Probable Assignee: CALDERON SYNGAS CO

Assignee(s): (std): CALDERON ALBERT ; CALDERON ENERGY CO OF BOW ; CALDERON SYNGAS CO ; LAUBIS TERRY JAMES ; KALDERON SINGEHZ KOMPANI ; CALDERON SYNGAS CO AN OHI

Assignee(s): CALDERON SYNGAS CO BOWLING GREEN ; CALDERON ENERGY CO OF BOWLING GREEN INC ;
CALDERON SYNGAS CO AN OHIO CORP

Inventor(s): (std): ALBERT CALDERON ; CALDERON ALBERT ; JAMES LAUBIS TERRY ; KALDERON ALBERT ; LAUBIS TERRY
JAMES ; LOBIS TERRI DZHEJMS ; TERRY JAMES LAUBIS ; LAUBIS TERY JAMES

Agent(s): SHELSTON IP PTY LTD; SHELSTON IP; MACRAE AND CO; MARSHALL AND MELHORN LLC

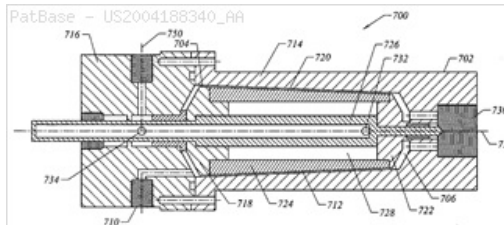
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Title: **APPARATUS** FOR **SEPARATING** PARTICULATES FROM A SUSPENSION, AND USES THEREOF

Abstract: Source: US2004188340A [EN] The present invention includes an **apparatus** for **separating** particulates from a fluid in a suspension, comprising: a housing defining a frusto-conically shaped inner chamber with an inner wall, an inlet and a first outlet communicating with the chamber, and a second outlet; and a spinning assembly with a hollow interior mounted in the chamber, the assembly being shaped to define an annular gap with the chamber inner wall, the hollow interior communicating with the second outlet, and the hollow interior communicating with the annular gap for flow of fluid materials from the gap into the interior and out of the second outlet in response to rotation of the spinning assembly. The **separator** finds application in the preparation of **waste** products such as municipal sewage sludge for processes that produce useful materials including **gas**, oil, specialty chemicals, fertilizer, and carbon **solids**, in reliable purities and compositions, and with high energy efficiency.

Classifications:

International (IPC 8-9): B09B3/00 C10G1/10 C10L3/00 C10L5/40 A01C3/00 A23K1/00 A23K1/175 A23L1/00 B01D3/00 B01D3/06 B01D3/14 B01D5/00 B01D53/00 B01D53/86 B01D63/16 B01J10/00 B01J19/00 B01J19/18 B01J3/00 B04B5/12 B09C1/02 B09C1/08 B29B17/00 C01B31/02 C01B7/00 C01B7/19 C01G1/00 C02F1/68 C02F1/70 C02F11/00 C02F11/08 C02F11/10 C02F11/18 C05B17/00 C05F1/00 C05F11/00 C05F17/00 C05F17/02 C05F3/00 C05F5/00 C05F7/00 C05F9/00 C05G1/00 C05G3/00 C07C C07C1/00 C07C1/20 C07C4/00 C07C7/00 C07C9/00 C07H15/04 C07H15/06 C07H5/04 C07H5/06 C08J11/10 C10B1/00 C10B35/00 C10B47/00



C10B53/00 C10B53/02 C10B53/07 C10B7/10 C10G1/00 C10G1/02 C10G1/04 C10G1/06 C10G3/00 C10G45/00 C10G9/00 C10L1/00 C10L1/02 C10L1/04 C10L3/06 C10L5/00 C11B13/00 C11B13/04 C11B3/00 (Advanced/Invention); B01D63/00 B09B3/00 C02F1/38 C02F103/20 C02F103/22 C02F11/10 C02F11/12 C05F1/00 C05F3/00 C05F7/00 C05F9/00 C07C1/00 C07H15/04 C07H15/06 C10G1/00 C10G1/06 C10G1/10 C10G3/00 C10L1/04 (Advanced/Non-invention); A23K1/00 A23K1/175 A23L1/00 B01D53/00 B01D53/86 B09B3/00 B29B17/00 C01B7/00 C02F11/00 C02F11/06 C02F11/10 C05B17/00 C05F1/00 C05F11/00 C05F3/00 C05F5/00 C05F7/00 C05G1/00 C07C1/00 C07H15/00 C07H5/00 C08J11/00 C10B53/00 C10B53/07 C10G1/00 C10G45/00 C10L1/00 C10L3/00 C10L5/40 C11B13/00 (Core/Invention); C05F1/00 C05F3/00 C05F7/00 (Core/Non-invention); C01B C05G C07C C10G C10L (Subclass/Invention)

International (IPC 1-7): A01C3/00 B01D53/00 B01D53/86 B01D63/16 B01J10/00 B09B3/00 B09B3/02 B09B3/02 B29B17/00 C01B7/19 C01L1/04 C02F11/00 C05F17/00 C05F17/02 C05F5/00 C05G C05G0/00 C05G1/00 C07C1/00 C07C4/00 C10B35/00 C10G1/00 C10G1/00 C10L1/00 C10L1/04

