

Base : FAMPAT

SEARCH STRATEGY

SS Results

4	12	1 AND QUENCH+ AND PD<2017-11-17
3	60	2 AND PD<2017-11-17
2	61	1 AND PHOSPHORIC AND (ROCK+ OR MINERAL+)
1	639	(PHOSPHAT+ AND FERTILISER+ AND FURNACE)/TX/BI/SA/KEYW/IN/PA

12 Documents

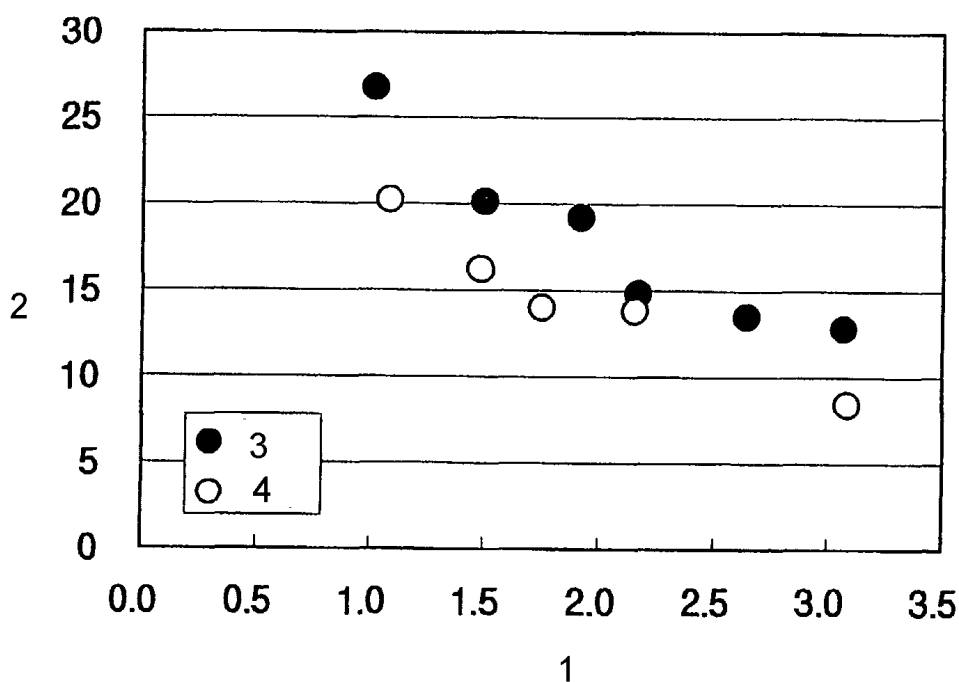
Publication numbers	Title	Current assignees
WO200337824 A1	Raw material for silicate phosphate fertilizer and method for production thereof	NKK - NIPPON KOKAN
GB-721876 A	Phosphate fertilisers and a process for their preparation	STAHLWERKE BOCHUM, ...
GB-723136 A	Phosphate fertilisers and a process for their preparation	AUGUST THYSSEN HUEETTE, ...
IL--36119 A	Controlled reaction systems	PARKSON
DE102012014357 B3	Method and plant for recovering material and/or energy from phosphorus-containing waste	MALLON JOACHIM, ...
KR20110021115 A	Potassium silicate fertilizer and process for preparing the same	POS CERAMICS
DE2408410 A1	Granules of lime stone, their production and their applications.	CALCIUM PRODUCTS
WO2006128286 A1	A low temperature gasification facility with a horizontally oriented gasifier	PLASCO ENERGY
DE2235531 A1	Method and apparatus for electrostatic removal of particulate from a gas stream	SANDOZ
WO2009115549 A2	Method and device for producing synthesis gas from biomass	KARL-HEINZ TETZLAFF, ...
CA2095946 A1	Process for the conversion of waste incineration residues to a non-polluting product and useful for constructional purposes	HOLCIM
WO201003968 A2	Method and device for producing low-tar synthesis gas from biomass	KARL HEINZ TETZLAFF

Family 1/12 - FAMPAT - ©Questel

Title

(WO200337824)

Raw material for silicate phosphate fertilizer and method for production thereof

Images1...BASICITY (CaO/SiO_2)

2...CONTENT OF SOLUBLE SILICATES (MASS %)

3...RAPID COOLING

4...SLOW COOLING

Publication data including kind & date

WO03037824	A1	2003-05-08	WO200337824
TW200300750	A	2003-06-16	TW200300750
CN1481346	A	2004-03-10	CN1481346
JP2004137136	A	2004-05-13	JP2004137136
BR0206555	A	2004-06-22	BR200206555
BRPI0206555	A1	2004-06-22	BRPI0206555
KR20040060838	A	2004-07-06	KR20040060838
IN0707/KOLNP/2004	A	2006-04-21	IN2004KN00707
BRPI0206555	A2	2010-09-21	BR200206555

**Abstract**

(WO200337824)

A raw material for a silicate phosphate fertilizer comprising a slag recovered in a pre-treatment process for a blast furnace hot-metal which contains silicates as oxides of silicon in the hot-metal and phosphates as oxides of phosphorus and contains acid-soluble silicic acid in an amount of 10 mass % or more and a method for producing the raw material which comprises adding a CaO source and an oxygen source to the hot-metal in the pre-treatment process for a blast furnace hot-metal to effect the oxidation of silicon and the dephosphorization of the hot-metal, and recovering a slag containing

silicates and phosphates formed by the above reactions, followed by solidification, to thereby produce a slag containing acid-soluble silicic acid in an amount of 10 mass % or more and also phosphates. The raw material has excellent properties as a fertilizer, since it exhibits excellent characteristics of dissolution of silicates and improved absorption of silicates by a plant, due to the effect of co-existing phosphates, and also acts as a phosphate fertilizer, and it can be produced at a markedly reduced cost since the slag recovered in a pre-treatment process for a hot-metal can be used as it is.

