

Search history

Search 1: FT=(QUENCHING~ OVEN~ AND INSULATING~ AND PUMICE~) (Results 0)
Search 2: FT=(QUENCHING~ OVEN~ AND INSULATION~ AND expanded perlite~) (Results 0)
Search 3: FT=(QUENCHING~ OVEN~ AND INSULATION~) (Results 1)
Search 4: FT=(QUENCHING~ OVEN~) (Results 58)

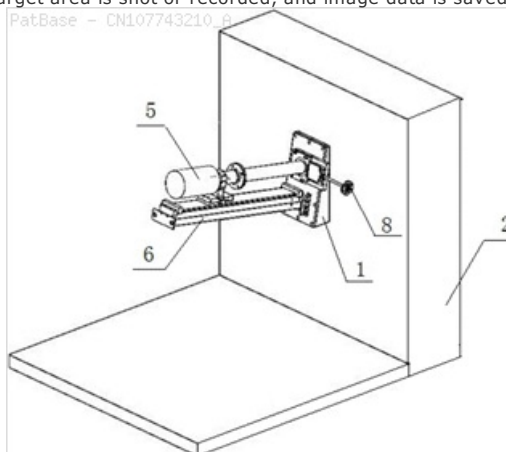
Title: AUTOMATIC CAMERA DEVICE FOR COKE DRY **QUENCHING OVEN**

Abstract: The invention discloses an automatic camera device for a coke dry **quenching oven**, relating to the field of coal coking equipment. The automatic camera device comprises a coke dry **quenching oven** body, a camera and a propulsion component, wherein a photographing hole is formed in a hearth refractory brick of the coke dry **quenching oven** body, the camera is connected with the propulsion component, the propulsion component drives the camera to slide back and forth, the front end of the camera is inserted in the photographing hole, and the front section of the camera is retractable. According to the automatic camera device for the coke dry **quenching oven** disclosed by the invention, the inner part of the coke dry **quenching oven** that is working can be photographed or recorded, multiple groups of the camera devices are arranged on an outer wall of the coke dry **quenching oven**, and thus the state of the refractory brick in the oven can be shot without dead angles; and when a recording operation is performed, a lens is stabilized in a target area, the clearest image can be reached through diaphragm adjustment, zooming and focusing, the target area is shot or recorded, and image data is saved.

Classifications:

International (IPC 8-9): F16M11/06 F16M13/02 H04N5/232 H04N5/76 H04N7/18 (Advanced/Invention)

CPC: H04N5/76 F16M11/06 F16M13/02 H04N5/23212 H04N7/18



Family:

Publication number	Publication date	Application number	Application date
CN107743210 A	20180227	CN201711083376	20171107

Priority:

CN201711083376 20171107

Probable Assignee: LINHUAN COKING AND CHEMICAL CO LTD

Assignee(s): (std): LINHUAN COKING AND CHEMICAL CO LTD

Assignee(s): LINHUAN COKING CO LTD ; LINHUAN COKING AND CHEMICAL CO

Inventor(s): (std): CHENG JINLONG ; LI FENG ; LIU JIANJUN ; ZHENG RENYONG

Legal status (INPADOC)

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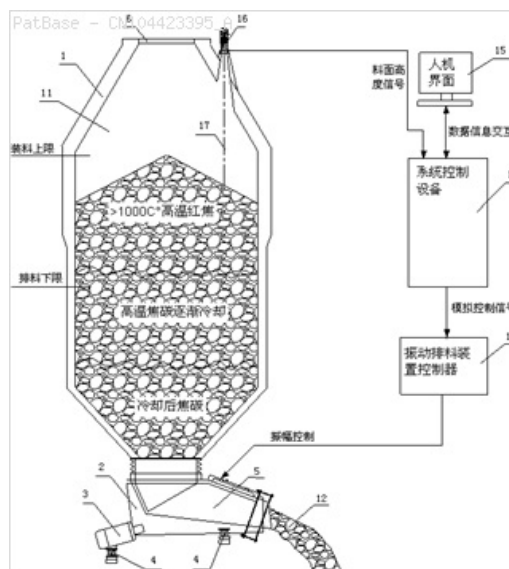
Patent	Date recorded	Event group	Code	Event	Details
CN107743210 A	20180227	LSPB	+	published / reissued	
CN107743210 A	20180227	LSPB	PB01	PUBLICATION	

Title: COKE DRY **QUENCHING OVEN** COKE DISCHARGE TEST METHOD

Abstract: The invention discloses a coke dry **quenching oven** coke discharge test method. The first coke discharge value of a test point and testing discharge are inputted in a human-computer interface, a system control device reads current time, reads an in-oven charge level height value currently sent by a charge level detector mounted on the upper part of a coke dry **quenching oven**, and calculates current storage quantity, a corresponding first analog quantity is obtained according to the first coke discharge value through an analog quantity-corresponding coke discharge curve, the system control device outputs the first analog quantity to a vibrating discharger controller, a vibrating discharger starts to vibrate for discharge until the in-oven charge level declines to a certain value, the value is (in-oven storage quantity at the beginning of the test minus testing discharge) divided by coke weight per unit height, the system control device reads current time, and calculates test duration and coke discharge quantity, the coke discharge quantity substitutes for the first coke discharge to correspond to the first analog quantity, and the analog quantity-corresponding coke discharge curve is refreshed. The coke dry **quenching oven** coke discharge test method can simplify the check process of the coke discharge quantity, and still can be carried out in the normal production process of the coke dry **quenching oven**.

Classifications:

International (IPC 8-9): C10B39/02 C10B41/02
G05D19/02 (Advanced/Invention)



Family:

Publication number	Publication date	Application number	Application date
CN104423395 A	20150318	CN201310403111	20130906
CN104423395 B	20160817	CN201310403111	20130906

Priority:

CN201310403111 20130906

Probable Assignee: BAOSTEEL GROUP CORP

Assignee(s): (std): BAOSHAN IRON AND STEEL ; BAOSTEEL GROUP CORP

Assignee(s): BAOSHAN IRON AND STEEL CO

Inventor(s): (std): CAO YINPING ; DING LI ; FANG GUOLIANG ; HAN MINGMING ; XU CHANGHUI ; YANG ZHIDONG

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
CN104423395 A	20150318	LSPB	+	published / reissued	
CN104423395 A	20150318	LSPB	+C06	PUBLICATION	
CN104423395 B	20160817	LSGT	+	granted / extensions (spc, cpc, pte)	
CN104423395 B	20160817	LSGT	+C14	GRANT OF PATENT OR UTILITY MODEL	
CN104423395 B	20330906	PEXP		Calculated Patent Term Expiry	

Title: Dry coke quenching rotary discharge valve

Abstract: The utility model relates to a conveying device for extracting of coke, in particular to a dry coke quenching rotary discharge valve which overcomes the disadvantages of existing dry coke quenching rotary discharge valve such as fixed cutting edge installation mode and easy blocking of coke. The utility model adopts the following technical proposal: it comprises a feeding opening, a discharging opening, a casing and a rotor, wherein, the rotor is driven by a rotor shaft and is partitioned into a plurality of bunkers through a lining plate; a cutting edge is arranged at the outer edge of the rotor and is of a certain clearance quantity from the casing; in addition, the clearance of the feeding opening near the rotor and the casing is provided with a material blocking-resistant damping device. The utility model is characterized in that: the installation hole of the cutting edge which is an elliptic bolt hole has adjustable installation position and is located through a bolt and a built-in locking block. The utility model is mainly used for coke discharging and conveying of dry coke **quenching oven**.

Classifications:

International (IPC 8-9): C10B33/02 (Advanced/Invention);

C10B33/00 (Core/Invention)

International (IPC 1-7): C10B33/02

Family:

Publication number	Publication date	Application number	Application date
CN2633887 Y	20040818	CN20032032453U	20030623

Priority:

CN20032032453U 20030623

Probable Assignee: BAOSTEEL GROUP CORP

Assignee(s): (std): BAOSHAN IRON AND STEEL ; BAOSTEEL GROUP CORP

Assignee(s): BAOSHAN IRON AND STEEL CO

Inventor(s): (std): LI FENG RU ; ZHU XINGJIAN ; SHI KE

Inventor(s): FENG RU LI ; XINGJIAN ZHU ; KE SHI

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
CN2633887 Y	20040818	LSGT	+	granted / extensions (spc, cpc, pte)	
CN2633887 Y	20040818	LSGT	+C14	GRANT OF PATENT OR UTILITY MODEL	
CN2633887 Y	20050525	LSAS	ASS	SUCCESSION OR ASSIGNMENT OF PATENT RIGHT	PARTYTYPE : OWNER OWNER : ZHONGYE COKE RESISTANCE ENGINEERING TECHNOLOGY CO OLDPARTY : FORMER OWNER: ANSHAN GENERAL DESIGN INST. OF COKING REFRACTORY MATERIALS, CHINESE METALLURGICAL QINHUANGDAO METALLURGICAL MACHINERY CO., LTD. EFFECTIVE DATE : 20050415
CN2633887 Y	20050525	LSAS	C41	TRANSFER OF PATENT APPLICATION OR PATENT RIGHT OR UTILITY MODEL	
CN2633887 Y	20130821	LSLE	-C17	CESSATION OF PATENT RIGHT	
CN2633887 Y	20130623	PEXP		Calculated Patent Term Expiry	

Title: Process for shaping fiber reinforced thermoplastic articles

Abstract: A process for making a preform of fiber reinforced thermoplastic material, debulking the preform, subjecting the preform to heat and pressure to form a molded article, then subjecting the article to a predetermined quenching cycle that centralizes void location in the molded article.

Classifications:

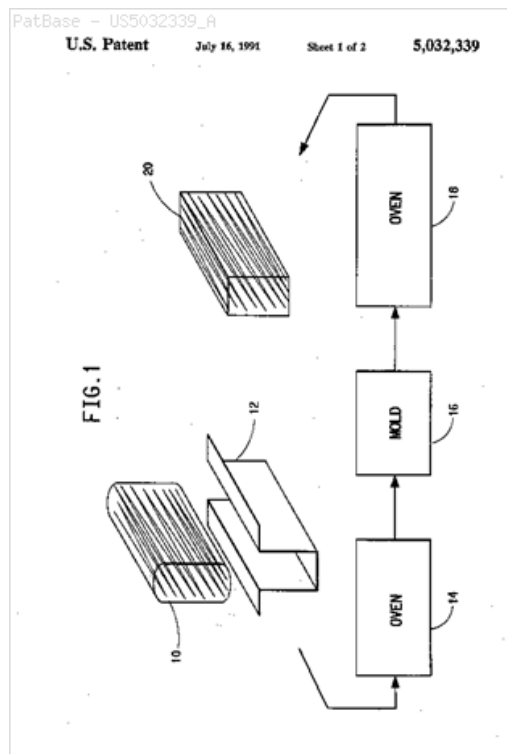
International (ipc 8-9): B29C37/00 B29C43/02 B29C43/14 B29C43/52 B29C71/00 B29C71/02 (Advanced/Invention); B29C37/00 B29C43/14 B29C43/52 B29K105/08 (Advanced/Non-invention); B29C43/14 B29C43/52 B29C71/00 B29C71/02 (Core/Invention); B29C37/00 (Core/Non-invention)

International (ipc 1-7): B29C43/02 B29C43/14 B29C43/18 B29C43/52 B29C51/42 B29C67/14 B29C70/00 B29C71/02 B29C71/02 B29K105/08 B29K67/00 B29K67/00/

CPC: B29C37/005 B29C71/0063 B29C71/02 B29C2071/025 B29C2791/001 B29K2067/00 B29K2105/12 B29K2995/0041

European: B29C71/00D B29C71/02 L29C37/00D L29C71/02B L29C791/00B L29K105/12 L29K67/00 L29K995/00F4

US: 264/235 264/257 264/322 264/346



Family:

Publication number	Publication date	Application number	Application date
AU199181168 A1	19920123	AU19910081168	19910719
AU633239 B2	19930121	AU19910081168	19910719
CA2047292 AA	19920120	CA19912047292	19910717
DE69113344 D1	19951102	DE19916013344	19910719
DE69113344 T2	19960404	DE19916013344T	19910719
EP0467385 A2	19920122	EP19910112108	19910719
EP0467385 A3	19920311	EP19910112108	19910719
EP0467385 B1	19950927	EP19910112108	19910719
ES2079000 T3	19960101	ES19910112108T	19910719
JP4226720 A2	19920817	JP19910201153	19910717
US5032339 A	19910716	US19900554476	19900719

Priority:

US19900554476 19900719 CA19912047292 19910717

Probable Assignee: DU PONT

Assignee(s): (std): DU PONT

Assignee(s): DU PONT E I DE NEMOURS AND CO ; DU PONT E I DE NEMOURS AND COMPANY ; E I DU PONT DE NEMOURS AND CO ; E I DU PONT DE NEMOURS AND CO A CORP OF DE ; E I DU PONT DE NEMOURS AND CO WILMINGTON DEL US ; E I DU PONT DE NEMOURS AND COMPANY ; EI DU PONT DE NEMOURS AND CO ; GAY FRANK P ; FARRAYE CALLAHAN ELIZABETH ANNE ; EIDU PONT DE NEMOURS AND CO

Inventor(s): (std): FARRAYE CALLAHAN ELIZABETH ANN ; GAY FRANK P ; FARRAYE CALLAHAN ELIZABETH A ; ERIZABESU AN FUAREIIKARAHAN ; FURANKU PII GEI

Inventor(s): FARRAYE CALLAHAN ELIZABETH ANNE ; FARRAYE CALLAHAN ELIZABETH ANNE NEW CASTLE DELAWAR ; FRANK P GAY ; ELIZABETH ANNE FARRAYE CALLAHAN ; FARRAYE CALLAHAN ELIZABETH ANNE NEW CASTLE...