CPC: C07H5/06 C10G3/40 C10G2300/807 C02F1/02 C02F1/04 C02F1/44 C02F11/18 C02F2103/28 C02F2103/322 C02F2103/36 C02F2209/02 C02F2209/03 C05F1/00 C10G9/005 C10L1/00 C10L3/12 C10L5/40 C10G1/047 A61L11/00 B01J19/18 B01J19/20 B01J2219/00006 B01J2219/00083 B01J2219/00779 B03B9/06 C10G1/045 C10G2300/805 C10G2300/1018 C10G2300/4006 C10G2300/4012 C05F3/06 B01D3/009 B01D3/06 B01D3/148 B01D5/0036 B01D63/16 B04B5/12 C02F1/38 C02F11/10 C02F11/121 C02F2103/20 C02F2103/22 C05B17/00 C05F1/005 C05F3/00 C10B53/00 C10B53/02 C10B53/07 C10G2300/1003 C10G2300/1014 C10G2300/202 C10G2300/205 C10G2300/304 C10G2300/307 C10G2400/26 Y02E50/14 Y02E50/343 Y02E50/30 C10G1/002 C10G1/02 C10B47/00 Y02W30/43 Y02W10/33 Y02W10/37 C07C1/02 C10G3/00 Y02P30/20 Y02P20/143 Y02P20/145 Y02T50/678 Y02P20/127 C10G1/00 C10G1/10 C10L1/04 Y02A40/203 Y02A40/205 Y02A40/201

European: A61L11/00 B01D3/00R B01D3/06 B01D3/14B4 B01D5/00F10 B01D63/16 B01J19/18 B01J19/20 B03B9/06 B04B5/12 C02F11/18 C05B17/00 C05F1/00D C05F3/00 C07H5/06 C10B53/00 C10B53/02 C10B53/07 C10G1/00 C10G1/00B C10G1/02 C10G1/04E C10G1/04W C10G1/10 C10G3/00 C10G9/00L C10L1/00 C10L1/04 C10L3/12 C10L5/40 L01J219/00A2B L01J219/00B2D2D L01J219/00D2D M02F1/02 M02F1/04 M02F1/38 M02F1/44 M02F103/20 M02F103/22 M02F103/28 M02F103/32B M02F103/36 M02F11/10 M02F11/12C M02F209/02 M02F209/03 Y02E50/14 Y02E50/30

US: 201/21 201/25 201/25S 202/118 202/26 202/260 202/260S 202/262 202/262S 202/96 202/96S 208/15 208/15S 210/321.67 210/321.670S 210/321.68 210/321.680P 210/321.87 210/650 210/731 210/749 210/774 210/806 422/184.1 422/187 422/187S 422/188 422/188S 422/198 422/198S 422/600S 422/608 423/445.00RS 423/445R 423/484 423/484P 44/605 44/606 536/55.3 536/55.300 585/1 585/15 585/16 585/16P 585/1S 585/240 585/240P 585/240S 585/241 585/241P 585/242 585/310 585/310S 585/469 585/638 585/733 585/800 585/800S

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Publication number	Publication date	Application number	Application date
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Priority:

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US20080140899	20080617			US20110213454	20110819
CA20122517440	20120731				

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Inventor(s): JAMES HFREISS ; ADAMS TERRY ; FREISS JAMES HUS ; EINFELDT CRAIG TIMOTHYUS ; CARNESI MICHAEL CHARLESUS ; APPEL BRIAN SUS ; ADAMS TERRY NUS ; CRAIG TEINFELDT ; BRIAN SAPPEL ; ROBERTS MICHAEL JUS ; LANGE WILLIAM FUS ; WILLIAM FLANGE ; TERRY NADAMS ; WILLIAM F LANGE ; WILLIAM F FREISS ; TERRY N EINFELDT ; TERRY NADAMS BRIAN SAPPEL JAMES HFREISS ; S LANGE ; SHANNON M JONES ; LANGE WILLIAM ; MICHAEL CHARLES ; MICHAEL JROBERTS ; ROBERTS MICHAEL ; JONES SHANNON ; JAMES H ADAMS ; FREISS JAMES ; CARNESI MICHAEL ; CRAIG T EINFELDT ; CRAIG T JONES ; EINFELDT CRAIG ; APPEL BRIAN S ADAMS TERRY N ROBERTS MICHAEL J LANG ; APPEL BRIAN

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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 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 YU ZA ZM ZW

Title: HIGH-SPEED CHAMBER MIXER FOR CATALYTIC OIL SUSPENSIONS AS A **REACTOR** FOR THE DEPOLYMERIZATION AND POLYMERIZATION OF HYDROCARBON-CONTAINING RESIDUES IN THE OIL CIRCULATION TO OBTAIN MIDDLE DISTILLATE

Abstract: Source: US2007131585A [EN] Production of diesel oil from hydrocarbon-containing residues in an oil circulation with **separation** of **solids** and product distillation for the diesel oil product by energy input with a high-speed chamber mixer and the use of fully crystallized catalysts that consist of potassium-, sodium-, calcium-, and magnesium-aluminum silicates, wherein the energy input and conversion occur primarily in the high-speed chamber mixer.