Inventors

YAO YASUKO

WATANABE KEIJI

TAKAHASHI TATSUHITO

INOUE SHIGERU

Latest standardized assignees - inventors removed

NKK - NIPPON KOKAN

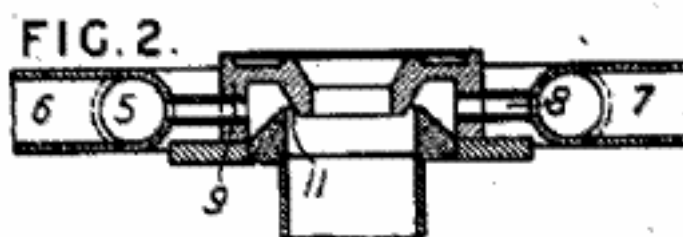
Family 2/12 - FAMPAT - ©Questel

Title

(GB-721876)

Phosphate fertilisers and a process for their preparation

Images



Publication data including kind & date

[GB721876](#)

A 1955-01-12 GB-721876



Abstract

(GB-721876)

A fertilizer essentially comprising calcium phosphate is produced by melting a phosphate, and **quenching** and granulating the molten mass so that the resulting particles have to an extent of 95 per cent by weight a size of 0.05-**1** mm. and a greater energy content than silico-carnotite. (The expression "greater energy content than silico-carnotite" is explained.) The particles have a vitreous structure. If larger grains are produced they are broken down; the 5 per cent by weight smaller than 0.05 mm. may be left in the product. The higher the ratio P₂O₅:other acids (SiO₂, B₂O₃, Al₂O₃ &c.) in the product, the smaller should be the particles. Chilling may be effected with water or steam, except that in this case, the vitreous form is obtained only when there are present with the phosphates equivalent or even larger quantities of metasilicates, borates, aluminates, &c. Irrespective of the proportions of these substances present, chilling may be effected with air or other gas in the absence of water or steam; or by contact with cool surfaces e.g. water cooled metal sheets. Fig. 2 shows a device for granulating the molten phosphate, air under pressure being supplied via tubes 6, 7 annulus 5 and radial distribution tubes 8 to an annular slot 11. In another construction, air is supplied tangentially to an annular chamber communicating directly with the annular slot surrounding the nozzle. The surface of the molten phosphate, e.g. Thomas slag, to be **quenched** may be enlarged with an inflating or foaming agent, e.g. coal tar, &c. Thus, tar or other gas-evolving substance may be spread on the surface of the metal sheets; or air charged with coke dust is used to blow the slag out of the converter, or is directed against the slag flowing therefrom. Atomized oil may alternatively be used. In most instances, other than in the case of Thomas slag, the phosphates are melted in shaft furnaces, which may be fired under oxidizing conditions by oil or gas burners. When coke is used, producing reducing conditions, loss of phosphorus is minimized by adding iron, iron ore, or a phosphate rich in iron, or by melting the raw phosphate with blast furnace slag, or other vitrifying additives, e.g. magnesia-containing minerals and slags, aluminates, borates, silicates, alkali metal compounds and fluorides.

Latest standardized assignees - inventors removed

STAHLWERKE BOCHUM

HUTTENWERK HORDE

HUTTENWERK HUCKINGEN

WESTFALENHUTTE DORTMUND

Family 3/12 - FAMPAT - ©Questel

Title

(GB-723136)

Phosphate fertilisers and a process for their preparation

Publication data including kind & date[GB723136](#)

A 1955-02-02 GB-723136

**Abstract**

(GB-723136)

A fused phosphate fertilizer comprising essentially calcium phosphate whose particles have a greater energy content than silico-carnotite, this term having the meaning stated in the parent Specification is characterized in that 95 per cent by weight of the particles have a grain size of 0.09 to 0.12 mm. The structure may be vitreous or finely crystalline, the latter being obtained by accelerating the cooling of another phosphate, which also results in the phosphate portion of the fertilizer being enclosed by other constituents. The particles may also be present as mixed crystals, the phosphate being unenclosed, this structure being obtained by milder **quenching** and/or by adding alkalis, alumina, silicic acid or fluorides. ALSO: A fused phosphate fertilizer comprising essentially calcium phosphate whose particles have a greater energy content than silico-carnotite, this term having the meaning stated in the parent Specification, is characterized in that 95 per cent. by weight of the particles have a grain size of 0.09 to 0.12 mm. The structure may be vitreous or finely crystalline, the latter being obtained by accelerating the cooling of the molten phosphate, which also results in the phosphate portion of the fertilizer being enclosed by the other constituents. The particles may also be present as mixed crystals, the phosphate being un-enclosed, this structure being obtained by milder **quenching** and/or by adding alkalis, alumina, silicic acid or fluorides.