Agent(s): CALLINANS; FISHER ADAMS KELLY CALLINANS; SPRUSON AND FERGUSON; SIM AND MCBURNEY

Designated states: CH DE ES FR IT LI LU NL SE

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
AU199181168 A1	19920123	LSPB	+	published / reissued	
AU633239 B2	19930121	LSGT	+	granted / extensions (spc, cpc, pte)	
AU633239 B2	20000217	LSLE	-MK14	PATENT CEASED SECTION 143(A) (ANNUAL FEES NOT	

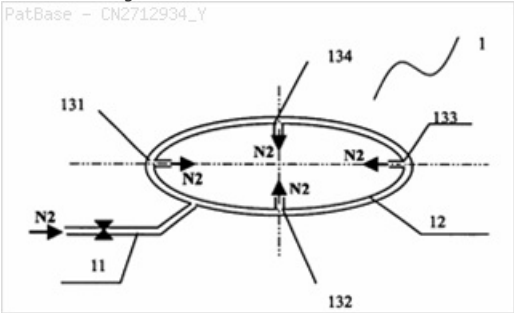
PAID) OR EXPIRED					
AU633239 B2	20110719	PEXP		Calculated Patent Term Expiry	
CA2047292 AA	19920120	LSPB	+	published / reissued	
CA2047292 AA	19990719	LSLE	-FZDE	DEAD	
DE69113344 D1	19961024	LSGT	+8364	NO OPPOSITION DURING TERM OF OPPOSITION	
DE69113344 D1	20000907	LSLE	-8339	CEASED/NON-PAYMENT OF THE ANNUAL FEE	
DE69113344 T2	19960404	LSGT	+	granted / extensions (spc, cpc, pte)	
DE69113344 T2	20110719	PEXP		Calculated Patent Term Expiry	
EP0467385 A2	19920122	LSPB	+	published / reissued	
EP0467385 A3	19921104	LSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 19920903
EP0467385 A3	19940601	LSES	+17Q	FIRST EXAMINATION REPORT DESPATCHED	EFFECTIVE DATE : 19940419
EP0467385 B1	19950927	LSGT	+	granted / extensions (spc, cpc, pte)	
EP0467385 B1	19960101	LSGT	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : ES REF LEGAL EVENT CODE : FG2A REF DOCUMENT NUMBER : 2079000 COUNTRY OF REF DOCUMENT : ES KIND CODE OF REF DOCUMENT : T3 DESIGNATED STATE(S) :
EP0467385 B1	19960918	LSGT	+26N	NO OPPOSITION FILED	
EP0467385 B1	19980602	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : FR PAYMENT DATE : 19980602 YEAR OF FEE PAYMENT : 8
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EP0467385 B1	19980612	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : NL PAYMENT DATE : 19980612 YEAR OF FEE PAYMENT : 8
EP0467385 B1	19980713	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : ES PAYMENT DATE : 19980713 YEAR OF FEE PAYMENT : 8
EP0467385 B1	19990720	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : ES NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 19990720
EP0467385 B1	19990731	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : FR NOTIFICATIONNOFLAPSE : THE PATENT HAS BEEN ANNULLED BY A DECISION OF A NATIONAL AUTHORITY LAPSED DATE : 19990731
EP0467385 B1	20000201	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : NL NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20000201
EP0467385 B1	20000403	LSLE	-NLV4	NL: LAPSED OR ANULLED DUE TO NON-PAYMENT OF THE ANNUAL FEE	REF COUNTRY CODE : EP EFFECTIVE DATE : 20000201
EP0467385 B1	20000503	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DE NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20000503
EP0467385 B1	20000721	LSLE	REG	REFERENCE TO A	REF COUNTRY CODE : FR

				NATIONAL CODE	REF LEGAL EVENT CODE : ST
EP0467385 B1	20040401	LSLE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : ES REF LEGAL EVENT CODE : FD2A EFFECTIVE DATE : 20000810
EP0467385 B1	20050719	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : IT NOTIFICATION OF LAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20050719
EP0467385 B1	20110719	PEXP		Calculated Patent Term Expiry	
ES2079000 T3	19960101	LSGT	+	granted / extensions (spc, cpc, pte)	
ES2079000 T3	19960101	LSGT	+FG2A	DEFINITIVE PROTECTION	REF DOCUMENT NUMBER : 467385 COUNTRY OF REF DOCUMENT : ES
ES2079000 T3	20110719	PEXP		Calculated Patent Term Expiry	
JP4226720 A2	19920817	LSPB	+	published / reissued	
US5032339 A	19910716	LSGT	+	granted / extensions (spc, cpc, pte)	
US5032339 A	19900814	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : E. I. DU PONT DE NEMOURS AND COMPANY, WILMINGTON, OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST.; ASSIGNORS:FARRAYE-CALLAHAN, ELIZABETH A.; GAY, FRANK P.; REEL/FRAME:005437/0639 EFFECTIVE DATE : 19900713
US5032339 A	19910516	LSGT	PAT1	Patented Case	
US5032339 A	19941228	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US5032339 A	19990718	LSLE	-LAPS	LAPSE FOR FAILURE TO PAY MAINTENANCE FEES	
US5032339 A	19990928	LSLE	-FP	EXPIRED DUE TO FAILURE TO PAY MAINTENANCE FEE	EFFECTIVE DATE : 19990716
US5032339 A	20180127	LSLE	-PEX1	Patent Expired Due to NonPayment of Maintenance Fees Under 37 CFR 1.362	
US5032339 A	20180127	LSLE	-STCH	INFORMATION ON STATUS: PATENT DISCONTINUATION	TEXT : PATENT EXPIRED DUE TO NONPAYMENT OF MAINTENANCE FEES UNDER 37 CFR 1.362
US5032339 A	20100719	PEXP		Calculated Patent Term Expiry	

Title: Coke dry quenching nitrogen-charging device

Abstract: The utility model relates to a dry coke **quenching oven** nitrogen-charging device, comprising a main nitrogen input pipe. The main nitrogen input pipe is connected with an annular pipeline, and the annular pipeline is provided with a plurality of nozzles. The diameters of the nozzles are different, and the diameters of the nozzles near the main nitrogen input pipe is larger than that of the nozzles far from the main nitrogen input pipe. The dry coke **quenching oven** nitrogen-charging device is arranged at the lowest bottom of a dry coke **quenching oven**. The dry coke **quenching oven** nitrogen-charging device can enhance evenness and effectiveness for charging nitrogen when a circulation fan stops operating due to fault, the temperature of coke in a cooling chamber is distributed lengthways and reasonably, and self-igniting phenomena due to the downward movement of the high-temperature zone of coke in the cooling chamber is avoided.

Classifications:
International (IPC 8-9): C10B39/00 (Advanced/Invention);
C10B39/00 (Core/Invention)
International (IPC 1-7): C10B39/00



Family:

Publication number	Publication date	Application number	Application date
CN2712934 Y	20050727	CN200420081274U	20040729

Priority:

CN200420081274U 20040729 CN20042081274U 20040729

Probable Assignee: BAOSTEEL GROUP CORP
Assignee(s): (std): BAOSHAN IRON AND STEEL ; BAOSTEEL GROUP CORP
Assignee(s): BAOSHAN IRON AND STEEL CO
Inventor(s): (std): SHEN CHUANMING ; WANG WEIMIN ; CAO YINPING
Inventor(s): CHUANMING SHEN ; WEIMIN WANG ; YINPING CAO

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
CN2712934 Y	20050727	LSGT	+	granted / extensions (spc, cpc, pte)	
CN2712934 Y	20050727	LSGT	+C14	GRANT OF PATENT OR UTILITY MODEL	
CN2712934 Y	20140917	LSLE	-C17	CESSATION OF PATENT RIGHT	
CN2712934 Y	20140729	PEXP		Calculated Patent Term Expiry	

Title: PROCESS FOR PRODUCING ZINC OXIDE VARISTOR HAVING HIGH POTENTIAL GRADIENT AND HIGH NON-LINEARITY COEFFICIENT

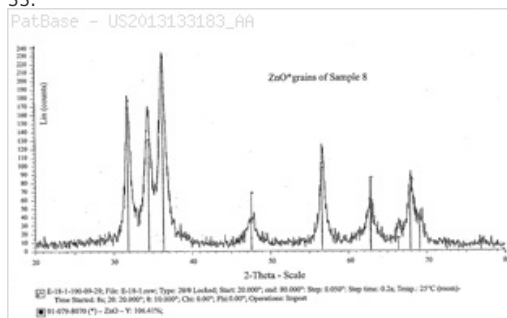
Abstract: A process for producing zinc oxide varistor is disclosed to allow that one step of having zinc oxide grains doped with non-equivalent ions and sufficiently semiconductorized and the other one step of preparing sintered powders having property of high-impedance are prepared by two separate procedures respectively, resulted in that the zinc oxide varistor produced by the process features both a high potential gradient and a high non-linearity coefficient; and more particularly the disclosed process is suited for producing a specific zinc oxide varistor whose potential gradient ranges from 2,000 to 9000 V/mm as well as non-linearity coefficient (alpha) ranges from 21.5 to 55.

Classifications:

International (IPC 8-9): C04B35/453 C04B35/628 H01C17/00 H01C17/30 H01C7/02 H01C7/108 H01C7/112 H01C7/12 (Advanced/Invention)

CPC: C04B35/453 H01C17/06546 C04B35/624 C04B35/62805 C04B35/62807 C04B35/6281 C04B35/62813 C04B35/62815 C04B35/62818 C04B35/62821 C04B35/62823 C04B35/62826 C04B2235/3203 C04B2235/3215 C04B2235/3217 C04B2235/3224 C04B2235/3225 C04B2235/3227 C04B2235/3229 C04B2235/3232 C04B2235/3239 C04B2235/3241 C04B2235/3244 C04B2235/3251 C04B2235/3256 C04B2235/3258 C04B2235/3262 C04B2235/3272 C04B2235/3275 C04B2235/3279 C04B2235/3281 C04B2235/3284 C04B2235/3286 C04B2235/3293 C04B2235/3294 C04B2235/3298 C04B2235/3409 C04B2235/3418 C04B2235/44 C04B2235/442 C04B2235/443 C04B2235/449 C04B2235/85 C01G9/02 C01P2002/54 Y10T29/49085 H01C7/112

US: 29/612



Family:

Publication number	Publication date	Application number	Application date
EP2599759 A1	20130605	EP20120193101	20121116
JP2013115431 A2	20130610	JP20120251407	20121115
KR101464688 B1	20141127	KR20120132497	20121121
KR20130060127 A	20130607	KR20120132497	20121121
TW201212051 A	20120316	TW20110143801	20111129
TWI425532 B	20140201	TW20110143801	20111129
US2013133183 AA	20130530	US20120609508	20120911

Priority:

TW20110143801 20111129

Probable Assignee: LEADER WELL TECHNOLOGY CO LTD

Assignee(s): (std): LEADER WELL TECHNOLOGY CO LTD ; LIEN CHING HOHN ; ZHU JIE AN

Assignee(s): LEADER WELL TECHNOLOGY CO

Inventor(s): (std): ZHU JIE AN ; LIEN CHING HOHN

Agent(s): BECK AND ROESSIG EUROPEAN PATENT ATTORNEYS

Designated states: AL AT BA BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC ME MK MT NL NO PL PT RO RS SE SI SK SM TR

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
EP2599759 A1	20130605	LSPB	+	published / reissued	
EP2599759 A1	20140604	LSDW	-18D	APPLICATION DEEMED TO BE WITHDRAWN	EFFECTIVE DATE : 20131206
JP2013115431 A2	20130610	LSPB	+	published / reissued	
JP2013115431 A2	20140501	LSRV	-A02	DECISION OF REFUSAL	TEXT : JAPANESE INTERMEDIATE CODE: A02 EFFECTIVE DATE : 20140430
KR101464688 B1	20141127	LSGT	+	granted / extensions (spc, cpc, pte)	
KR101464688 B1	20121121	LSSES	A201	REQUEST FOR EXAMINATION	
KR101464688 B1	20171030	LSFE	FPAY	ANNUAL FEE PAYMENT	PAYMENT DATE : 20171031 YEAR OF FEE PAYMENT : 4
KR101464688 B1	20181113	LSFE	FPAY	ANNUAL FEE PAYMENT	PAYMENT DATE : 20181114 YEAR OF FEE PAYMENT : 5
KR101464688 B1	20190514	LSFE	FPAY	ANNUAL FEE PAYMENT	PAYMENT DATE : 20190515 YEAR OF FEE PAYMENT : 6