Classifications:

International (IPC 8-9): B01D3/00 B01F13/06 B01F5/00 B01F7/02 B01J14/00 B01J19/00 B01J19/08 B09B3/00 C07C1/04 C07C4/00 C09K3/32 C10G1/00 C10G1/02 C10G1/04 C10G1/06 C10G1/08 C10G11/00 C10G31/06 C10G31/10 C10G53/00 C10G7/00 C10G7/02 C10L1/04 C10L1/08 C10L1/32 F24J3/00 (Advanced/Invention); C10G31/10 C10G7/00 C10L1/32 (Advanced/Non-invention); B01D3/00 B01F13/00 B01F5/00 B01F7/02 B01J14/00 B01J19/00 B01J19/08 B09B3/00 C05B17/00 C07C1/00 C07C4/00 C09K3/32 C10G1/00 C10G11/00 C10G31/00 C10G53/00 C10G7/00 C10L1/00 C10L1/32 F24J3/00 (Core/Invention)

International (IPC 1-7): B05D7/24 C10G C10G07/00

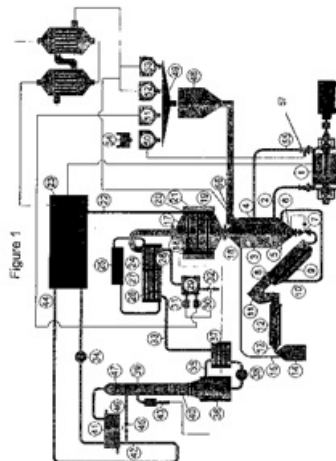
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European: C10G1/00 C10G1/00D C10G1/08 C10G1/08D C10G11/00 C10G11/16 C10G9/00 F24J3/00B M10G300/10A

US: 196/122 196/122S 202/82 202/83 203/50 208/106 208/351 366/219 585/240

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Patent Application Publication Jan. 14, 2007 Sheet 1 of 3 US 2007/0131585 A1



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Publication number	Publication date	Application number	Application date
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Priority:

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WO2007DE00623 20070404 CA20072610624 20071115

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Agent(s): NA; KAYSER CHRISTOPH; COHEN PONTANI LIEBERMAN AND PAVANE; SCHMEISER OLSEN AND WATTS

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 YU ZA ZM ZW

Title: **APPARATUS** AND METHOD FOR USING TETRAZINE-BASED ENERGETIC MATERIAL

Abstract: Source: US2009301601A [EN] The present invention comprises **apparatus** and methods employing a **gas** produced from a tetrazine-based energetic material such as that known as "BTATz" containing 3;6-BtS(1H-1,2,3,4-Tetrazol-5-ylamino)1-,2,4,5-tetrazine 3;6-BtS(1H-1,2,3,4-Tetrazol-5-ylamino)1-,2,4,5-tetrazine or salts thereof. The tetrazinebased energetic material is ignited through the use of a percussion cap, a piezoelectric crystal or a battery-supplied electric spark or by encapsulating it in a container that is then exposed to a burning flame. The **gas** produced upon ignition is employed as a propellant such as to inflate life rafts, life vests, emergency evacuation slides, **tires**, air bags and other inflatable devices. The **gas** produced upon ignition is alternatively employed to power an engine and many other applications such as a fire suppressant.

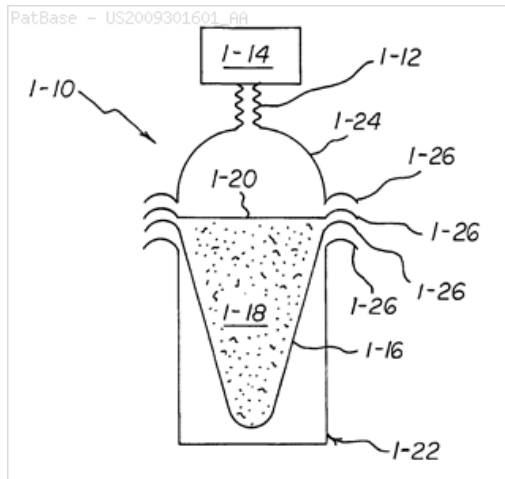
Classifications:

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B60R21/264 B63C9/08 B65B31/00 C06B45/00 C06B45/10 C06D5/00
C06D5/04 F02B45/00 (Advanced/Invention);
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F02B45/00 (Core/Invention)

CPC: Y02P20/129 C06D5/06 C06B43/00 C06D5/04 Y02T10/16

European: C06B43/00 C06D5/04 C06D5/06

US: 102/530 102/530S 123/24.00RS 123/24R 141/38 141/38P
169/12 169/12S 280/741 280/741S



Family:

Publication number	Publication date	Application number	Application date
AU2007339414 AA	20080710	AU20070339414	20070213
CA2642760 AA	20080813	CA20072642760	20070213
EP1993977 A1	20081126	EP20070861234	20070213
EP1993977 A4	20100120	EP20070861234	20070213
JP2009526649 T2	20090723	JP20080555332T	20070213
US2009301601 AA	20091210	US20070279005	20070213
WO08082427 A1	20080710	WO2007US03971	20070213

Priority:

US20060773382P 20060213 US20060855987P 20061101 US20060859058P 20061115
WO2007US03971 20070213 US20070279005 20070213

Probable Assignee: HALKEY ROBERTS CORP

Assignee(s): (std): BATTAT DAVID ; BATTAT EMILE ; ENERSON JON R ; HALKEY ROBERTS CORP ; LUCIUS JOHN D ; MACKAL GLENN ; LUCIUS JOHN H

Inventor(s): (std): BATTAT DAVID ; BATTAT EMILE ; ENERSON JON R ; LUCIUS JOHN D ; LUCIUS JOHN H ; MACKAL GLENN

Inventor(s): GLENN MACKAL ; JOHN D LUCIUS ; JON R ENERSON ; DAVID BATTAT ; EMILE BATTAT

Agent(s): A J PARK; AJ PARK; OGILVY RENAULT LLP SENCRL SRL; SCHMID WOLFGANG ET AL; GRAY ROBINSON ATTN STEFAN V STEIN IP DEPT; STEIN STEFAN V ET AL

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 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 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

Title: SUSPENDED MEDIA MEMBRANE BIOLOGICAL **REACTOR** SYSTEM AND PROCESS INCLUDING SUSPENSION SYSTEM AND MULTIPLE BIOLOGICAL **REACTOR** ZONES

Abstract: Source: US2011017664A [EN] A wastewater treatment system is provided comprising a biological **reactor** having a **separation** subsystem, a suspension system and a membrane operating system. The **separation** subsystem is constructed and arranged to maintain adsorbent material in the biological **reactor** with a mixed liquor. The suspension system is positioned in the biological **reactor** and is constructed and arranged to maintain adsorbent material in suspension with mixed liquor. The membrane operating system is located downstream of the biological **reactor** and is constructed and arranged to receive treated mixed liquor from the biological **reactor** and discharge a membrane permeate. In addition, a wastewater treatment system is provided comprising a first biological reaction zone, a second biological reaction zone and a membrane operating system. The first biological reaction zone is constructed and arranged to receive and treat the wastewater. The second biological reaction zone includes a **separation** subsystem and is constructed and arranged to receive effluent from the first biological reaction zone. A suspension system for adsorbent material is provided in the second biological reaction zone. The membrane operating system is located downstream of the second biological reaction zone and is constructed and arranged to receive treated wastewater from the second biological reaction zone and discharge a membrane permeate.

Classifications:

International (IPC 8-9): B01F3/04 B01F5/02 B01F5/04 C02F C02F1/28 C02F1/44 C02F1/52 C02F3/00 C02F3/02 C02F3/08 C02F3/12 C02F3/20 C02F3/22 C02F3/30 C02F3/34 C02F9/14 (Advanced/Invention);

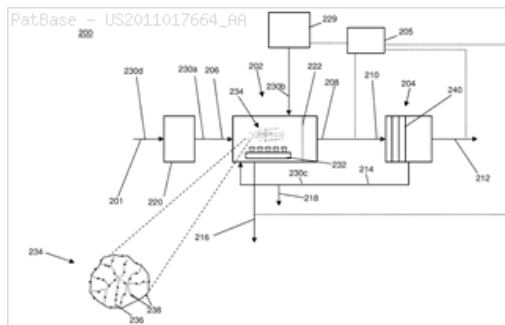
B01J19/26 C02F1/00 C02F1/28 (Core/Invention); C02F1/28 C02F1/44 C02F9/14 (Core/Non-invention); C02F (Subclass/Invention)

International (IPC 1-7): C02F3/00

CPC: Y02W10/15 C02F3/04 C02F3/085 C02F3/106 C02F3/1263 C02F3/2853 C02F2101/105 C02F2101/16 C02F2101/306 C02F2101/32 C02F2101/345 C02F2101/366 C02F2103/005 C02F2103/20 C02F2103/32 C02F2203/006 C02F2303/24 B01F5/0212 B01F5/10 C02F1/283 C02F3/006 C02F3/08 C02F3/223 C02F3/26 C02F3/302 C02F2103/06 C02F3/02 C02F2303/18 B01F3/04517 C02F1/5209 C02F3/005 C02F2003/001 C02F3/1268 C02F2101/305 C02F2101/363 C02F2209/006

European: B01F3/04C4G2B B01F5/02B2 B01F5/10 C02F3/08 C02F3/08D C02F3/12N9 C02F3/22C C02F3/28P C02F3/30D M02F1/28D M02F101/10C M02F101/16 M02F101/30E M02F101/30P M02F101/32 M02F101/34P M02F101/36B M02F101/36D M02F103/00E M02F103/06 M02F103/20 M02F103/32 M02F203/00D M02F209/00T2 M02F3/00R M02F3/04 M02F3/10K2 M02F3/12N8 M02F3/26 M02F303/24