Latest standardized assignees - inventors removed

AUGUST THYSEN HUEETTE

HOERDER HUETTENUNION

Family 4/12 - FAMPAT - ©Questel

Title

(GB1319182)

Controlled reaction systems

Images

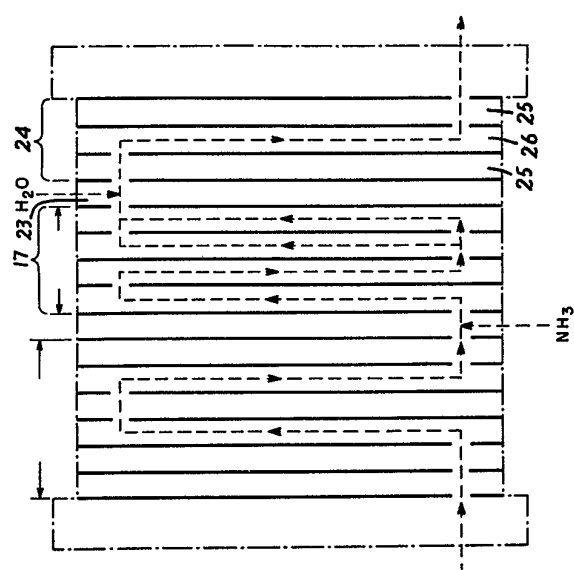


FIG. 3

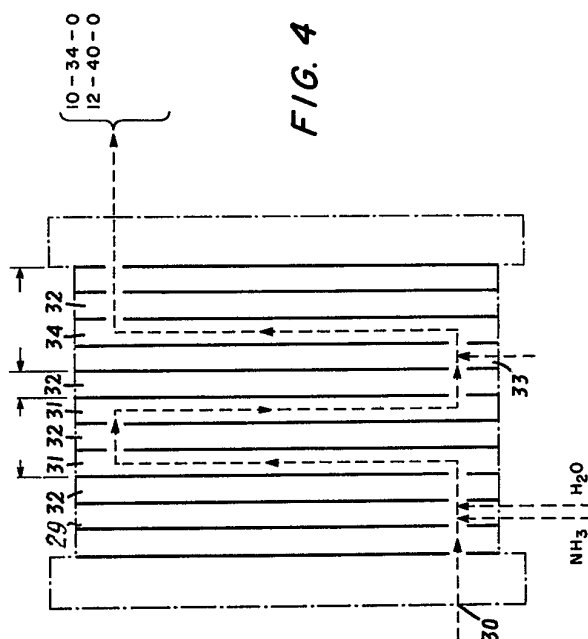


FIG. 4

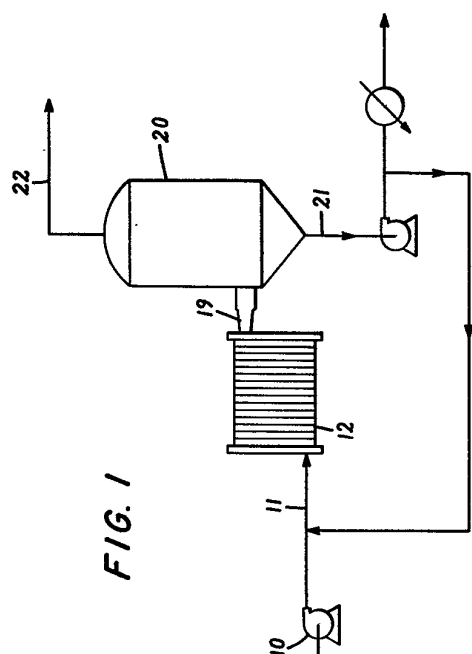


FIG. 1

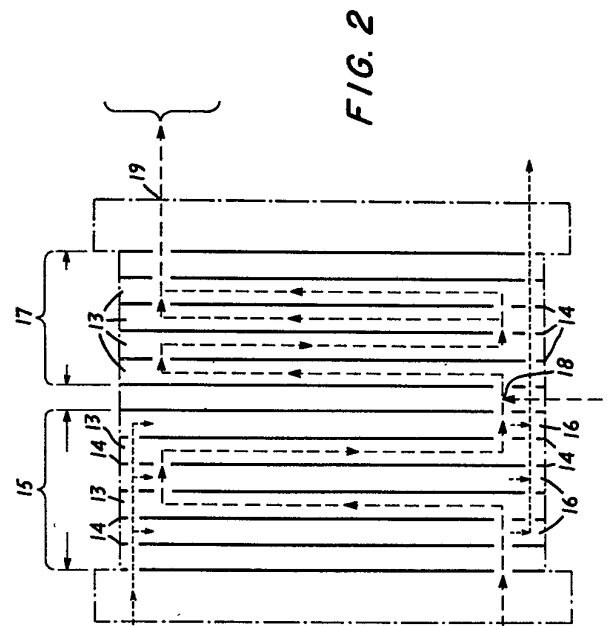
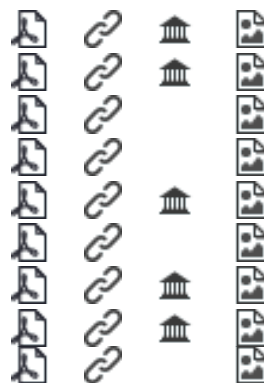


FIG. 2

Publication data including kind & date

IL36119	A	1971-04-28	IL--36119
BE762662	A	1971-08-09	BE-762662
IE35207	L	1971-08-09	IE3500207
NL7101709	A	1971-08-11	NL7101709
DE2106082	A1	1971-08-12	DE2106082
ZA7100795	B	1971-10-27	ZA7100795
FR2087779	A5	1971-12-31	FR2087779
CH527767	A	1972-09-15	CH-527767



BR7100898	D0	1973-05-03	BR7100898				
GB1319182	A	1973-06-06	GB1319182				
AR196291	A1	1973-12-18	AR-196291				
ES387989	A1	1974-02-01	ES-387989				
IL36119	B	1974-07-31	IL--36119				
IE35207	B1	1975-12-10	IE--35207				
SE386376	B	1976-08-09	SE-386376				
CS172341	B2	1976-12-29	CS-172341				
CA1009823	A	1977-05-10	CA1009823				
NL153096	B	1977-05-16	NL-153096				
NO137136	B	1977-10-03	NO-137136				
JPS5242741	B2	1977-10-26	JP77042741				
NO137136	C	1978-01-11	NO-137136				
HU171497	B	1978-01-28	HU-171497				
BRPI7100898	A1	1993-09-08	BR7100898				