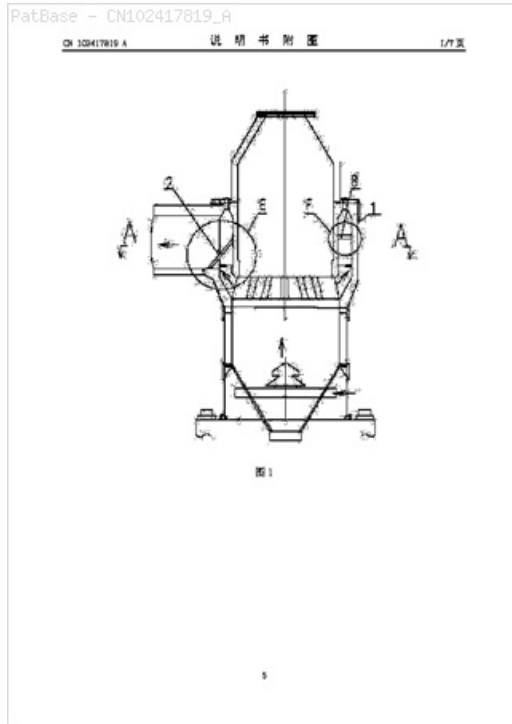
KR101464688 B1	20321121	PEXP		Calculated Patent Term Expiry
KR20130060127 A	20130607	LSPB	+	published / reissued
KR20130060127 A	20131203	LSES	-E902	NOTIFICATION OF REASON FOR REFUSAL
KR20130060127 A	20140822	LSGT	+E701	DECISION TO GRANT OR REGISTRATION OF PATENT RIGHT
KR20130060127 A	20141111	LSAS	N231	NOTIFICATION OF CHANGE OF APPLICANT
KR20130060127 A	20141118	LSGT	+GRNT	WRITTEN DECISION TO GRANT
TW201212051 A	20120316	LSPB	+	published / reissued
TWI425532 B	20140201	LSGT	+	granted / extensions (spc, cpc, pte)
TWI425532 B	20311129	PEXP		Calculated Patent Term Expiry
US2013133183 AA	20130530	LSPB	+	published / reissued
US2013133183 AA	20150205	LSWD	-ABD3	Abandoned -- Failure to Respond to an Office Action

Title: NOVEL ANNULAR AIRWAY OF DRY QUENCHING COKE

Abstract: The invention discloses a novel annular airway of a dry quenching coke. The annular airway is characterized in that: the outlet part of the annular airway is provided with several inclined supports, and several horizontal supports are arranged between the inner ring and the outer ring of the annular airway; each inclined support comprises a support plate and a heatproof steel bar cage, two side ends of the support plate, which outwardly project, stick into the inner ring and a fireproof brick at the bottom of the outlet of the annular airway respectively, and heatproof steel bars in the heatproof steel bar cage between a base plate and a side plate are inserted into fireproof bricks; and each horizontal support comprises an epibolic heatproof plate and a heatproof steel bar cage, and heatproof steel bars in the heatproof steel bar cage are inserted into fireproof bricks of the inner ring and the outer ring. So when the deformation of the inner ring of the annular airway of the dry **quenching oven** generates, the projection of the inner ring along the circumference is restricted by the inclined supports and the horizontal supports, thereby the strength of the annular airway and an inclined withe is substantially improved, the collapse of the inner ring of the annular airway in the production process is avoided, and the service life and the service period of the dry quenching oven are prolonged.

Classifications:

International (IPC 8-9): C 10B39/02 (Advanced/Invention)

**Family:**

Publication number	Publication date	Application number	Application date
CN102417819 A	20120418	CN201110325511	20111024
CN102417819 B	20130918	CN201110325511	20111024
CN202297468 U	20120704	CN201120407827U	20111024

Priority:

CN201110325511 20111024 CN201120407827U 20111024

Probable Assignee: MAGANG GROUP HOLDING CO LTD

Assignee(s): (std): MAGANG GROUP HOLDING CO LTD ; MAGANG GROUP HOLDING COMPANY LTD OFF

Assignee(s): MAGANG GROUP HOLDING CO ; MAGANG GROUP HOLDING COMPANY LTD

Inventor(s): (std): XU JIANFENG ; WANG KAIBAO ; SONGQING CHEN ; SHIYUN SHE ; SHE SHIYUN ; REN QIANG ; QIANG REN ; QIANG LI ; QIAN HULIN ; LI QIANG ; KAIBAO WANG ; JIANFENG XU ; HULIN QIAN ; CHEN SONGQING

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
CN102417819 A	20120418	LSPB	+	published / reissued	
CN102417819 A	20120418	LSPB	+C06	PUBLICATION	
CN102417819 B	20130918	LSGT	+	granted / extensions (spc, cpc, pte)	
CN102417819 B	20130918	LSGT	+C14	GRANT OF PATENT OR UTILITY MODEL	
CN102417819 B	20311024	PEXP		Calculated Patent Term Expiry	
CN202297468 U	20120704	LSGT	+	granted / extensions (spc, cpc, pte)	
CN202297468 U	20120704	LSGT	+C14	GRANT OF PATENT OR UTILITY MODEL	
CN202297468 U	20161214	LSWD	-EXPY	TERMINATION OF PATENT RIGHT OR UTILITY MODEL	
CN202297468 U	20211024	PEXP		Calculated Patent Term Expiry	

Title: PROCESS FOR PRODUCING ZINC OXIDE VARISTOR

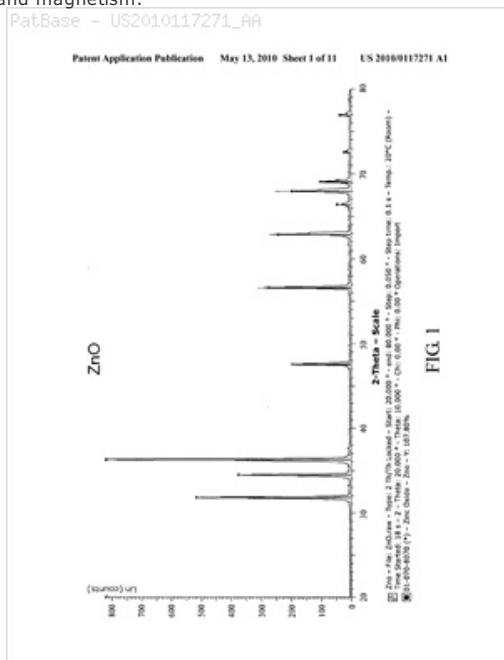
Abstract: A process for producing zinc oxide varistors is to perform the doping of zinc oxide and the sintering of zinc oxide grains with a high-impedance sintering material through two independent procedures, so that the doped zinc oxide and the high-impedance sintering material are well mixed in a predetermined ratio and then used to make the zinc oxide varistors through conventional technology by low-temperature sintering (lower than 900 degrees centigrade); the resultant zinc oxide varistors may use pure silver as inner electrode and particularly possess one or more of varistor properties, thermistor properties, capacitor properties, inductor properties, piezoelectricity and magnetism.

Classifications:

International (IPC 8-9): B28B1/00 H01C7/108 (Advanced/Invention);
B28B1/00 (Core/Invention);
H01C7/108 (Core/Non-invention)

CPC: H01C7/112 C04B35/453 C04B2235/32 C04B2235/3203
C04B2235/3215 C04B2235/3217 C04B2235/3224 C04B2235/3227
C04B2235/3229 C04B2235/3232 C04B2235/3236 C04B2235/3239
C04B2235/3241 C04B2235/3244 C04B2235/3251 C04B2235/3258
C04B2235/3262 C04B2235/3267 C04B2235/3272 C04B2235/3275
C04B2235/3279 C04B2235/3281 C04B2235/3284 C04B2235/3286
C04B2235/3291 C04B2235/3293 C04B2235/3294 C04B2235/3298
C04B2235/3409 C04B2235/3418 C04B2235/36 C04B2235/44
C04B2235/442 C04B2235/95

US: 264/614 264/614P



Family:

Publication number	Publication date	Application number	Application date
TW201003683 A	20100116	TW20090117654	20090527
TWI402864 B	20130721	TW20090117654	20090527
US2010117271 AA	20100513	US20090458369	20090709

Priority:

TW20080126196 20080711 TW20090117654 20090527

Probable Assignee: SFI ELECTRONICS TECHNOLOGY INC

Assignee(s): (std): SFI ELECTRONICS TECHNOLOGY INC

Inventor(s): (std): FANG TING YI ; ZHU JIE AN ; LIEN CHING HOHN ; XU ZHI XIAN ; XU HONG ZONG ; LIN JIU NAN ; KUO CHENG TSUNG ; HUANG XING XIANG

Inventor(s): ZHU, JIE-AN

Agent(s): BACON AND THOMAS PLLC

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
TW201003683 A	20100116	LSPB	+	published / reissued	
TWI402864 B	20130721	LSGT	+	granted / extensions (spc, cpc, pte)	
TWI402864 B	20290527	PEXP		Calculated Patent Term Expiry	
US2010117271 AA	20100513	LSPB	+	published / reissued	
US2010117271 AA	20090709	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : SFI ELECTRONICS TECHNOLOGY INC.,TAIWAN OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:LIEN, CHING-HOHN; ZHU, JIE-AN; KUO, CHENG-TSUNG; AND OTHERS; REEL/FRAME:022985/0933 EFFECTIVE DATE : 20090626
US2010117271 AA	20120923	LSWD	-ABD3	Abandoned - Failure to Respond to	

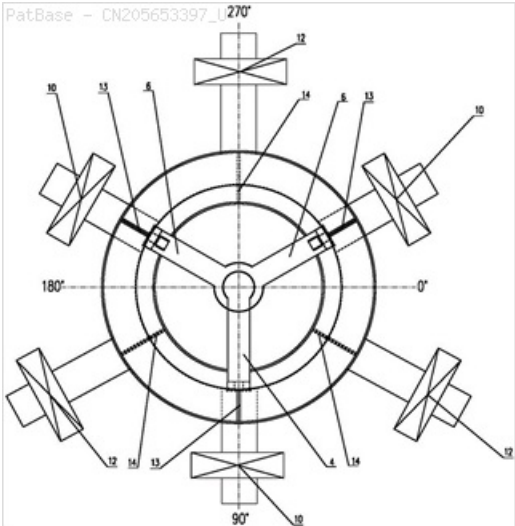
Title: PUT OUT STOVE MULTI -WIND WAY STAR AIR FEEDER FUTILELY

Abstract: The utility model relates to a put out stove multi -wind way star air feeder futilely, upper chamber is become a plurality of independent upper chamber by the upper chamber division board, communicates with circular air flue respectively, lower chamber is divided partitions are divided into a plurality of independent lower chamber by lower chamber, communicates middle part air supply duct or central air supply duct respectively, middle part air supply duct intercommunication middle part hood, the central hood of central air supply duct intercommunication, middle part hood and central hood are by descending supreme the setting with one heart in putting out stove center part futilely, and the middle part hood is located epicone fill middle part, and central hood is located epicone fill upper portion, and the diameter of middle part hood is greater than central hood, independent upper chamber and independent lower chamber's supply duct entrance all is equipped with accuse wind device. The utility model discloses an adopt the accurate air feed of star multi -wind form way in putting out the stove futilely, realized the optimization in each wind channel and local air feed and adjusted, and can realize the quantitative air feed of the interior multi -wind way of stove, and it is more even that the messenger puts out the interior coke cooling of stove futilely, and the while still can reduce coke decline resistance, improves each wind channel and support intensity in putting out the stove futilely.

Classifications:

International (IPC 8-9): C 10B39/02 (Advanced/Invention)

CPC: C 10B39/02



Family:

Publication number	Publication date	Application number	Application date
CN105802642 A	20160727	CN201610263740	20160426
CN205653397 U	20161019	CN201620361639U	20160426

Priority:

CN201610263740 20160426 CN201620361639U 20160426

Probable Assignee: ACRE COKING AND REFRACTORY ENG CONSULTING CORP MCC

Assignee(s): (std): ACRE COKING AND REFRACTORY ENG CONSULTING CORP MCC ; ACRE COKING AND REFRACTORY ENGINEERING CONSULTING CORP MCC

Assignee(s): ACRE COKING AND REFRACTORY ENGINEERING CONSULTING MCC CORP

Inventor(s): (std): CHEN HAIWEN ; DUAN YANQUAN ; LI ZHENGUO ; LIU PAI ; SHI YINGDI ; YAN XIANGYU ; YANG JUNFENG ; YANG ZHONGYI ; YUAN CHAOHUI ; YUAN ZHAOHUI ; ZHANG CHUNCAI ; ZHENG YAJIE

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
CN105802642 A	20160727	LSPB	+	published / reissued	
CN105802642 A	20160727	LSPB	+C06	PUBLICATION	
CN105802642 A	20180821	LSAS	TA01	TRANSFER OF PATENT APPLICATION RIGHT	
CN205653397 U	20161019	LSGT	+	granted / extensions (spc, cpc, pte)	
CN205653397 U	20161019	LSGT	+C14	GRANT OF PATENT OR UTILITY MODEL	
CN205653397 U	20180821	LSAS	TR01	TRANSFER OF PATENT RIGHT	
CN205653397 U	20260426	PEXP		Calculated Patent Term Expiry	

Title: METHOD FOR COPRODUCING DIRECTLY REDUCED IRON IN PROCESS OF COKE DRY QUENCHING BY COKE OVEN GAS

Abstract: The invention discloses a method for coproducing directly reduced iron in the process of coke dry quenching by coke oven gas. The method comprises the following steps of: introducing the coke oven gas or excessive purge gas obtained after methanol is prepared from the coke oven gas, which replaces nitrogen to serve as a heat transfer medium for cooling red coke, into a coke drying **quenching oven**; absorbing sensible heat of the red coke in the process of cooling the red coke, heating to the temperature of between 650 and 960DEG C, and discharging the gas serving as a hydrogen-rich reducing gas out of the coke drying **quenching oven**; heating the hydrogen-rich reducing gas to the temperature of between 1,000 and 1,150DEG C by supplying oxygen to provide heat for directly reducing iron from iron ore-coal pellets; and supplying coke oven gas by using furnace top gas produced in the process of directly reducing the iron, or balancing a carbon hydrogen rate by using a carbon element in the excessive purge gas obtained after methanol is prepared from the coke oven gas.