US: 210/143 210/143S 210/150 210/150S 210/198.1 210/202 210/202S 210/259 210/259S 210/260 210/294 210/294S 210/314 210/615 210/620 210/631 210/739 210/767 210/800 210/96.2 210/96.200S



Family:

Publication number	Publication date	Application number	Application date
AR077266 AA	20110817	AR2010P102115	20100615
AU2010260194 AA	20101223	AU20100260194	20100615
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ZA201200279 A	20130327	ZA20120000279	20100615

Priority:

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US20150683887	20150410				

Probable Assignee: SIEMENS ENERGY INC

Assignee(s): (std):	PATTERSON MATTHEW ; HOWDESHELL MICHAEL ; SAUDI ARABIAN OIL CO ; SCHULTZ THOMAS E ; AL HAJRI MOHAMMED A ; CONNER WILLIAM G ; COOLEY CURT ; FELCH CHAD L ; SHAFARIK SAMUEL ; SIEMENS WATER TECH CORP ; SIEMENS INDUSTRY INC ; SIEMENS IND INC ; SIEMENS ENERGY INC
Assignee(s):	SIEMENS WATER TECHNOLOGIES HOLDING CORP ; SIEMENS WATER TECHNOLOGY CORP ; SAUDI ARABIAN OIL COMPANY ; SAUDI ARABIAN OIL COMPANYSA ; SAUDI ARABIAN OIL CO SIEMENS IND INC ; SAUDI ARABIAN OIL CO SIEMENS ENERGY INC ; SIEMENS WATER TECHNOLOGIES CORP
Inventor(s): (std):	AL HAJRI MAHAMMED A ; AL HAJRI MOHAMED A ; AL HAJRI MOHAMMED ; AL HAJRI MOHAMMED A ; AL HARJI MOHAMMED A ; CONNER WILLIAM ; CONNER WILLIAM G ; COOLEY CURT ; CURT COOLEY ; FAGEEHA OSAMA I ; FELCH CHAD K ; FELCH CHAD L ; MATTHEW PATTERSON ; MICHAEL HOWDESHELL ; HOWDESHELL MICHAEL ; PATTEERSON MATTHEW ; PATTERSON MATTHEW ; SAMUEL SHAFARIK ; SCHULTZ THOMAS ; SCHULTZ THOMAS E ; SHAFARIK SAMUEL ; SCHULTZM THOMAS E
Inventor(s):	SHAFARIK S ; THOMAS E SCHULTZ ; THOMAS SCHULTZ ; WILLIAM G CONNER ; MOHAMED A AL HAJRI ; MOHAMMED A AL HAJRI ; MOHAMMED AL HAJRI ; FELCH CHAD ; ALHAJRI MOHAMMED A ; AL-HAJRI, MOHAMMED A. ; CHAD L FELCH ; CONNER WILLIAM G ; AL HAJRI MOHAMMED A SCHULTZ THOMAS E HOWDESHELL MICHAEL FELCH CHAD L PATTERSON MATTHEW SHAFARIK S ; AL HAJRI MOHANNED A ; AL HAJRI MOHANNED A SCHULTZ THOMAS E HOWDESHELL MICHAEL FELCH CHAD L PATTERSON MATTHEW SHAFARIK S
Agent(s):	AHEARN FOX; SMART AND BIGGAR; ESTUDIO FEDERICO VILLASECA Y C; ESTUDIO VILLASECA Y CIA; ESTUDIO FEDERICO VILLASECA Y CIA; JUANITA ACOSTA GOMEZ; GERVASI GEMMA; MIZUNO KATSUFUMI; KISHIDA MASAYUKI; ABELMAN FRAYNE AND SCHWAB; CRISPINO RALPH J
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

Title: DISTILLATION **REACTOR** MODULE

Abstract: Source: US2016030856A [EN] 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.

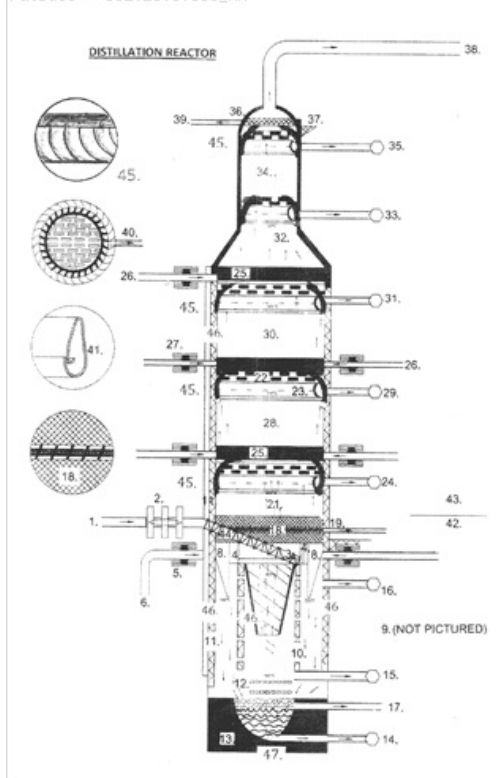
Classifications:

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 C01B17/02 C01B2203/0205 C01B2203/0283 C01B2203/043 C01B2203/0445 C01B2203/0475 C10G1/02 C10G1/10 C10G31/08 C10G75/04 Y02P20/129 B09B5/00 Y02P30/446 Y02E30/30 B01D3/10 B01D3/006 B01D3/06 B01D39/2027 F03G7/00 B01D3/009 C10G7/06 G21C1/00 G21D5/00 C10G7/00 C10G57/00 C10G7/003 C10L9/10 C10J3/72 C10G1/00 C01B17/027 C01B17/74 B01J6/008 B01J2/00 B01J19/24 B01D53/48 B01D53/62 C22B9/00 F27B17/00 C02F1/00 C22B7/00 B29B17/00 B22F3/10 B22F9/00 C22B21/00 C22B15/00 C22B13/00 H01M8/00 H01M10/54 H02K55/02 H02K7/09 B02C23/00 B03C1/00 C10L2290/544 C10J2300/093 C10J2300/0946 B22F2009/001 C01B17/48 C10G11/18 C10G33/00 C10G45/00 Y02E20/16 Y02E20/18 Y02W10/33 Y02W10/37 Y02W30/84 C01B32/05 C01B32/20 C01B32/50 Y02P10/143

US: 196/46 202/232 209/213 210/251 241/301 241/65 266/160 310/90.5 422/129 422/170 422/187 422/198 422/255 423/522 423/567.1 429/49 505/163 505/166 60/698

PatBase - US2016030856_AA

**Family:**

Publication number	Publication date	Application number	Application date
CA2907677 AA	20150921	CA20142907677	20140318
EP2969180 A2	20160120	EP20140762668	20140318
EP2969180 A4	20161005	EP20140762668	20140318
IL242590 A0	20160131	IL20140242590	20140318
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US2016032904 AA	20160204	US20140776736	20140318
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WO14146129 A3	20150129	WO2014US31118	20140318
WO14153570 A2	20140925	WO2014US38290	20140515
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Priority:

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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): KALPAN ALLEN ; KAPLAN ALLEN ; BRADLEY RANDALL**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 HW 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

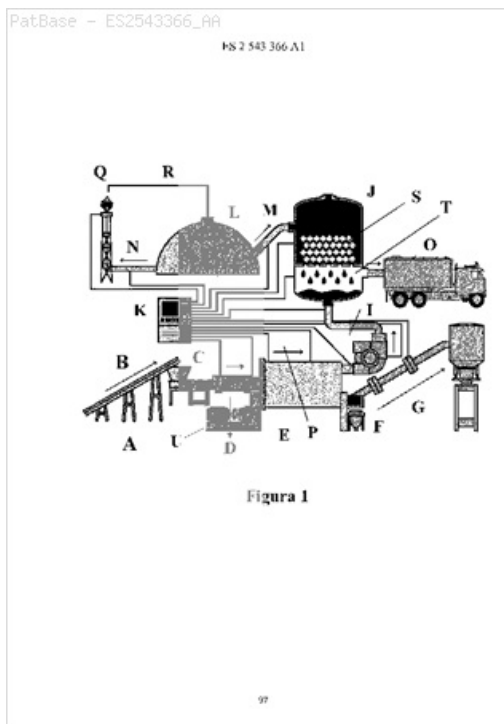
Title: PROCEDIMIENTO PARA TRANSFORMAR MATERIALES INORGANICOS, NFU, PETROLEO CRUDO EN HIDROCARBUROS Y/O ENERGIAS RENOVABLES LIMPIAS MEDIANTE UN SISTEMA DE TERMOLISIS