Abstract

(FR2087779)

1319182 Gas/liquid contact PARKSON CORP 19 April 1971 [9 Feb 1970] 21136/71 Heading B1F [Also in Division C1] A method of chemically reacting a gas and a liquid comprises continuously injecting the gas into a confined stream of the liquid flowing at a controlled rate, passing the gasliquid mixture through a tortuous flow path comprising parallel passes within a plate-type reactor to induce turbulence, controlling the temperature and pressure within the flow path to effect complete reaction, and removing the product from the flow path. Figs. 2, 3, 4 illustrate alternative plate reactors for the ammoniation of phosphoric acid, indicated diagrammatically as 12 in Fig. 1. In Fig. 2 phosphoric acid of 32-72% P₂O₅ content enters preheat zone 15 at line 11 and takes a flow path comprised by adjacent parallel passes 13 between plates 14, steam being supplied through three alternate passes 16 to heat the walls of the two intervening passes 13. Optionally the acid may be partially pre-ammoniated at entry. The acid then passes from preheat zone 15 to reaction cone 17, ammonia being injected into the stream at point 18 between the zones by means of an injection plate. The mixture then takes a tortuous flow path through zone 17 as shown by the arrowed lines. Reaction occurs with the evolution of water vapour, and a stream comprising water vapour, molten ammonium polyphosphate and unreacted NH₃, if any, accelerates towards outlet 19. As in Fig. 1, this stream passes to cyclone separator 20 which discharges the phosphate at line 21 and the gases at 22. The gaseous effluent may be scrubbed with feed acid to extract unreacted NH₃. In Fig. 3 (not shown) a further injection plate 23 is inserted after zone 17 to introduce water to **quench** the product and produce an aqueous fertiliser solution directly. From plate 23 the mixture enters cooling zone 24 comprising two passes 25 through which coolant circulates to cool intervening pass 26. In Fig. 4 (not shown) there is no preheat zone and the first plate is an injection plate through which NH₃ is injected into the superphosphoric acid entering at 30. The passes 31 comprising the reaction zone are cooled by alternate cooling passes 32 to prevent the polyphosphate reverting to orthophosphate. A composite fertiliser may be produced by injecting water, clay, potassium solutions and micronutrients at plate 33. The product then passes through cooling pass 34 and out of the reactor.

(From GB1319182 A)

Inventors

PAUL SHERIDAN MINOR

Latest standardized assignees - inventors removed

PARKSON

Family 5/12 - FAMPAT - ©Questel

Title

(EP2874763)

Method and plant for recovering material and/or energy from phosphorus-containing waste

Images

Mischung Schmelzleistung	[Satz 1 bis Satzende]	kg/h	II 248	IV 315
Sauerstoff	Menge Ø	Nm³/h	25	22
Luft	Menge Ø	Nm³/h	251	143
Luft	Temperatur Ø	°C	236	217
Oberfeuer	[visuell eingeschätzt]		normal	stark

Publication data including kind & date

DE102012014357	B3	2013-09-05	DE102012014357				
CA2877061	A1	2014-03-13	CA2877061				
WO2014036983	A2	2014-03-13	WO201436983				
WO2014036983	A3	2014-05-08	WO201436983				
EP2874763	A2	2015-05-27	EP2874763				
EP2874763	B1	2017-08-23	EP2874763				
DK2874763	T3	2017-12-04	DK2874763T				
ES2647616	T3	2017-12-22	ES2647616				

Abstract

(EP2874763)

The invention relates to a method and a plant for recovering material and energy from phosphorus-containing waste by means of an air-assisted smelting-gasification and/or oxygen-assisted smelting-gasification process in metallurgical shaft furnaces. In said method, the phosphorus and/or phosphorous compounds reaching the gas phase in metallurgical shaft furnaces during the method-specific recovery of material and energy from phosphorus-containing waste by means of air-assisted and/or oxygen-assisted smelting-gasification can be easily separated and be used for metallurgical material recycling processes without having to go through a complex wet gas purification process combined with an integrated **quenching** step to obtain cooling to about 5°C, e.g. because of organic residues contained in the waste.