Classifications:

International (IPC 8-9): C21B13/02 (Advanced/Invention)

Family:

Publication number	Publication date	Application number	Application date
CN102206724 A	20111005	CN201110112050	20110503
CN102206724 B	20120905	CN201110112050	20110503

Priority:

CN201110112050 20110503

Probable Assignee: YAJIE SU

Assignee(s): (std): YAJIE SU

Assignee(s): SU YAJIE

Inventor(s): (std): YADA SU ; YAJIE SU ; YINGHU DU ; SHOULIN CHEN

Inventor(s): SU YAJIE ; DU YINGHU ; CHEN SHOULIN ; SU YADA

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
CN102206724 A	20111005	LSPB	+	published / reissued	
CN102206724 A	20111005	LSPB	+C06	PUBLICATION	
CN102206724 B	20120905	LSGT	+	granted / extensions (spc, cpc, pte)	
CN102206724 B	20120905	LSGT	+C14	GRANT OF PATENT OR UTILITY MODEL	
CN102206724 B	20160622	LSWD	-EXPY	TERMINATION OF PATENT RIGHT OR UTILITY MODEL	
CN102206724 B	20310503	PEXP		Calculated Patent Term Expiry	

Title: FOUR DE TREMPER A BAIN DE SEL **QUENCHING OVEN** BATH SALT (Machine translation)

Classifications:

International (IPC 8-9): H05B3/60 (Advanced/Invention);

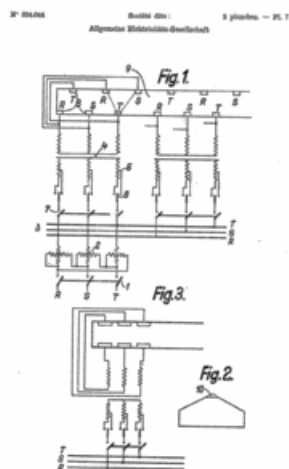
H05B3/60 (Core/Invention)

International (IPC 1-7): H05B3/62

CPC: H05B3/60

European: H05B3/60

PatBase - FR834044_A



Family:

Publication number	Publication date	Application number	Application date
FR834044 A	19381109		19380219

Priority:

19370305

Probable Assignee: AEG

Assignee(s): (std): AEG

Assignee(s): ALLGEMEINE ELEKTRICITÄTS GES ; ALLGEMEINE ELEKTRICITÄTS GESELLSCHAFT

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
FR834044 A	19381109	LSGT	+	granted / extensions (spc, cpc, pte)	
FR834044 A	19580219	PEXP		Calculated Patent Term Expiry	

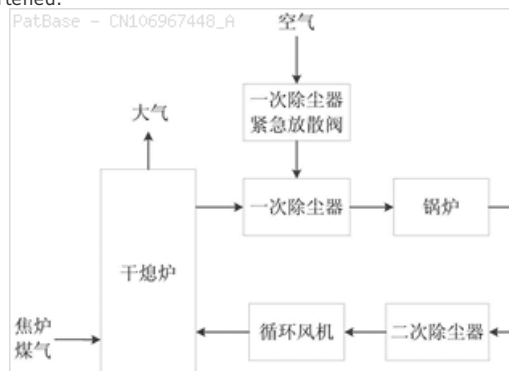
Title: OVEN DRYING METHOD FOR COKE DRY QUENCHING SYSTEM AFTER LARGE-AREA REPLACEMENT OF REFRACTORY MATERIALS

Abstract: The invention relates to the technical field of coke dry quenching, in particular to an oven drying method for a coke dry quenching system after large-area replacement of refractory materials. The oven drying method includes the steps: drying warm air, taking the inlet temperature T2 of a dry **quenching oven** as main management temperature and increasing the temperature T5 of a pre-storage section of the dry **quenching oven** to 100-120 degrees centigrade from normal temperature; mounting a coke dry quenching gas baking oven combustor, leading air to assist in burning of coke oven gas for oven drying by adjusting a primary dust collector emergency blow-off valve, taking the temperature T5 of the pre-storage section of the dry **quenching oven** as main management temperature and increasing the temperature T5 to 500-600 DEG C; replacing gas for the dry **quenching oven** by N₂, controlling the component content of combustible gas within a safety range, throwing red coke into the dry **quenching oven** for oven drying, finally increasing the inlet temperature T6 of a coke dry quenching boiler to 800-960 DEG C, and increasing the temperature T5 of the pre-storage section of the dry **quenching oven** to 800-1050 DEG C. Gas oven drying and red coke oven drying are combined, oven drying quality is ensured, and oven drying construction period is shortened.

Classifications:

International (IPC 8-9): C10B39/02 (Advanced/Invention)

CPC: C10B39/02



Family:

Publication number	Publication date	Application number	Application date
CN106967448 A	20170721	CN201710223920	20170407

Priority:

CN201710223920 20170407

Probable Assignee: ANYANG IRON AND STEEL CO LTD

Assignee(s): (std): ANYANG IRON AND STEEL CO LTD

Assignee(s): ANYANG IRON AND STEEL CO

Inventor(s): (std): LIU LIJUN ; LI DEYONG ; GAO FENGLIN ; XIANG HAIFEI ; ZHANG ZHIYONG ; ZHANG HANQING ; WANG HONGSHUN ; JIN YINGWU ; CHEN XIN ; GAO LIDONG

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
CN106967448 A	20170721	LSPB	+	published / reissued	

Title: DRY QUENCHING FACILITY OF COKE HAVING HEATING CHAMBER

Abstract: PURPOSE: To provide a dry quenching facility for stably and completely carbonizing and quenching uncarbonized coke in the medium or low-temperature carbonization operation of a coke oven. CONSTITUTION: A **quenching oven** 1 is constructed of a prechamber A, a heating chamber B and a cooling chamber C. A plurality of lower gas exhaustion ports 2 connected to a lower ring channel 3 are attached to the inner wall of the upper part of the cooling chamber C, a plurality of upper gas exhaustion ports 4 connected to an upper ring channel 5 are attached to the inner wall of the upper part of the heating chamber B and a pipe 9 for blowing heating gas is erected in the cooling chamber C along the center axis of the chamber in a state to position the upper opening below the heating chamber B. The uncarbonized coke in the heating chamber B is heated and completely carbonized by the heating gas blown from the gas blowing pipe 9 into the heating chamber B and the carbonized coke is quenched and cooled in the cooling chamber C.

Classifications:

International (IPC 8-9): C10B39/02 (Advanced/Invention);
C10B39/00 (Core/Invention)

International (IPC 1-7): C10B39/02

PatBase - JP7268333_A2



Family:

Publication number	Publication date	Application number	Application date
JP3063520 B2	20000712	JP19940087370	19940331
JP7268333 A2	19951017	JP19940087370	19940331

Priority:

JP19940087370 19940331

Probable Assignee: JFE HOLDINGS INC

Assignee(s): (std): JFE ENGINEERING CORP ; JFE HOLDINGS INC ; NIPPON KOKAN KK

Assignee(s): NKK CORP

Inventor(s): (std): TAKAI TOSHIO

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
JP3063520 B2	20000712	LSGT	+	granted / extensions (spc, cpc, pte)	
JP3063520 B2	20140331	PEXP		Calculated Patent Term Expiry	
JP7268333 A2	19951017	LSPB	+	published / reissued	

Title: METHOD FOR CONTROLLING STEAM THROUGHPUT OF BOILER IN DRY COKE QUENCHER

Abstract: PURPOSE: To stabilize the steam throughput of a boiler by measuring the temperatures of a recirculation gas recirculating through a **quenching oven** and a boiler at the inlet and outlet of the boiler and its flow rate and regulating the degree of opening of an air supply valve of the **quenching oven** according to the measured values. CONSTITUTION: Red-hot coke is fed into a **quenching oven** 1 from its top, while a recirculation gas is allowed to recirculate through the oven 1, a recirculation gas duct 2, a dust catcher 3, a boiler 4, a recirculation gas pipe 5 and a blower 6. The high-temperature coke is cooled in the oven 1, and steam is generated in the boiler 4. The temperature of the recirculation gas at the inlet of the boiler 4 is measured with a thermometer 11, the temperature of the gas at the outlet of the boiler 4 is measured with a thermometer 12, and the flow rate of the gas is measured with a flowmeter 7. The measured values are inputted to an operation control unit 10 and operated. The degree of opening of an air supply valve 9 provided in the oven 1 is regulated according to the output of the unit 10 to control the steam throughput of the boiler 4.

Classifications:

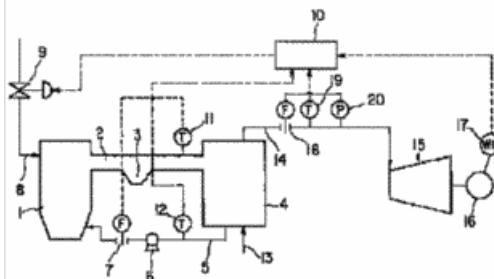
International (IPC 8-9): C10B39/02 C10B41/00

F22B1/18 (Advanced/Invention);

C10B39/00 C10B41/00 F22B1/00 (Core/Invention)

International (IPC 1-7): C10B39/02 C10B41/00 F22B1/18

PatBase - JP8283726_A2



Family:

Publication number	Publication date	Application number	Application date
JP8283726 A2	19961029	JP19950083006	19950407

Priority:

JP19950083006 19950407

Probable Assignee: NIPPON STEEL CORP

Assignee(s): (std): NIPPON STEEL CORP

Inventor(s): (std): YAMATO RYUSUKE ; TAKESHITA KAZUHIRO ; HAYASHI KAZUYUKI

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
JP8283726 A2	19961029	LSPB	+	published / reissued	
JP8283726 A2	20040324	LSSES	-A131	NOTIFICATION OF REASONS FOR REFUSAL	TEXT : JAPANESE INTERMEDIATE CODE: A131 EFFECTIVE DATE : 20040323
JP8283726 A2	20040721	LSRV	-A02	DECISION OF REFUSAL	TEXT : JAPANESE INTERMEDIATE CODE: A02 EFFECTIVE DATE : 20040720

Title: REPAIR OF OVEN WALL IN DRY COKE QUENCHING EQUIPMENT

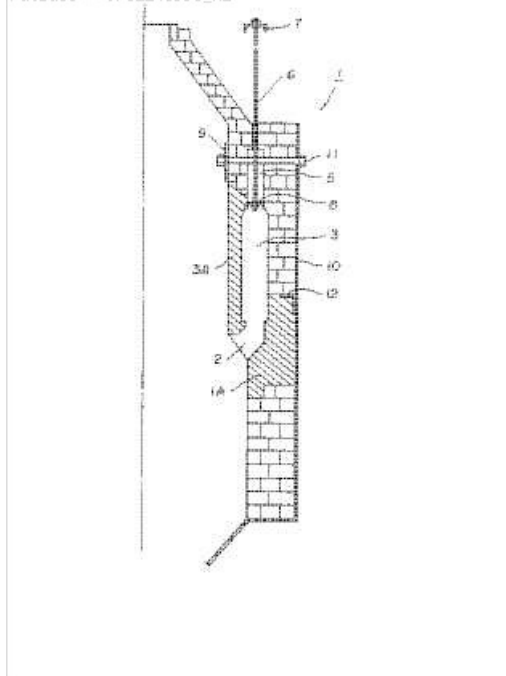
Abstract: PURPOSE: To disassemble only a required place and economically carry out repair in a short time, by vertically fixing a brick hanging rod so that the lower end thereof may pass through brick of the oven wall of the **quenching oven** and reach the interior of an annular channel of the above-mentioned body, etc. CONSTITUTION: A brick hanging rod 6 is vertically fixed so that the lower end thereof may pass through brick of the oven wall of the **quenching oven** and reach the interior of an annular channel 3 of the body and hanging metal fittings 8 are fixed on the lower end of the rod 6. Inner wall brick in the channel 3 and outer wall brick near gas vent hole 2 are disassembled to hoist the top of the body 1 with the rod 6 and the above-mentioned inner wall brick and outer wall brick are newly constructed.