Abstract: Source: ES2543366A [ES] La presente invencion se refiere a un procedimiento para transformar materiales inorganicos, plasticos, gomas, NFU, aceites usados, crudo y/o derivados de los productos petroquimicos en hidrocarburos ligeros como gasolina, diesel, keroseno, nafta, etc. y/o energias renovables limpias mediante un sistema de termolisis. En definitiva un procedimiento para reciclar de forma tecnologicamente, medioambientalmente y totalmente ecologica, para hacer viable la revalorizacion tanto energetica, medioambiental, economica y materialmente de una materia prima que comprende carbono, productos y/o derivados altamente contaminantes en su composicion elemental y/o fundamental. Este procedimiento comprende: (a) una etapa de reaccion de termolisis en el interior de un **reactor** de termolisis que comprende un transportador de tornillo sinfin macizo y/o hueco, donde dicho transportador de tornillo sinfin desplaza la materia prima alimentada al **reactor** de termolisis a lo largo del mismo, a la vez que la materia prima se desvolatiliza y/o reacciona quimicamente, dando lugar a una fraccion solida carbonosa correspondiente a la materia prima convertida y a una fraccion gaseosa. (b) la adicion al **reactor** de termolisis de una corriente de **gas** que reduce la presion parcial de O₂ en el interior del **reactor** de termolisis, evitando la oxidacion y/o combustion parcial de los componentes de la fraccion gaseosa. (c) la extraccion de la fraccion gaseosa a medida que se va generando, a traves de una camara de expansion situada en el **reactor** de termolisis. (d) la **condensacion** y/o el reformado o la combustion de dicha fraccion gaseosa. (e) el enfriamiento y recogida de la materia prima convertida a traves de un tornillo sinfin enfriador de solidos. Es asimismo objeto de la invencion una instalacion para llevar a cabo dicho procedimiento. **Machine translation:** The present invention relates to a method for transforming inorganic materials, plastics, rubbers, NFU, used, oil and / or derivatives petrochemicals in light hydrocarbons such as gasoline, diesel, kerosene, naphtha oils, etc. and / or clean renewable energy by thermolysis system. In short, a process for recycling so technologically, environmentally and completely ecological, to make possible both energy, environmental, economic and material revaluation of a feedstock comprising carbon products and / or highly polluting derivatives in its elemental composition and / or fundamental. This method comprises: (a) a thermolysis reaction step within a thermolysis **reactor** comprising a conveyor worm **solid** and / or hollow, wherein said screw conveyor moves the raw material fed to the thermolysis **reactor** therealong, while the raw material is devolatilized and / or chemically reacts, resulting in a **solid** fraction corresponding to the converted feedstock and a gaseous carbonaceous fraction. (B) adding to the thermolysis **reactor** a **gas** stream reduces the partial pressure of O₂ inside the thermolysis **reactor**, preventing oxidation and / or partial combustion of the components of the gaseous fraction. (C) removing the gaseous fraction as it is generated, through an expansion chamber located in the thermolysis **reactor**. (D) the **condensation** and / or reforming or combustion of said gaseous fraction. (E) **cooling** and collecting the raw material converted via a worm gear **solids cooler**. Another object of the invention an **apparatus** for carrying out this procedure.

Classifications:

International (IPC 8-9): C10B53/07 C10G1/10
C22C1/00 (Advanced/Invention)

CPC: A44C15/0015 A44C25/001 H04N21/41407 C10G1/10
C10B53/07 C22C1/00 Y02P20/133



Family:

Publication number	Publication date	Application number	Application date
ES2543366 AA	20150818	ES20140030201	20140215
ES2543366 BA	20160525	ES20140030201	20140215

Priority:

ES20140030201 20140215

Probable Assignee: TECHNOKONTROL CAT GLOBAL S L

Assignee(s): (std): TECHNOKONTROL CAT GLOBAL S L ; TECHNOKONTROL GLOBAL LTD

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Inventor(s): (std): CANADA SIERRA LAURA

Inventor(s): LAURA CANADA SIERRA

Title: DEVICE FOR THE CONTINUOUS THERMAL PROCESSING OF USED OR OTHERWISE DEGRADED **TYRES**

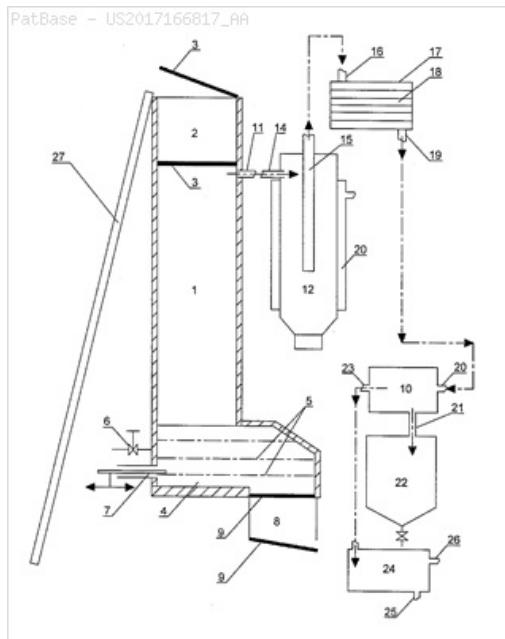
Abstract: Source: US2017166817A [EN] The device for the continuous processing of used or otherwise degraded **tyres** consists of a **reactor** (1) for the thermal **decomposition** of these **waste tyres** into the organic **decomposition** products in the form of low molecular hydrocarbons, and residual inorganic **waste** shares. In the upper part of the **reactor** (1) there is created a filling chamber (2) with a pair of filling **closures** (3) for filling its internal space by the **waste tyres** and in the **bottom** part of the **reactor** (1) there is formed the **output** chamber (8) of the residual inorganic shares with a pair of **output closures** (9), while in the lower part of the **reactor** (1) there are arranged the **nozzles** (5) for generating of a mild gaseous inert medium by oxidation of unreacted residues of organic matter from the processed **tyres**. In the upper part of the inner space of the **reactor** (1) under the filling chamber (2) is then created at least one **output opening** (11) of this inert **gas** media, which, together with the therein dispersed organic decomposed products in the form of aerosol, is led through the **separator** (12) of **solid** particles and a **cooler** (17) into a **separator** (10) of **liquid** particles from the **cooled** aerosol which is equipped with the first end **output** (21) of the **liquid** particles into the tank (22) and, second, between-operating **output** (23) of the gaseous particles, which are led to the direct energy use by combustion in thermal machines or in a convenient implementation they are driven into the freezing chamber (24) for the **separation** of gases with a **condensing** temperature above the temperature in this chamber. From freezing chamber (24) there is ended up the second end **output** (25) of one part in it non-**condensed** gases and the third end **output** (26) of the remaining part in it non-**condensed** gases.