Inventors

MALLON JOACHIM

SCHAAF MICHAEL

Latest standardized assignees - inventors removed

MALLON JOACHIM

SCHAAF MICHAEL

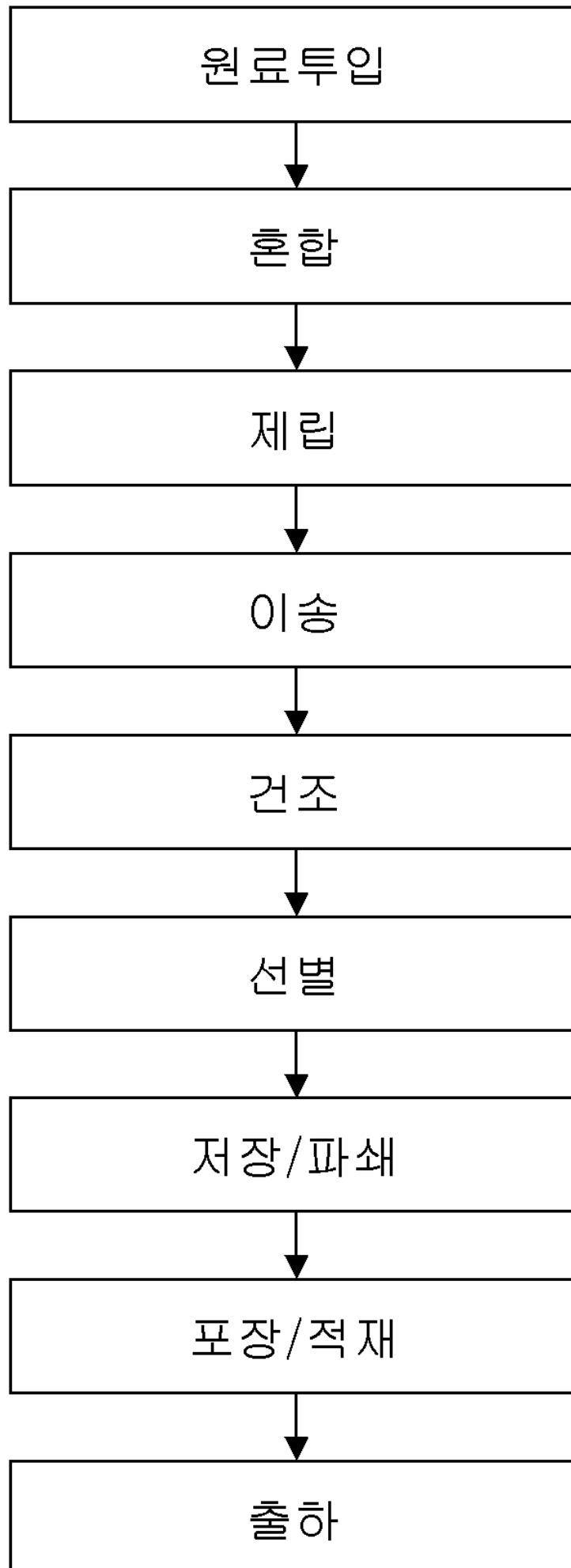
Family 6/12 - FAMPAT - ©Questel

Title

(KR101131781)

Potassium silicate fertilizer and process for preparing the same

Images



Publication data including kind & date

KR20110021115	A	2011-03-04	KR20110021115
KR101131781	B1	2012-03-30	KR101131781

**Abstract**

(KR101131781)

PURPOSE: A potassium silicate fertilizer is provided to impart effects to soil and seeds by analyzing necessary components for thea Sinensis Linn or coconut palm and directly producing optimal requirements. CONSTITUTION: A potassium silicate fertilizer comprises 60-90 weight% of granulated slag powder, 5-30 weight% of potassium compound, 5-20 weight% of granulating agent. A method for manufacturing the potassium silicate fertilizer comprises the steps of: drying **quenched** blast furnace slag through a drying line and pulverizing it with a ball mill; mixing 60-90 weight% of **quenched** blast furnace slag powder with 5-30 weight% of potassium compound; spraying 5-20 weight of granulation agents to the mixture to form granules; transferring the granulated fertilizer to a dry line and drying it; screening the dried fertilizer in a size of **1.5-5.5mm**; and storing and packaging the selected fertilizer.

Inventors

OH, MYUNG-HWAN

LEE, SEUNG LO

Latest standardized assignees - inventors removed

POS CERAMICS

Family 7/12 - FAMPAT - ©Questel

Title

(FR2218932)

Granules of lime stone, their production and their applications.

Publication data including kind & date

DE2408410	A1	1974-08-29	DE2408410
FR2218932	A1	1974-09-20	FR2218932
ZA7401179	B	1975-01-29	ZA7401179
JPS5047886	A	1975-04-28	JP50047886
AU6581574	A	1975-08-21	AU7465815
GB1465073	A	1977-02-23	GB1465073
FR2218932	B1	1977-09-23	FR2218932
CA1019355	A	1977-10-18	CA1019355
SE397517	B	1977-11-07	SE-397517

**Abstract**

(FR2218932)

1465073 Granules of calcium and/or magnesium-bearing materials AMERICAN PELLETIZING CORP 22 Feb 1974 [23 Feb 1973] 8073/74 Headings C1A and C1B [Also in Divisions A2 and E1] Granules, which disintegrate when in contact with water (and are suitable for use as a soil neutralizer and conditioner) consist of 90 to 98%, by wt., of finely divided limestone, dolomitic limestone, burned lime, marl, oyster shells or slag and 2 to 10%, by wt., of sodium bentonite, calcium bentonite or montmorillonite as a binding agent, the granules being of a size that they will pass a 4 mesh screen and be retained on a 60 mesh screen (U.S. Bureau of Standards screen series). The granules are prepared by mixing the dry materials, optionally with grinding, agitating the mixture and gradually adding from 6 to 15%, by wt., of water, based on the weight of the dry materials, to the dry mixture to form granules, drying the granules at 200° to 600° F., and screening the dried granules to recover the granules of required size.