Classifications:

International (IPC 8-9): C10B29/06 C10B39/02 (Advanced/Invention)

International (IPC 1-7): C10B29/06 C10B39/02

PatBase - JP62143993_A2



Family:

Publication number	Publication date	Application number	Application date
JP1770927 C3	19930630	JP19850284413	19851219
JP4060517 B4	19920928	JP19850284413	19851219
JP62143993 A2	19870627	JP19850284413	19851219

Priority:

JP19850284413 19851219

Probable Assignee: NIPPON KOKAN KK

Assignee(s): (std): NIPPON KOKAN KK

Inventor(s): (std): NIITSUMA TAKAHIRO ; HARADA YOSHISADA ; HOSOE MASATOSHI ; IIJIMA HIDEO ; WATANABE SHIGEYUKI ; SAITO SHICHIRO ; KODA SHOJI ; OKADA KOJI ; INOUE TOSHIMASA

Inventor(s): INOE TOSHIMASA

Legal status (INPADOC)

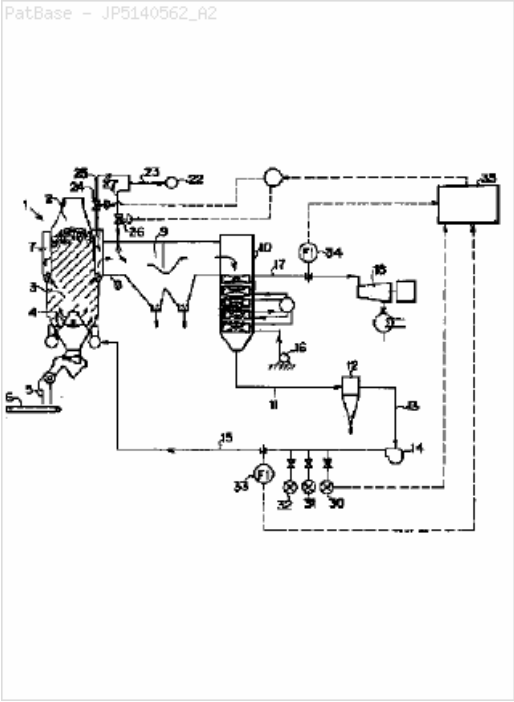
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Patent	Date recorded	Event group	Code	Event	Details
JP1770927 C3	19930630	LSGT	+	granted / extensions (spc, cpc, pte)	
JP1770927 C3	20051219	PEXP		Calculated Patent Term Expiry	
JP4060517 B4	19920928	LSPB	+	published / reissued	
JP62143993 A2	19870627	LSPB	+	published / reissued	

Title: RECOVERY OF STEAM IN FACILITY FOR DRY-QUENCHING OF COKE

Abstract: PURPOSE:To increase the amount of generated steam and improve the yield of lump coke by calculating the necessary amount of air for burning combustible gas in a circulating gas from the difference between the target steam generation and the real steam generation and blowing the calculated amount of air, thereby effecting the complete combustion of the combustible gas. CONSTITUTION:Red-hot coke discharged from a coke oven is charged into a **quenching oven** 1 and quenched by blowing cooling gas. The gas heated by the heat-exchange is introduced into a waste-heat boiler 10 and the cooled gas is again blown into the **quenching oven** 1. In the dry-coke quenching facility having the above mechanism, the amount of air necessary for burning the combustible gas in a circulating gas is calculated from the difference between the target steam generation and the real steam generation and the calculated amount of air is blown into the flue 7 and the outlet duct 8 of the **quenching oven** at the same time. The combustible gas in the circulating gas of the dry- cake quenching facility is completely burned by this process to increase the steam generation by the waste-heat boiler and improve the yield of lump coke.

Classifications:
International (IPC 8-9): C10B39/02 (Advanced/Invention);
C10B39/00 (Core/Invention)
International (IPC 1-7): C10B39/02
CPC: Y02P20/129



Family:

Publication number	Publication date	Application number	Application date
JP5140562 A2	19930608	JP19910303484	19911119

Priority:

JP19910303484 19911119

Probable Assignee: NIPPON KOKAN KK

Assignee(s): (std): NIPPON KOKAN KK

Assignee(s): NKK CORP

Inventor(s): (std): BODA KOSAKU ; HIRANO SHIGEYUKI ; IGUCHI MASAKATSU ; MATSUMOTO KAZUTOSHI ; YAMATE YOSHITOMO

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
JP5140562 A2	19930608	LSPB	+	published / reissued	

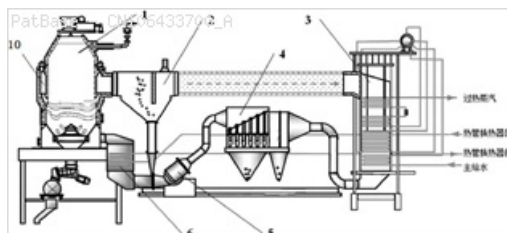
Title: COKE DRY QUENCHING DUST REMOVAL SYSTEM AND PROCESS CAPABLE OF EFFICIENTLY RECOVERING HEAT ENERGY

Abstract: The invention relates to a coke dry quenching dust removal system and a process capable of efficiently recovering heat energy. The coke dry quenching dust removal system comprises a coke dry **quenching oven**, an integral dust remover and a coke dry quenching boiler, wherein the coke dry **quenching oven** conveys high-temperature circulating gas after dust removal into the coke dry quenching boiler for heat exchange through the integral dust remover; the integral dust remover is a water-cooled cyclone dust remover; an upper ring header and a lower ring header arranged at the upper part of the integral dust remover are respectively connected with a coke dry quenching boiler steam drum through an ascending tube and a descending tube to form a heat exchange water circuit between the integral dust remover and the dry quenching coke boiler steam drum; a lower heat exchange tube bundle outlet formed in the lower part of the integral dust remover is connected with a coke dry quenching boiler coal economizer; an inlet is connected with a coke dry quenching boiler water supply pipeline. The coke dry quenching dust removal system and process provided by the invention have the benefits that the structure is firmer, and the service life of the dust remover is prolonged; the floor area of a coke dry quenching device is reduced; the utilization rate of heat energy and coke powder are improved, so that the residual heat utilization rate of coke dry quenching is improved; the service life of the coke dry quenching boiler is prolonged, and the maintenance costs of the coke dry quenching boiler and a circulating fan are reduced.

Classifications:

International (IPC 8-9): C10B39/02 C10B43/04 (Advanced/Invention)

CPC: C10B39/02 C10B43/04



Family:

Publication number	Publication date	Application number	Application date
CN106433700 A	20170222	CN201611039835	20161111

Priority:

CN201611039835 20161111

Probable Assignee: ACRE COKING AND REFRACTORY DALIAN ENG CONSULTING CORP MCC

Assignee(s): (std): ACRE COKING AND REFRACTORY DALIAN ENG CONSULTING CORP MCC

Assignee(s): ACRE COKING AND REFRACTORY DALIAN ENGINEERING CONSULTING MCC CORP ; ACRE COKING AND REFRACTORY ENGINEERING TECHNOLOGY CO LTD DALIAN ; MCC JIAO NAI DALIAN ENGINEERING LTD

Inventor(s): (std): ZHANG HAILONG ; HE YUTAO ; REN ZHONG ; JIANG NING ; XIAO LI ; JIN JIHAO ; JIANG FU

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
CN106433700 A	20170222	LSPB	+	published / reissued	
CN106433700 A	20170222	LSPB	+C06	PUBLICATION	

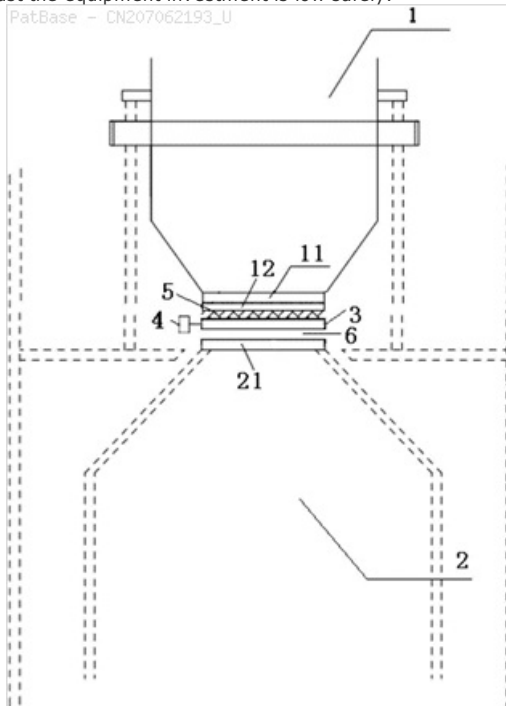
Title: **QUENCHING OVEN** COKE JAR AND ADORN BURNT DEVICE

Abstract: The utility model provides a **quenching oven** coke jar, include burnt jar body and set up in the bottom door of burnt jar body bottom, the bottom door is including being provided with the base plate of a plurality of discharge openings and installing burnt jar of revolving bed gate below the base plate, it is at the perpendicular to the flat rotation in surface of material flow direction is in order to seal or to open the discharge opening, still provide one kind and adorned burnt device, included **quenching oven** coke jar and quenching stove bell still including middle sealed rotatory gate, are located on the quenching stove bell, including the gate body that is provided with the blanking hole, drive arrangement, with middle sealed rotatory gate is connected, is used for driving middle sealed rotatory gate is at the perpendicular to the flat rotation in surface of material flow direction is in order to realize the discharge opening with the intercommunication of feed port is with isolated. Burnt device easy operation, stability are adorned to the aforesaid, just the equipment investment is low safely.

Classifications:

International (IPC 8-9): C10B39/02 C10B39/12
F16J15/40 (Advanced/Invention)

PatBase - CN207062193_U



Family:

Publication number	Publication date	Application number	Application date
CN207062193 U	20180302	CN201720625926U	20170601

Priority:

CN201720625926U 20170601

Probable Assignee: CREATIVE ENVIRONMENTAL PROTECTION AND ENERGY SAVING TECH DALIAN LTD

Assignee(s): (std): CREATIVE ENVIRONMENTAL PROTECTION AND ENERGY SAVING TECH DALIAN LTD

Assignee(s): DALIAN SCIENCE AND TECHNOLOGY CO LTD CENTRAL COLLETT ; CREATIVE ENVIRONMENTAL PROTECTION AND ENERGY SAVING TECHNOLOGY DALIAN LTD ; COLLETT CENTRAL ENERGY TECHNOLOGY DALIAN CO LTD

Inventor(s): (std): AN NING ; BAI SHOUMING ; YIN SI ; WANG DONGFENG ; GAO YUNXU ; ZHAN HONGYU ; ZHANG MEIWEI

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
CN207062193 U	20180302	LSGT	+	granted / extensions (spc, cpc, pte)	
CN207062193 U	20180302	LSGT	+GR01	PATENT GRANT	
CN207062193 U	20270601	PEXP		Calculated Patent Term Expiry	

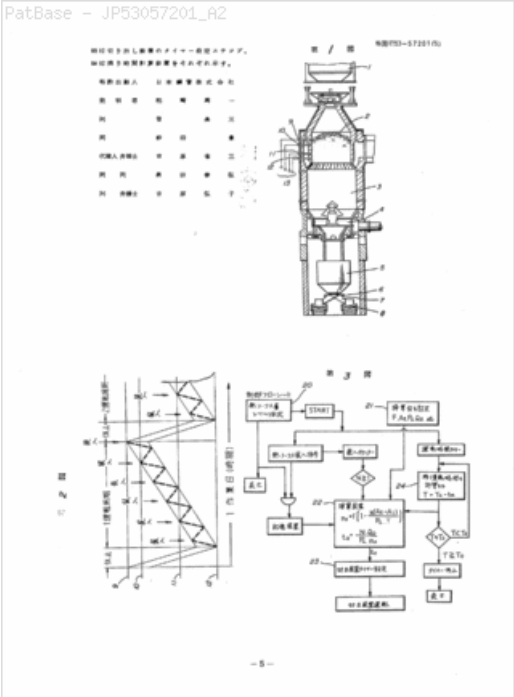
Title: AUTOMATIC CONTROL OF HOT COKE LAYER LEVEL IN DRY **QUENCHING OVEN**

Abstract: PURPOSE: To keep the quenching process of hot coke in a stable state, by maintaining almost the equal mining quantity of coke under the oven regardless of the pushing operation or downtime at all times.

Classifications:

International (IPC 8-9): C10B39/02 G05D9/00 (Advanced/Invention);
C10B39/00 G05D9/00 (Core/Invention)

International (IPC 1-7): C10B39/02 G05D9/00



Family:

Publication number	Publication date	Application number	Application date
JP53057201 A2	19780524	JP19760132641	19761104

Priority:

JP19760132641 19761104

Probable Assignee: NIPPON KOKAN KK

Assignee(s): (std): NIPPON KOKAN KK

Inventor(s): (std): KASHIWAZAKI SHIYUICHI ; SUGA YOSHIZOU ; MAEDA YUTAKA

Legal status (INPADOC)

[View legal status timeline](#)

Patent	Date recorded	Event group	Code	Event	Details
JP53057201 A2	19780524	LSPB	+	published / reissued	

Title: Process for producing a zinc oxide (ZnO) varistor

Abstract: A process for producing zinc oxide varistors is to perform the doping of zinc oxide and the sintering of zinc oxide grains with a high-impedance sintering material through two independent procedures, so that the doped zinc oxide and the high-impedance sintering material are well mixed in a predetermined ratio and then used to make the zinc oxide varistors through conventional technology by low-temperature sintering (lower than 900 degrees C); the resultant zinc oxide varistors may use pure silver as inner electrode and particularly possess one or more of varistor properties, thermistor properties, capacitor properties, inductor properties, piezoelectricity and magnetism.