Classifications:

International (IPC 8-9): B09B3/00 C08J11/04 C08J11/10 C08J11/12 C09C1/48 C10B C10B49/02 C10B53/07 C10G1/10 C10K1/02 C10K1/04 F23G5/00 F23G7/00 F23G7/12 (Advanced/Invention); C10B53/07 (Core/Invention)

International (IPC 1-7): C10B49/02 C10G1/10 C10K1/04

CPC: C10B49/02 C10B53/07 C10G1/10 C10K1/026 C10K1/04 Y02P20/143



Family:

Publication number	Publication date	Application number	Application date
AU2015299450 AA	20160211	AU20150299450	20150806
BR112017002229 A2	20180116	BR20171102229	20150806
CA2956104 AA	20170124	CA20152956104	20150806
CL2017000299 A1	20171030	CL20170000299	20170206
CN106661470 A	20170510	CN201580040528	20150806
CO20170001257 A2	20170420	CO20170001257	20170209
CU201700008 A7	20170704	CU20170000008	20150806
CZ20140534 A3	20160224	CZ20140000534	20140807
CZ305732 B6	20160224	CZ20140000534	20140807
DE212015000151 U1	20170302	DE201521000151U	20150806
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EA201790333 A1	20170630	EA20170090333	20150806
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MD201700008 U2	20170831	MD2017S000008	20150806
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TH173549 A	20180222	TH20171000589	20150806
TR201701668 T1	20170821	TR20170001668T	20150806
US2017166817 AA	20170615	US20150319177	20150806

Priority:

CZ20140000534 20140807 WO2015CZ00087 20150806

Probable Assignee: ALPAJAR GROUP SRO**Assignee(s):** (std): ALPAJAR GROUP S R L ; ALPAJAR GROUP S R O**Assignee(s):** ALPAJAR GROUP SRO ; VASICEK ALOIS ; ALPAJAR GROUP SRL**Inventor(s):** (std): ALOIS VACICEK ; VASICEK ALOIS ; VAŠICEK ALOIS**Inventor(s):** ALOIS VASICEK**Agent(s):** GRIFFITH HACK; RIDOUT AND MAYBEE LLP; HASBLEYDI LIZBETH CALVO ROJAS; JECK ANTON; ROEB MARIA; HARAKENZO WORLD PATENT AND TRADEMARK; MARGINE ION; HATICE TOKSOY; BAROVA PETRA**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

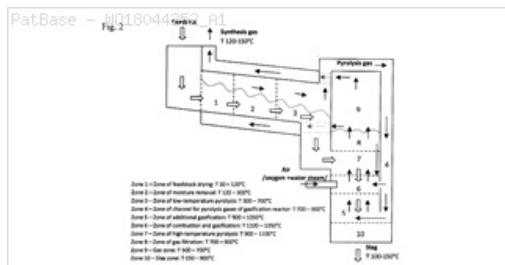
Title: METHOD OF CONVERSION OF MUNICIPAL **SOLID** AND OTHER CARBON-CONTAINING **WASTE** INTO SYNTHESIS **GAS** AND THE EQUIPMENT BASED ON THIS METHOD

Abstract: The invention relates to a method and a device of thermochemical conversion of municipal **solid waste** and other carbon-rich feedstock with high content of tars into synthesis **gas**. Conversion occurs in a two-stage process of **pyrolysis** (zones 1-3, 7) and subsequent updraft gasification (zones 4-6, 8-10) of fluidized bed of carbonaceous feedstock residue in a slow air-and-**gas** flow. Zones 1-3 are zones of low- temperature processing of feedstock and located in the **pyrolysis** part of device. Zones 4-10 are zones of high-temperature processing of feedstock and located in the gasification part of device. The **pyrolysis** part of device consists of feedstock loading device (1), rotary kiln of indirect heating (2), device for discharging dust **gas** residue (3). The gasification part of device consists of gasifier (5), a unit for feeding carbonaceous feedstock residue in gasifier (4) and a unit for unloading of the slag (6). The invention also use synthesis **gas** in the ways presented herein.

Classifications:

International (IPC 8-9): B09B3/00 C05C9/00 C10B1/10 C10B47/30 C10B53/00 C10J3/56 C10J3/66 F01K25/14 F02C3/28 F23G5/027 F23G5/20 (Advanced/Invention)

CPC: B09B3/00 B09B3/0083 B09B3/0091 C05C9/00 C10B47/30 C10J3/56 C10J3/66 F01K25/14 F02C3/28 F23G5/027 F23G5/20 C10B53/00



Family:

Publication number	Publication date	Application number	Application date
WO18044252 A1	20180308	WO2017UA000086	20170823

Priority:

UA20160009275 20160905

Probable Assignee: STRYZHAK SERGII

Assignee(s): (std): STRYZHAK SERGII

Inventor(s): (std): STRYZHAK SERGII

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 DJ 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 JO JP KE KG KH KM KN KP KR KW 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