(From GB1465073 A)

Inventors

PERRINE PAUL MELVIN

Latest standardized assignees - inventors removed

CALCIUM PRODUCTS

AU2007247893	A1	2007-11-15	AU2007247893				
US20070266633	A1	2007-11-22	US20070266633				
US20070266634	A1	2007-11-22	US20070266634				
US20070266632	A1	2007-11-22	US20070266632				
WO2007143673	A1	2007-12-13	WO2007143673				
CA2654367	A1	2007-12-13	CA2654367				
AU2007256686	A1	2007-12-13	AU2007256686				
US20070284453	A1	2007-12-13	US20070284453				
US20070289216	A1	2007-12-20	US20070289216				
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WO2007131241	A3	2008-01-03	WO2007131241				
WO2007131236	A3	2008-01-03	WO2007131236				
WO2007131234	A3	2008-01-03	WO2007131234				
IN2072/MUMNP/2007	A	2008-01-18	IN2007MN02072				
WO2008011213	A2	2008-01-24	WO200811213				
CA2651449	A1	2008-01-24	CA2651449				
AU2007275600	A1	2008-01-24	AU2007275600				
EP1888717	A1	2008-02-20	EP1888717				
EP1896553	A1	2008-03-12	EP1896553				
KR20080028409	A	2008-03-31	KR20080028409				
WO2008011213	A3	2008-04-10	WO200811213				
TW200817501	A	2008-04-16	TW200817501				
KR20080040664	A	2008-05-08	KR20080040664				
TW200823284	A	2008-06-01	TW200823284				
AR060789	A1	2008-07-10	AR--60789				
IN0006/DELNP/2008	A	2008-07-11	IN2008DN00006				
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WO2007143673	A8	2008-07-31	WO2007143673				
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PE10532008	A1	2008-09-26	PE200801053				
CN101278034	A	2008-10-01	CN101278034				
WO2008117119	A2	2008-10-02	WO2008117119				
CA2703808	A1	2008-10-02	CA2703808				
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UY30689	A1	2009-01-05	UY--30689				
UY30688	A1	2009-01-05	UY--30688				

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KR20090009950	A	2009-01-23	KR20090009950				
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GB0823454	D0	2009-01-28	GB200823454				
GB2451411	A	2009-01-28	GB2451411				
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KR20090012261	A	2009-02-02	KR20090012261				
EP2019981	A2	2009-02-04	EP2019981				
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EP2021894	A2	2009-02-11	EP2021894				
EP2021437	A2	2009-02-11	EP2021437				
AU2007247899	A2	2009-02-19	AU2007247899				
KR20090019891	A	2009-02-25	KR20090019891				
KR20090019816	A	2009-02-25	KR20090019816				
MX2008014186	A	2009-02-25	MX2008014186				
GB2452218	A	2009-02-25	GB2452218				
IN2377/MUMNP/2008	A	2009-02-27	IN2008MN02377				
CR10426	A	2009-03-04	CR--10426				
EP2029702	A1	2009-03-04	EP2029702				
IN2375/MUMNP/2008	A	2009-03-06	IN2008MN02375				
EP2032678	A2	2009-03-11	EP2032678				
IN2683/MUMNP/2008	A	2009-03-20	IN2008MN02683				
IN9994/DELNP/2008	A	2009-03-20	IN2008DN09994				
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MX2008014172	A	2009-03-27	MX2008014172				
KR20090031863	A	2009-03-30	KR20090031863				
KR20090032034	A	2009-03-31	KR20090032034				
EP2043951	A2	2009-04-08	EP2043951				
KR20090036546	A	2009-04-14	KR20090036546				
MX2008015585	A	2009-04-24	MX2008015585				
KR20090040406	A	2009-04-24	KR20090040406				
VN19635	A	2009-04-27	VN--19635				
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MA30429	B1	2009-05-04	MA--30429				
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GT200800240	A	2009-05-15	GT200800240				
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RU2007146272	A	2009-06-20	RU2007146272				
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JP2009536097	A	2009-10-08	JP2009536097				
EA200802255	A1	2009-10-30	EA200802255				
SMP200800066	B	2009-11-06	SM200800066T				
CN101595439	A	2009-12-02	CN101595439				
JP2009545636	A	2009-12-24	JP2009545636				
JP2010500420	A	2010-01-07	JP2010500420				
EP2032678	A4	2010-01-13	EP2032678				
WO2007143673	A8	2010-01-21	WO2007143673				
TNSN08436	A1	2010-04-14	TN0800436				
EP2043951	A4	2010-04-14	EP2043951				
EP2019981	A4	2010-04-21	EP2019981				
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EP2078742	A3	2010-06-23	EP2078742				
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AU2007247898	B8	2012-09-27	AU2007247898				
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BRPI0712489	A2	2012-10-02	BR200712489				
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BRPI0711330	A2	2013-01-08	BR200711330				
BRPI0711330	A8	2013-02-19	BRPI0711330				
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MY156047	A	2015-12-31	MY-156047				
IL195094	B	2016-02-29	IL-195094				
BRPI0711330	A8	2018-03-27	BRPI0711330				

Abstract

(EP2500646)

A low-temperature gasification system comprising a horizontally oriented gasifier is provided that optimizes the extraction of gaseous molecules from carbonaceous feedstock while minimizing waste heat. The system comprises a plurality of integrated subsystems that work together to convert municipal solid waste (MSW) into electricity. The subsystems comprised by the low-temperature gasification system are: a Municipal Solid Waste Handling System; a Plastics Handling System; a Horizontally Oriented Gasifier with Lateral Transfer Units System; a Gas Reformulating System; a Heat Recycling System; a Gas Conditioning System; a Residue Conditioning System; a Gas Homogenization System and a Control System.