Classifications:

International (IPC 8-9): C04B35/453 C04B35/622 H01C17/00

H01C17/30 H01C7/10 H01C7/112 (Advanced/Invention);

C01G9/02 (Advanced/Non-invention)

CPC: H01C7/112

European: H01C7/112

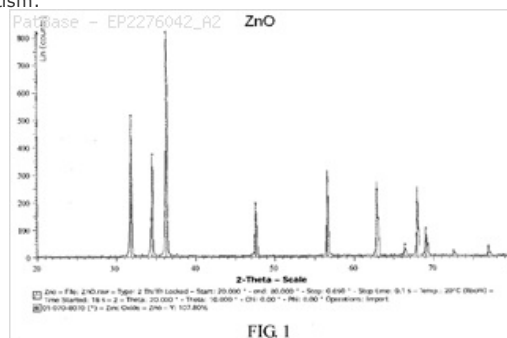


FIG 1

Family:

Publication number	Publication date	Application number	Application date
CN101630553 A	20100120	CN200910160014	20090717
CN101630553 B	20111012	CN200910160014	20090717
EP2276042 A2	20110119	EP20100169880	20100716
EP2276042 A3	20120411	EP20100169880	20100716
JP2011040734 A2	20110224	JP20100161820	20100716
JP5190492 B2	20130424	JP20100161820	20100716

Priority:

CN200910160014 20090717

Probable Assignee: SFI ELECTRONICS TECHNOLOGY INC

Assignee(s): (std): LEADER WELL TECHNOLOGY CO LTD ; SFI ELECTRONICS TECHNOLOGY INC

Inventor(s): (std): ZHIXIAN XU ; QINGHONG LIAN ; JUNAN LIN ; HONGZONG XU ; XINGXIANG HUANG ; JIEAN ZHU ; ZHENGZONG GUO ; TINGYI FANG ; FANG TING YI ; ZHU JIE AN ; LIEN CHING HOHN ; XU ZHI XIAN ; XU HONG ZONG ; LIN JIU NAN ; KUO CHENG TSUNG ; HUANG XING XIANG ; LIN JIU NUN ; AN ZHU JIE

Inventor(s): ZHU JIEAN ; XU ZHIXIAN ; FANG TINGYI ; XU HONGZONG ; HUANG XINGXIANG ; LIAN QINGHONG ; GUO ZHENGZONG ; LIN JUNAN

Agent(s): BECK AND ROESSIG EUROPEAN PATENT ATTORNEYS

Designated states: AL AT BA BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC ME MK MT NL NO PL PT RO RS SE SI SK SM TR

Legal status (INPADOC)

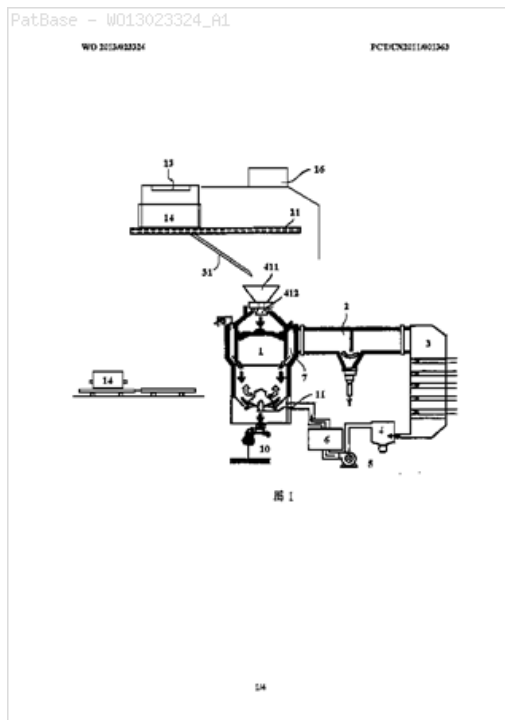
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Patent	Date recorded	Event group	Code	Event	Details
CN101630553 A	20100120	LSPB	+	published / reissued	
CN101630553 A	20100120	LSPB	+C06	PUBLICATION	
CN101630553 B	20111012	LSGT	+	granted / extensions (spc, cpc, pte)	
CN101630553 B	20111012	LSGT	+C14	GRANT OF PATENT OR UTILITY MODEL	
CN101630553 B	20290717	PEXP		Calculated Patent Term Expiry	
EP2276042 A2	20110119	LSPB	+	published / reissued	
EP2276042 A3	20121121	LSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 20121011
EP2276042 A3	20180704	LSDW	-18D	APPLICATION DEEMED TO BE WITHDRAWN	EFFECTIVE DATE : 20180201
JP2011040734 A2	20110224	LSPB	+	published / reissued	
JP2011040734 A2	20110921	LSES	-A131	NOTIFICATION OF REASONS FOR REFUSAL	TEXT : JAPANESE INTERMEDIATE CODE: A131 EFFECTIVE DATE : 20110920
JP2011040734 A2	20111221	LSRE	A521	WRITTEN AMENDMENT	TEXT : JAPANESE INTERMEDIATE CODE: A523 EFFECTIVE DATE : 20111220

JP2011040734 A2	20120704	LSSES	-A131	NOTIFICATION OF REASONS FOR REFUSAL	TEXT : JAPANESE INTERMEDIATE CODE: A131 EFFECTIVE DATE : 20120703
JP2011040734 A2	20120915	LSRE	A521	WRITTEN AMENDMENT	TEXT : JAPANESE INTERMEDIATE CODE: A523 EFFECTIVE DATE : 20120914
JP2011040734 A2	20121228	LSGT	+TRDD	DECISION OF GRANT OR REJECTION WRITTEN	
JP2011040734 A2	20130116	LSGT	+A01	WRITTEN DECISION TO GRANT A PATENT OR TO GRANT A REGISTRATION (UTILITY MODEL)	TEXT : JAPANESE INTERMEDIATE CODE: A01 EFFECTIVE DATE : 20130115
JP2011040734 A2	20130131	LSFE	+A61	FIRST PAYMENT OF ANNUAL FEES (DURING GRANT PROCEDURE)	TEXT : JAPANESE INTERMEDIATE CODE: A61 EFFECTIVE DATE : 20130128
JP2011040734 A2	20130201	LSFE	+FPAY	RENEWAL FEE PAYMENT (EVENT DATE IS RENEWAL DATE OF DATABASE)	YEAR OF FEE PAYMENT : 3
JP2011040734 A2	20130201	LSGT	+R150	CERTIFICATE OF PATENT OR REGISTRATION OF UTILITY MODEL	TEXT : JAPANESE INTERMEDIATE CODE: R150
JP2011040734 A2	20130201	LSGT	+R150	CERTIFICATE OF PATENT OR REGISTRATION OF UTILITY MODEL	TEXT : JAPANESE INTERMEDIATE CODE: R150 REF DOCUMENT NUMBER : 5190492 COUNTRY OF REF DOCUMENT : JP
JP5190492 B2	20130424	LSGT	+	granted / extensions (spc, cpc, pte)	
JP5190492 B2	20130117	LSGT	+A01	特許査定書 (Decision of patent grant)	
JP5190492 B2	20130129	LSFE	R100	特許料納付書 (Patent fee payment form)	
JP5190492 B2	20160204	LSFE	R20	特許料納付書 (Patent fee payment form)	
JP5190492 B2	20160209	LSFE	+R250	RECEIPT OF ANNUAL FEES	TEXT : JAPANESE INTERMEDIATE CODE: R250
JP5190492 B2	20170112	LSFE	R20	特許料納付書 (Patent fee payment form)	
JP5190492 B2	20170117	LSFE	+R250	RECEIPT OF ANNUAL FEES	TEXT : JAPANESE INTERMEDIATE CODE: R250
JP5190492 B2	20180118	LSFE	R20	特許料納付書 (Patent fee payment form)	
JP5190492 B2	20180130	LSFE	+R250	RECEIPT OF ANNUAL FEES	TEXT : JAPANESE INTERMEDIATE CODE: R250
JP5190492 B2	20190124	LSFE	R20	特許料納付書 (Patent fee payment form)	
JP5190492 B2	20190212	LSFE	+R250	RECEIPT OF ANNUAL FEES	TEXT : JAPANESE INTERMEDIATE CODE: R250
JP5190492 B2	20191031	LSFE	R20	特許料納付書 (Patent fee payment form)	EFFECTIVE DATE : 20191030
JP5190492 B2	20191112	LSFE	+R250	RECEIPT OF ANNUAL FEES	TEXT : JAPANESE INTERMEDIATE CODE: R250
JP5190492 B2	20300716	PEXP		Calculated Patent Term Expiry	

Title: DRY COKE-QUENCHING DEVICE FOR HEAT-RECOVERY-TYPE COKE OVEN

Abstract: A dry coke-quenching device for a heat-recovery-type coke oven, comprising a charging device and a dry coke-quenching oven (1), wherein the charging device comprises a hoist (13) and a containing device for containing the red coke outputted from the coke oven, the hoist (13) being used for elevating the containing device for containing the red coke to the top of the dry coke-quenching oven (1) and placing the empty containing device from the top of the dry coke-quenching oven (1) onto a coke-receiving car, and the containing device being a coke ark (14) having a box-shaped structure. The dry coke-quenching device for a heat-recovery-type coke oven solves the problem of the impossibility of using dry quenching for red coke carbonized by a horizontal coke oven, and dispenses with the need to provide a discharge dedusting device at the outlet of the coke oven, thereby reducing the manufacturing and operating costs for a heat-recovery-type coke oven, and at the same time, the contact between the red coke and the air can be reduced, thereby decreasing the loss of heat.

Classifications:**International (IPC 8-9):** C10B39/02 (Advanced/Invention)**CPC:** C10B39/02**Family:**

Publication number	Publication date	Application number	Application date
CN103857769 A	20140611	CN201180072876	20110816
WO13023324 A1	20130221	WO2011CN01363	20110816

Priority:

WO2011CN01363 20110816

Probable Assignee: BEIJING HUATAI COKING ENGINEERING CONSULTING CORP**Assignee(s):** (std): BEIJING HUATAI COKING ENGINEERING CONSULTING CORP ; BEIJING HUATAI COKING ENGINEERING TECHNOLOGY CO LTD ; XU LIE**Assignee(s):** BEIJING HUATAI COKING ENGINEERING TECHNOLOGY CO**Inventor(s):** (std): CHEN XIAOGUANG ; LIU LINGLING ; WANG BIN ; WANG BO ; XU LIE ; ZHAO HONGGANG**Agent(s):** TEE AND HOWE INTELLECTUAL PROPERTY ATTORNEYS

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT QA RO RS RU 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

Legal status (INPADOC)[View legal status timeline](#)

Patent	Date recorded	Event group	Code	Event	Details
CN103857769 A	20140611	LSPB	+	published / reissued	
CN103857769 A	20140611	LSPB	+C06	PUBLICATION	
CN103857769 A	20170531	LSRV	-RJ01	REJECTION OF INVENTION PATENT APPLICATION AFTER PUBLICATION	
WO13023324 A1	20130221	LSPB	+	published / reissued	
WO13023324 A1	20140217	LSNE	NENP	NON-ENTRY INTO THE NATIONAL PHASE IN:	REF COUNTRY CODE : DE
WO13023324 A1	20140910	LSNE	-122	EP: PCT APPLICATION NON-ENTRY IN EUROPEAN PHASE	REF DOCUMENT NUMBER : 11871091

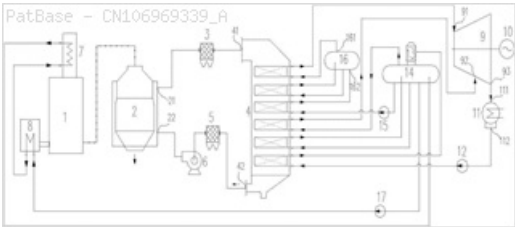
COUNTRY OF REF
DOCUMENT : EP
KIND CODE OF
REF DOCUMENT :
A1
DESIGNATED
STATE(S) :

Title: INTEGRATED POWER GENERATION SYSTEM BASED ON RECYCLING OF WASTE HEAT OF COKING PLANT

Abstract: The invention provides a thermal power generation system based on recycling of waste heat of a coking plant. The system comprises a coke oven, a dry **quenching oven**, a dry quenching coke waste heat boiler, a raw coke oven gas waste heat recovering device, a waste flue gas waste heat recovering device, a drum, a forced circulation pump, a steam turbine and a power generator; a forced circulation loop is formed among the drum, the waste flue gas waste heat recovering device and the raw coke oven gas waste heat recovering device; and saturated steam separated by the drum is superheated in the dry quenching coke waste heat boiler and then enters the steam turbine to drive the steam turbine to do work and drive the power generator to generate power. With the system, coke sensible heat, raw coke oven gas sensible heat and waste flue gas sensible heat which are produced with the production technology of the dry quenching coke oven can be comprehensively integrated and recovered and can be used for driving the steam turbine to generate power; and compared with the traditional mode that three waste heat resources are recovered separately, the system is greatly simplified, the construction cost is substantially reduced, and the comprehensive efficiency of the waste heat recovering system is remarkably improved.

Classifications:

International (IPC 8-9): C10B57/00 F01D15/10 F01K11/02 F22B1/18 (Advanced/Invention)
CPC: F22B1/18 C10B57/00 F01D15/10 F01K11/02 Y02P20/129 C10B57/005



Family:

Publication number	Publication date	Application number	Application date
CN106969339 A	20170721	CN201710352836	20170518

Priority:

CN201710352836 20170518

Probable Assignee: HUATIAN NANJING ENGINEERING AND TECHNOLOGY CORP MCC

Assignee(s): (std): HUATIAN NANJING ENGINEERING AND TECH MCC CORP ; HUATIAN NANJING ENGINEERING AND TECHNOLOGY CORP MCC ; MCC HUATIAN NANJING ENGINEERING AND TECHNOLOGY CORP

Assignee(s): HUATIAN NANJING ENGINEERING AND TECHNOLOGY MCC CORP

Inventor(s): (std): JIANG WENHAO

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
CN106969339 A	20170721	LSPB	+	published / reissued	

Title: ANLAGE ZUM UNUNTERBROCHENEN VERGUETEN VON BAENDERN O. DGL. SYSTEM FOR CONTINUOUS tempering of ribbons OR THE LIKE. (Machine translation)

Abstract: Source: DE635283A [DE] (Claim 1) 1. PATENTANSPRUECHE: i. Anlage zum ununterbrochenen Ver gueten von Baendern, Draehten, Ketten o. dgl., gekennzeichnet durch einen -Schachtofen (i) und einen unmittelbar neben demselben angeordneten, fuer sich beheizten Anlassstutzen (35), welche beide unten von einem Haertebad luftdicht abge schlossen sind und oben miteinander der art in Verbindung stehen, dass die aus dem Anlassstutzen in den Schachtofen abziehen den Heizgase das auf Haertetemperatur zu bringende Gut vorwaermen.