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Latest standardized assignees - inventors removed

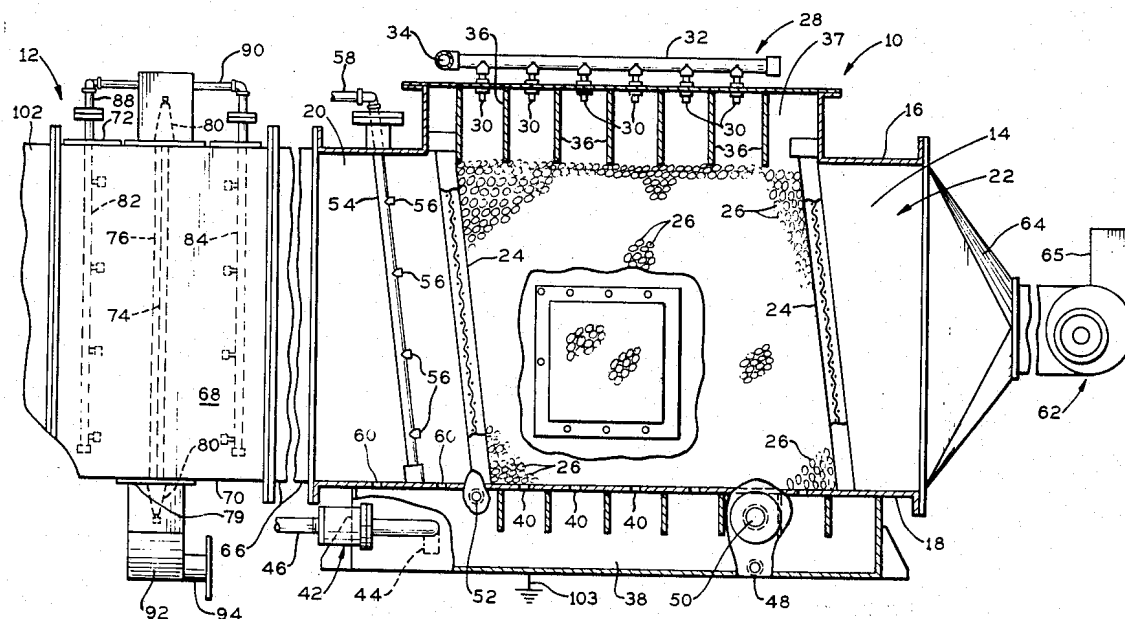
PLASCO ENERGY

Family 9/12 - FAMPAT - ©Questel

Title

(US3874858)

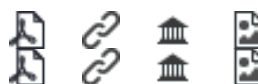
Method and apparatus for electrostatic removal of particulate from a gas stream

Images**Publication data including kind & date**

DE2235531

A1 1973-02-15

DE2235531



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FR2146472	B1	1974-10-25	FR2146472
GB1380321	A	1975-01-15	GB1380321
US3874858	A	1975-04-01	US3874858
CA1006446	A	1977-03-08	CA1006446
DE2235531	B2	1979-10-31	DE2235531
DE2235531	C3	1980-07-10	DE2235531



Abstract

(US3874858)

A method and apparatus is disclosed for removing particulate matter from a gas stream. The apparatus includes a packed wet scrubber through which a scrubbing liquid such as water is flowed vertically downwardly and through which gas to be cleaned is flowed in a direction transverse to the direction of flow of the scrubbing liquid. The packing material is disposed in a chamber and the packing material and scrubbing liquid are maintained electrically neutral. A stream of gas to be treated is ionized prior to its flow through the wet scrubber to provide particles in the gas stream with an electrical charge of a given polarity, usually negative. Upon flow of the gas stream through the wet scrubber, the charged particles in the gas stream are carried into close proximity with and are attracted to the scrubbing liquid and/or packing elements as a result of attraction forces between the charged particles and the electrically neutral packing elements and liquid. Thus, the charged particles are removed from the gas stream and are carried from the scrubber to a discharge point by the scrubbing liquid. The particle laden gas is flowed through the wet scrubber apparatus at a velocity which is sufficiently low to provide for the attraction forces to overcome the velocity of a particle in the gas stream and the drag force of the gas stream on the particle so that the particle is removed from the gas stream as opposed to remaining entrained therein and flowing through the apparatus.

Inventors

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Latest standardized assignees - inventors removed

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Family 10/12 - FAMPAT - ©Questel

Title

(EP2254972)

Method and device for producing synthesis gas from biomass

Images

EP2254972	A2	2010-12-01	EP2254972				
CN101978031	A	2011-02-16	CN101978031				
US20110083367	A1	2011-04-14	US20110083367				
UA105899	C2	2014-07-10	UA-105899				
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EP2254972	B1	2015-04-29	EP2254972				
TWI494423	B	2015-08-01	TWI494423				
BRPI0910927	A2	2018-03-27	BR200910927				

Abstract

(EP2254972)

Illustrated and described are a method and a device for producing synthesis gas from biomass, wherein (1) the biomass is decomposed into pyrolysis coke and pyrolysis gas in at least one pyrolysis reactor, (2) the pyrolysis coke is fed to the fluidized bed of a synthesis gas reactor and (3) the pyrolysis gas is used as a fluidizing gas for the synthesis gas reactor.

Inventors

TETZLAFF KARL-HEINZ

Family 11/12 - FAMPAT - ©Questel

Title

(EP-572769)

Process for the conversion of waste incineration residues to a non-polluting product and useful for constructional purposes

Images

ES2137953	T3	2000-01-01	ES2137953
GR3031892	T3	2000-02-29	GR3031892
DK0572769	T3	2000-03-20	DK-572769T
JP3261416	B2	2002-03-04	JP3261416



Abstract

(EP-572769)

In the conversion of mainly inorganic waste incineration products, contaminated with heavy metals and/or heavy metal compounds, and/or analogs to give environmentally acceptable products by means of a fusion-thermal treatment, an iron-containing melt is used whose iron content can be adjusted by addition of iron or of an iron compound. The melt is first fused in a reactor above 1300 DEG C. The melt is then oxidised with vigorous agitation by blowing in an oxygen-containing gas until all the metals and metal compounds present in the reactor have been converted into the oxide form, the melt being held, at least at the end of the oxidation, above 1450 DEG C and preferably at about 1500 DEG C. Subsequently, the melt is reduced, preferably by means of a part fraction of the waste incineration product and/or iron, preferably in the form of scrap, and/or hydrogen. The reduction can then be continued by means of added aluminium and/or calcium and/or ferrosilicon. If appropriate, molten metal is fractionated in a lower part of the reactor, and molten slag is collected separately as a supernatant layer. Heating energy can be saved by heat exchange and recirculation of fluid.