Machine translation: (claim 1) 1 Claims: i plant for continuously Ver grades of ribbons, wires, chains or the like, characterized by a shaft furnace (i) and an immediately next to it, arranged for a heated occasion nozzle (35), both of which the bottom air-tight by a hardening bath completed and included with each of the above type are in communication, that the pull of the event socket in the shaft furnace the hot gases to preheat the Haertetemperatur Good to be brought.

Classifications:

International (IPC 8-9): C21D9/00 C21D9/56 (Advanced/Invention); C21D9/00 C21D9/56 (Core/Invention)

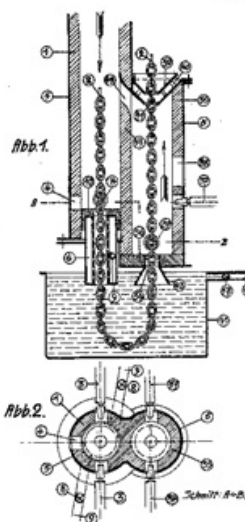
International (IPC 1-7): C21D9/56

CPC: C21D9/0087 C21D9/56

European: C21D9/00T C21D9/56

PatBase - DE635283_A

Zur Patentnr. 635 283
Kl. 18a Gr. 6aa



Family:

Publication number	Publication date	Application number	Application date
DE635283 A	19360914	DE1932B156515D	19320709

Priority:

DE1932B156515 19320709

Probable Assignee:

EWALD BRINKMANN

Assignee(s): (std):

EWALD BRINKMANN

Legal status (INPADOC)

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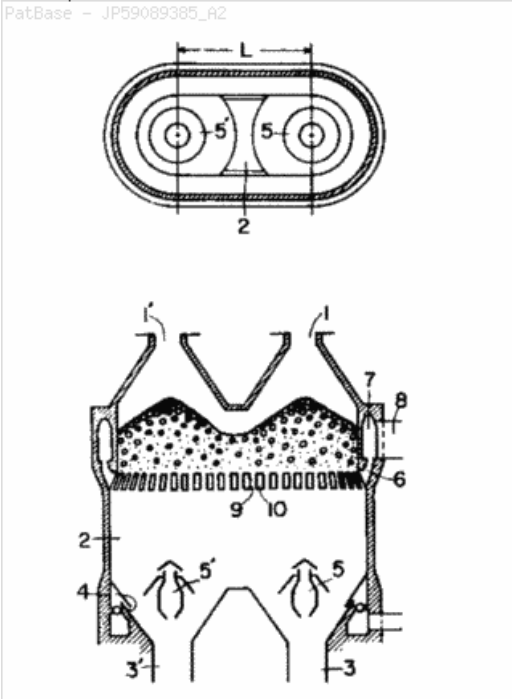
Patent	Date recorded	Event group	Code	Event	Details
DE635283 A	19360914	LSGT	+	granted / extensions (spc, cpc, pte)	

Title: DRY **QUENCHING OVEN** OF COKE

Abstract: PURPOSE: To carry out the quenching and discharging of red-hot coke uniformly and efficiently and prevent the occurrence of clogging accidents, etc., by means of an oven having an elliptical horizontal cross section and further plural charging inlets and discharging outlets in the elliptical direction. CONSTITUTION: A dry **quenching oven** of coke having an elliptical horizontal cross section (L) thereof and plural charging inlets 1 and 1' and discharging outlets 3 and 3' in the elliptical direction. In quenching red-hot coke discharged from a coke oven using the resultant dry **quenching oven** of the coke, the charging and discharging of the red-hot coke are uniformly and efficiently carried out to eliminate the blowing up of the red-hot coke to a small flue, and the prevention of the clogging accidents, etc. is possible.

Classifications:

International (IPC 8-9): C10B39/02 (Advanced/Invention);
C10B39/00 (Core/Invention)
International (IPC 1-7): C10B39/02



Family:

Publication number	Publication date	Application number	Application date
JP59089385 A2	19840523	JP19820198393	19821111

Priority:

JP19820198393 19821111

Probable Assignee: SUMITOMO METAL IND
Assignee(s): (std): SUMITOMO METAL IND
Assignee(s): SUMITOMO KINZOKU KOGYO KK
Inventor(s): (std): KURITA KOUICHI

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
JP59089385 A2	19840523	LSPB	+	published / reissued	

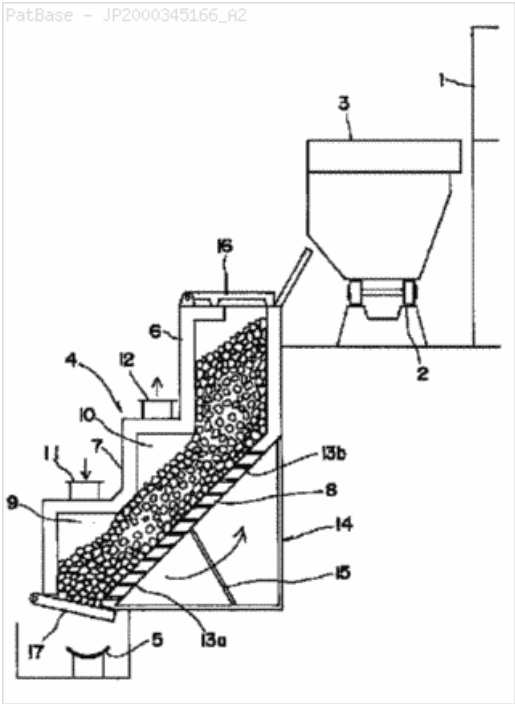
Title: DRY-TYPE COKE-QUENCHING BATTERY

Abstract: PROBLEM TO BE SOLVED: To provide a dry-type coke-quenching battery capable of directly loading red-hot coke into a chamber from an existing quenching car, and minimizing coke dust accompanied with cooling gas.SOLUTION: This quenching battery is equipped with a quenching car 3 which is freely transferable on a track 2 along a discharging door of a coke oven 1 and a coke-quenching oven 4 which is installed on an obliquely downward position of the track 2, wherein the coke-quenching oven 4 is composed of a vertical pre-chamber 6 and an inclined cooling chamber 7, the upper part of the cooling chamber 7 is equipped with a cooling gas-feeding pipe 11 which feeds cooling gas into the cooling chamber, and an inclined plane 8 of the bottom of the cooling chamber 7 is equipped with plural nozzles 13(a) and 13(b) which are connected to the cooling chamber 7 and release the cooling gas from the inside of the cooling chamber to the outside of the cooling chamber. The cooling chamber 7 is preferably so built that a lower cooling chamber 9 and an upper cooling chamber 10 are together installed, therein the lower cooling chamber 9 is connected to a gas-feeding pipe 11 and the upper cooling chamber 10 is connected to a gas-releasing pipe 12.

Classifications:

International (IPC 8-9): C10B39/02 (Advanced/Invention);
C10B39/00 (Core/Invention)

International (IPC 1-7): C10B39/02



Family:

Publication number	Publication date	Application number	Application date
JP2000345166 A2	20001212	JP20000037182	20000215

Priority:

JP19990084749 19990326 JP20000037182 20000215

Probable Assignee: NITTETSU PLANT DESIGNING CORP

Assignee(s): (std): NIPPON STEEL CORP ; NITTETSU PLANT DESIGNING CORP

Inventor(s): (std): ISHIDA YOSHINORI ; NAKAMURA DAISUKE ; YOSHIDA SHIGEO

Legal status (INPADOC)

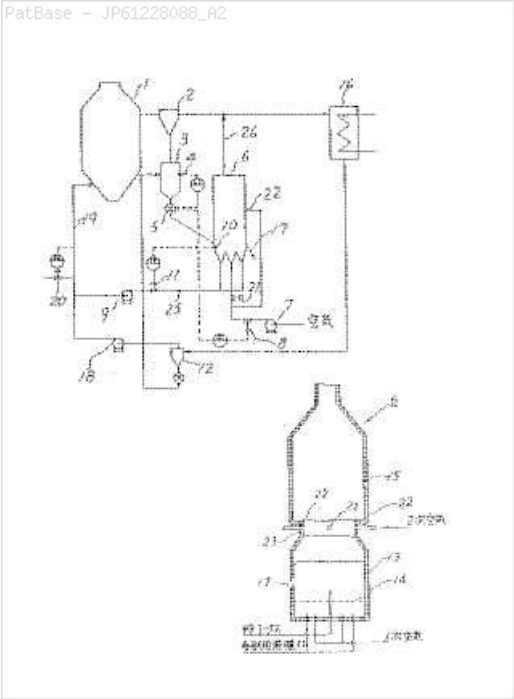
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Patent	Date recorded	Event group	Code	Event	Details
JP2000345166 A2	20001212	LSPB	+	published / reissued	
JP2000345166 A2	20060805	LSAS	A711	NOTIFICATION OF CHANGE IN APPLICANT	TEXT : JAPANESE INTERMEDIATE CODE: A712 EFFECTIVE DATE : 20060804
JP2000345166 A2	20060819	LSRE	A521	WRITTEN AMENDMENT	TEXT : JAPANESE INTERMEDIATE CODE: A821 EFFECTIVE DATE : 20060818
JP2000345166 A2	20070501	LSWD	-A300	WITHDRAWAL OF APPLICATION BECAUSE OF NO REQUEST FOR EXAMINATION	TEXT : JAPANESE INTERMEDIATE CODE: A300 EFFECTIVE DATE : 20070501

Title: COKE DRY QUENCHING EQUIPMENT

Abstract: PURPOSE: To increase the quantity of recovered sensible heat and incinerate coke dust with high efficiency, by recovering the sensible heat of red-hot coke in a **quenching oven**, further burning the collected coke dust in a fluidized bed combustion furnace and recovering the quantity of heat in a heat exchanger. CONSTITUTION: Red-hot coke is first charged from above a **quenching oven** 1, and a circulating gas is blown from below to quench and cool the coke and heat the circulating gas. Coarse coke dust is collected in a primary dust collector 2, and fine coke dust is collected in a secondary dust collector 12 to store temporarily the coke dust in a hopper 3. The stored coke dust is then charged through a mining valve 5 into a fluidized bed combustion furnace 6. Combustion air is supplied by a blower 7 and the air flow rate is controlled by a regulating valve 8. The coke dust fed into a fluidized bed 13 is fluidized and burned by the air and circulating gas. A freeboard 15 is partially constricted, and secondary air is jetted into the constricted part 23 and mixed with a gas containing the unburned coke dust to burn secondarily the coke dust and the heat is recovered in a boiler 16.

Classifications:
International (IPC 8-9): C10B39/02 C10B45/00 (Advanced/Invention)
International (IPC 1-7): C10B39/02 C10B45/00



Family:

Publication number	Publication date	Application number	Application date
JP2055061 C3	19960523	JP19850069101	19850403
JP61228088 A2	19861011	JP19850069101	19850403
JP7088510 B4	19950927	JP19850069101	19850403

Priority:

JP19850069101 19850403

Probable Assignee: NIPPON STEEL CORP

Assignee(s): (std): NIPPON STEEL CORP

Inventor(s): (std): YASUKOUCHI NAOTO ; NISHIHARA NOBUYOSHI ; EGASHIRA TATSUHIKO

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
JP2055061 C3	19960523	LSGT	+	granted / extensions (spc, cpc, pte)	
JP2055061 C3	20050403	PEXP		Calculated Patent Term Expiry	
JP61228088 A2	19861011	LSPB	+	published / reissued	
JP7088510 B4	19950927	LSPB	+	published / reissued	
JP7088510 B4	20040927	LSLE	-LAPS	CANCELLATION BECAUSE OF NO PAYMENT OF ANNUAL FEES	

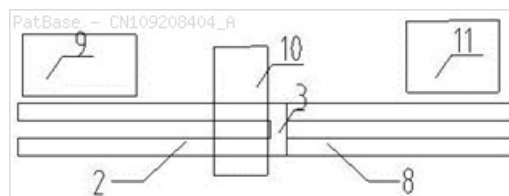
Title: A CONSTRUCTION METHOD FOR PREVENTING UNEVEN SETTLEMENT OF NEW AND OLD TRACK JOINTS OF A COKE QUENCHING VEHICLE

Abstract: A construction method for preventing uneven settlement of new and old track joints of a coke quenching vehicle is provided. A coke quenching tower water ditch crossing the old track is arranged below the end of the old track of the coke quenching car. At that end of the old track, the new track of the coke quench car is expanded to form a joint for new and old tracks of a coke quenching car. The method comprises the following steps of: a, arranging a reinforcing structure of the new and old track joint of the coke quenching car; b, burying a steel pipe in a water ditch of the coke quenching tower; c, arranging a concrete bearing cap; d, arranging a concrete top plate; and pouring the concrete top plate and the concrete bearing cap into an integral pouring structure. The construction method has the advantages of simple reinforcing structure of the old and new track joints of the coke quenching car, convenient construction, even settlement, no settlement difference, and no influence on the normal use of water quenching, the normal production of the **quenching oven** is guaranteed, and the cost of laying the new track is reduced.