Inventors

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Latest standardized assignees - inventors removed

HOLCIM

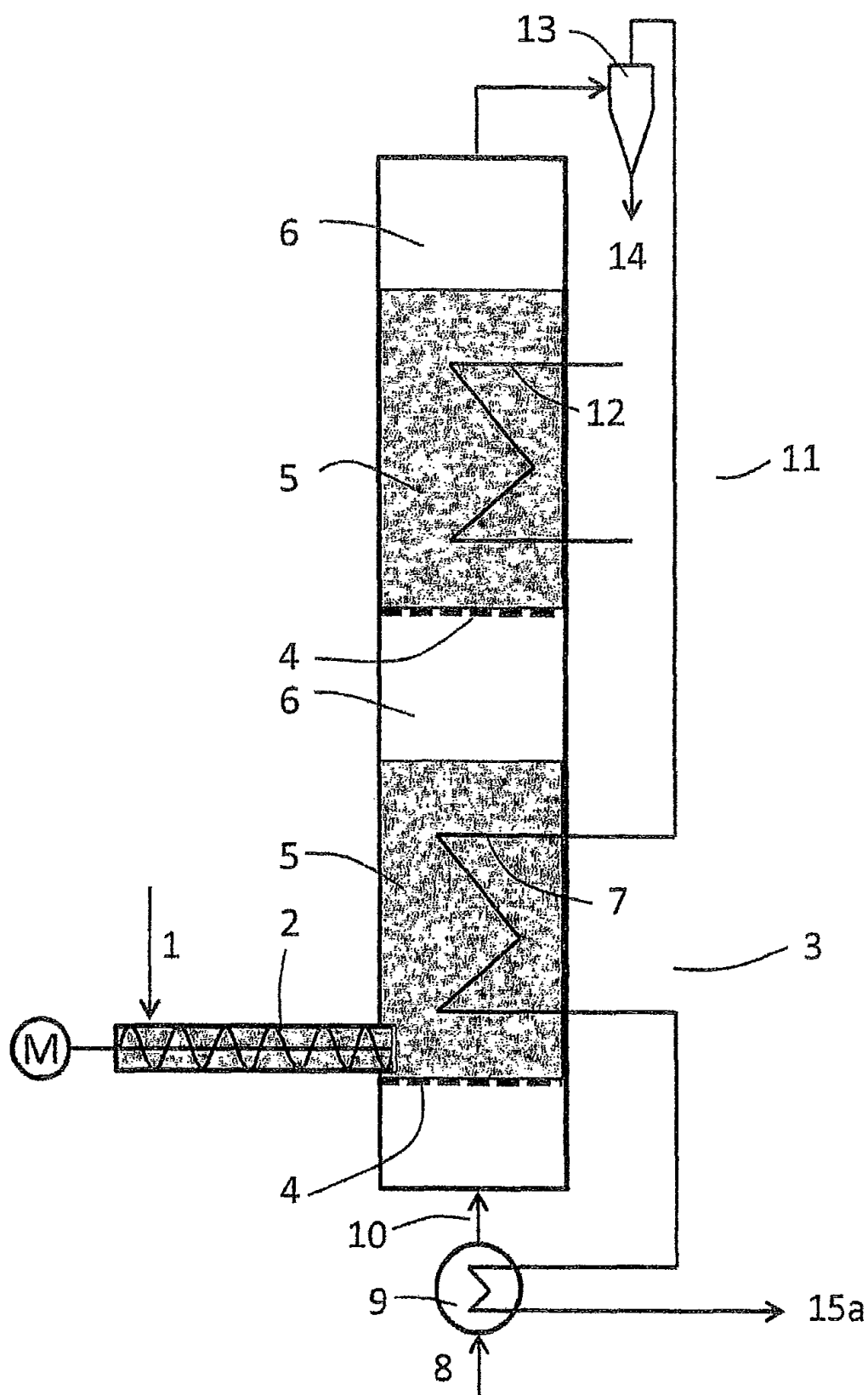
Family 12/12 - FAMPAT - ©Questel

Title

(EP2303995)

Method and device for producing low-tar synthesis gas from biomass

Images



Publication data including kind & date

WO2010003968	A2	2010-01-14	WO201003968
CA2739270	A1	2010-01-14	CA2739270
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BRPI0915559	A2	2016-01-26	BR200915559				
JP5877237	B2	2016-01-29	JP5877237				

Abstract

(EP2303995)

Methods for producing synthesis gas from biomass exhibit a high level of tar or require temperatures at which the ash sinters into a glassy mass, thereby rendering it unusable as a mineral fertilizer. The object of the invention is to avoid these disadvantages and to produce a high-quality synthesis gas at a high efficiency. With the method according to the invention, the tar content in the synthesis gas (15a) is lowered in that the biomass (1) is split into pyrolysis coke and pyrolysis gas in a fluidized bed reactor (3), both of which are fed to at least one more fluidized bed reactor (11), wherein tars in the largely tar-free pyrolysis coke are catalytically split at a higher temperature without the ash melting point being exceeded. The method according to the invention enables the production of largely tar-free synthesis gas.

Inventors

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Latest standardized assignees - inventors removed

KARL HEINZ TETZLAFF