Classifications:

International (IPC 8-9): E01B1/00 E01B23/10 E01B23/14 E01B29/00 (Advanced/Invention)

CPC: E01B1/002 E01B1/008 E01B23/10 E01B23/14 E01B29/005 E01B2204/07 E01B2204/09 E01B2204/10



Family:

Publication number	Publication date	Application number	Application date
CN109208404 A	20190115	CN201810994958	20180829

Priority:

CN201810994958 20180829

Probable Assignee: MCC5 GROUP SHANGHAI CORP LTD

Assignee(s): (std): MCC5 GROUP SHANGHAI CORP LTD ; MCC5 GROUP SHANGHAI LTD CORP

Assignee(s): FIVE MCC GROUP SHANGHAI CO LTD

Inventor(s): (std): CAO YUBIN ; QI ZHIBIN

Legal status (INPADOC)

[View legal status timeline](#)

Patent	Date recorded	Event group	Code	Event	Details
CN109208404 A	20190115	LSPB	+	published / reissued	
CN109208404 A	20190115	LSPB	PB01	PUBLICATION	

Title: HEAT RESISTANT ALUMINUM BASE ALLOY AND WROUGHT SEMIFINISHED PRODUCT FABRICATION METHOD

Abstract: This invention relates to metallurgy, more specifically, to wrought aluminum base alloys, and can be used for the fabrication of products with up to 350 degrees centigrade working temperature range. The technical result achieved in the first and second objects of this invention is providing a new heat resistant aluminum base alloy the wrought semifinished products of which (sheets, rods, wire, die forgings products or pipes) have high strength, heat resistance and electrical conductivity. Said technical result is achieved in the first object of this invention as follows. The aluminum base alloy contains copper, manganese, zirconium, silicon, iron and chromium in the following amounts, weight percent: Copper 0.6-1.5 Manganese 1.2-1.8 Zirconium 0.2-0.6 Silicon 0.05-0.25 Iron 0.1-0.4 Chromium 0.01-0.3 Aluminum balance The alloy contains zirconium in its structure in the form of Al₃Zr phase nanosized particles not greater than 20 nm in size, and manganese mainly forms secondary particles of the Al₂₀Cu₂Mn₃ phase not greater than 500 nm in size in a quantity of at least 2 vol. percent. Said technical result is achieved in the second object of this invention as follows. The method of fabricating wrought semifinished products from said aluminum base alloy comprises producing a melt of the alloy and fabricating a cast piece by solidifying said alloy, these operations being carried out at a temperature that is at least 50 degrees centigrade above the liquidus temperature. The intermediate wrought semifinished product is obtained by deforming said cast piece at a temperature of within 350 degrees centigrade in two stages with an intermediate 340-450 degrees centigrade anneal. Then the intermediate wrought semifinished product is annealed at 340-450 degrees centigrade, and wrought semifinished product is obtained by deforming the intermediate wrought semifinished product at room temperature. Finally the wrought semifinished product is annealed at 300-400 degrees centigrade

Classifications:**International (IPC 8-9):** C22C1/02 C22C21/00 C22C21/04

C22C21/12 C22C21/14 C22F1/02 C22F1/04

C22F1/057 (Advanced/Invention)

CPC: C22F1/04 C22C1/026 C22C21/00 C22C21/14 C22F1/057

C22C1/02 C22C21/12 C22F1/02

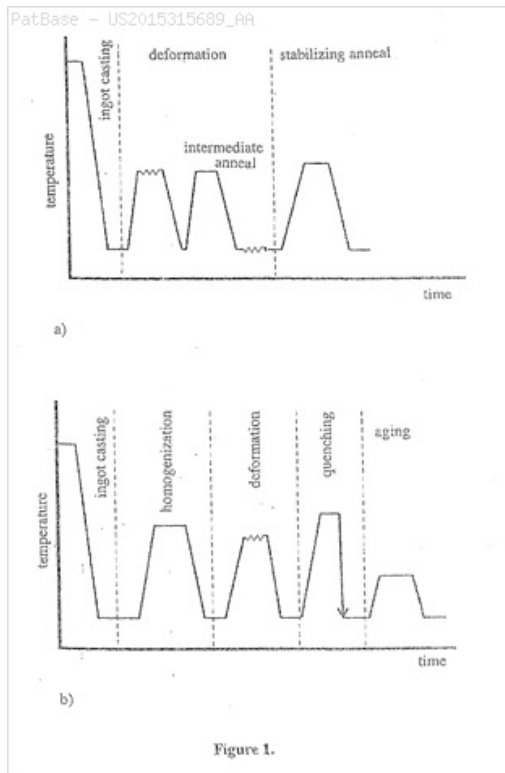
US: 148/552 420/537

Figure 1.

Family:

Publication number	Publication date	Application number	Application date
DE602012029088 D1	20170413	DE201260029088T	20121206
EP2929061 A1	20151014	EP20120889505	20121206
EP2929061 A4	20160803	EP20120889505	20121206
EP2929061 B1	20170222	EP20120889505	20121206
JP2016505713 T2	20160225	JP20150546420T	20121206
JP6126235 B2	20170510	JP20150546420T	20121206
KR101909152 B1	20181017	KR20157018096	20121206
KR20150087426 A	20150729	KR20157018096	20121206
RU2013102128 A	20141010	RU20130102128	20121206
RU2534170 C1	20141127	RU20130102128	20121206
US2015315689 AA	20151105	US20120650001	20121206
US10125410 BB	20181113	US20120650001	20121206
WO14088449 A1	20140612	WO2012RU01027	20121206

Priority:

EP20120889505 20121206 WO2012RU01027 20121206

Probable Assignee: NAT UNIV OF SCIENCE AND TECHNOLOGY MISIS

Assignee(s): (std): FED STATE AUTONOMOUS EDUCATIONAL INSTITUTION OF HIGHER PROFESSIONAL EDUCATION NAT UNIV OF SCIEN ; FED STATE EDUCATIONAL INSTITUTION OF HIGHER PROFESSIONAL EDUCATION NAT UNIV OF SCIEN ; FEDERAL NOE G AVTONOMNOE OBRAZOVATEL NOE UCHREZHDENIE VYSSHEGO PROFESSIONAL NOGO OBRAZOVANIJA NATSIO ; NAT UNIV OF SCIENCE AND TECHNOLOGY MISIS ; NATIONAL UNIV OF SCIENCE AND TECHNOLOGY MISIS ; NAT UNIV OF SCIENCE AND TECH MISIS

Assignee(s): FEDERAL NOE GOSUDARSTVENNOE AVTONOMNOE OBRAZOVATEL NOE UCHREZHDENIE VYSSHEGO PROFESSIONAL NOGO OBRAZOVANIJA NATSIONAL NYJ ISSLEDOVATEL SKIJ TEKHNOLOGICHESKIJ UNIVERSITET MISIS ; FEDERAL STATE AUTONOMOUS EDUCATIONAL INSTITUTION OF HIGHER PROFESSIONAL EDUCATION NATIONAL UNIV OF SCIENCE AND TECHNOLOGY MISIS ; FEDERAL STATE AUTONOMOUS EDUCATIONAL INSTITUTION OF HIGHER PROFESSIONAL EDUCATION NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY MISIS ; FEDERAL STATE EDUCATIONAL INSTITUTION OF HIGHER PROFESSIONAL EDUCATION NATIONAL UNIV OF SCIENCE AND TECHNOLOGY

MISIS

Inventor(s): (std): BELOV NIKOLAY ALEXANDROVICH ; ALABIN ALEXANDER NIKOLAEVICH ; ALABIN ALEKSANDR NIKOLAEVICH ; BELOV NIKOLAJ ALEKSANDROVICH

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Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC 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 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

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
EP2929061 A1	20151014	LSPB	+	published / reissued	
EP2929061 A1	20151014	LSSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 20150603
EP2929061 A4	20160803	LSSES	+RA4	SUPPLEMENTARY SEARCH REPORT DRAWN UP AND DESPATCHED (CORRECTED)	EFFECTIVE DATE : 20160701
EP2929061 A4	20161221	LSGT	+INTG	INTENTION TO GRANT ANNOUNCED	EFFECTIVE DATE : 20161125
EP2929061 B1	20170222	LSGT	+	granted / extensions (spc, cpc, pte)	
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EP2929061 B1	20170228	LSNP	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : CH REF LEGAL EVENT CODE : EP
EP2929061 B1	20170315	LSNP	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : AT REF LEGAL EVENT CODE : REF REF DOCUMENT NUMBER : 869339 COUNTRY OF REF DOCUMENT : AT KIND CODE OF REF DOCUMENT : T DESIGNATED STATE(S) : EFFECTIVE DATE : 20170315
EP2929061 B1	20170322	LSGT	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : IE REF LEGAL EVENT CODE : FG4D
EP2929061 B1	20170413	LSPB	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : DE REF LEGAL EVENT CODE : R096 REF DOCUMENT NUMBER : 602012029088 COUNTRY OF REF DOCUMENT : DE
EP2929061 B1	20170626	LSRV	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : LT REF LEGAL EVENT CODE : MG4D
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LAPSED DATE : 20170222					
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EP2929061 B1	20180228	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : SI NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20170222
EP2929061 B1	20180228	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : GB PAYMENT DATE : 20171221 YEAR OF FEE PAYMENT : 6
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EP2929061 B1	20180928	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : MT NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20171206
EP2929061 B1	20180928	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : LU NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20171206
EP2929061 B1	20181031	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : IE NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20171206
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				OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	PAYMENT DATE : 20181218 YEAR OF FEE PAYMENT : 7
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EP2929061 B1	20321206	PEXP		Calculated Patent Term Expiry	
JP2016505713 T2	20160225	LSPB	+	published / reissued	
JP2016505713 T2	20161004	LSSES	-A131	NOTIFICATION OF REASONS FOR REFUSAL	TEXT : JAPANESE INTERMEDIATE CODE: A131 EFFECTIVE DATE : 20161004
JP2016505713 T2	20161202	LSRE	A524	WRITTEN SUBMISSION OF COPY OF AMENDMENT UNDER SECTION 19 (PCT)	TEXT : JAPANESE INTERMEDIATE CODE: A524 EFFECTIVE DATE : 20161202
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JP2016505713 T2	20170314	LSGT	+A01	WRITTEN DECISION TO GRANT A PATENT OR TO GRANT A REGISTRATION (UTILITY MODEL)	TEXT : JAPANESE INTERMEDIATE CODE: A01 EFFECTIVE DATE : 20170314
JP2016505713 T2	20170413	LSFE	+A61	FIRST PAYMENT OF ANNUAL FEES (DURING GRANT PROCEDURE)	TEXT : JAPANESE INTERMEDIATE CODE: A61 EFFECTIVE DATE : 20170406
JP2016505713 T2	20170414	LSGT	+R150	CERTIFICATE OF PATENT OR REGISTRATION OF UTILITY MODEL	TEXT : JAPANESE INTERMEDIATE CODE: R150 REF DOCUMENT NUMBER : 6126235 COUNTRY OF REF DOCUMENT : JP
JP6126235 B2	20170510	LSGT	+	granted / extensions (spc, cpc, pte)	
JP6126235 B2	20170316	LSGT	+A01	特許査定書 (Decision of patent grant)	
JP6126235 B2	20170411	LSFE	R100	特許料納付書 (Patent fee payment form)	
JP6126235 B2	20170414	LSGT	+R150	特許証 (Patent certificate)	
JP6126235 B2	20321206	PEXP		Calculated Patent Term Expiry	
KR101909152 B1	20181017	LSGT	+	granted / extensions (spc, cpc, pte)	
KR101909152 B1	20321206	PEXP		Calculated Patent	

Term Expiry					
KR20150087426 A	20150729	LSPB	+	published / reissued	
KR20150087426 A	20180111	LSES	-E902	NOTIFICATION OF REASON FOR REFUSAL	
KR20150087426 A	20180919	LSGT	+E701	DECISION TO GRANT OR REGISTRATION OF PATENT RIGHT	
KR20150087426 A	20181011	LSGT	+GRNT	WRITTEN DECISION TO GRANT	
RU2013102128 A	20141010	LSPB	+	published / reissued	
RU2534170 C1	20141127	LSGT	+	granted / extensions (spc, cpc, pte)	
RU2534170 C1	20321206	PEXP		Calculated Patent Term Expiry	
US10125410 BB	20181113	LSGT	+	granted / extensions (spc, cpc, pte)	
US10125410 BB	20150605	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY "MIS OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:BELOV, NIKOLAY ALEXANDROVICH; ALABIN, ALEXANDER NIKOLAEVICH; REEL/FRAME:035793/0915 EFFECTIVE DATE : 20150602
US10125410 BB	20181024	LSGT	PAT1	Patented Case	
US10125410 BB	20331022	PEXP		Calculated Patent Term Expiry (PTA 320 days)	
US2015315689 AA	20151105	LSPB	+	published / reissued	
US2015315689 AA	20170310	LSES	NFA1	Non Final Action Mailed	
US2015315689 AA	20170524	LSES	NFA1	Non Final Action Mailed	
US2015315689 AA	20180627	LSES	+ALW2	Allowed -- Notice of Allowance Not Yet Mailed	
US2015315689 AA	20180627	LSES	+NAM1	Notice of Allowance Mailed -- Application Received in Office of Publications	
US2015315689 AA	20181024	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
WO14088449 A1	20140612	LSPB	+	published / reissued	
WO14088449 A1	20130328	LSNP	ENP	ENTRY INTO THE NATIONAL PHASE IN:	REF DOCUMENT NUMBER : 2013102128 COUNTRY OF REF DOCUMENT : RU KIND CODE OF REF DOCUMENT : A DESIGNATED STATE(S) :
WO14088449 A1	20150603	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 2012889505 COUNTRY OF REF DOCUMENT : EP
WO14088449 A1	20150605	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 14650001 COUNTRY OF REF DOCUMENT : US
WO14088449 A1	20150608	LSNP	ENP	ENTRY INTO THE NATIONAL PHASE IN:	REF DOCUMENT NUMBER : 2015546420 COUNTRY OF REF DOCUMENT : JP KIND CODE OF REF DOCUMENT : A DESIGNATED STATE(S) :
WO14088449 A1	20150608	LSNE	NENP	NON-ENTRY INTO THE NATIONAL	REF COUNTRY CODE : DE

WO14088449 A1

20150706

LSNP

ENP

PHASE IN:

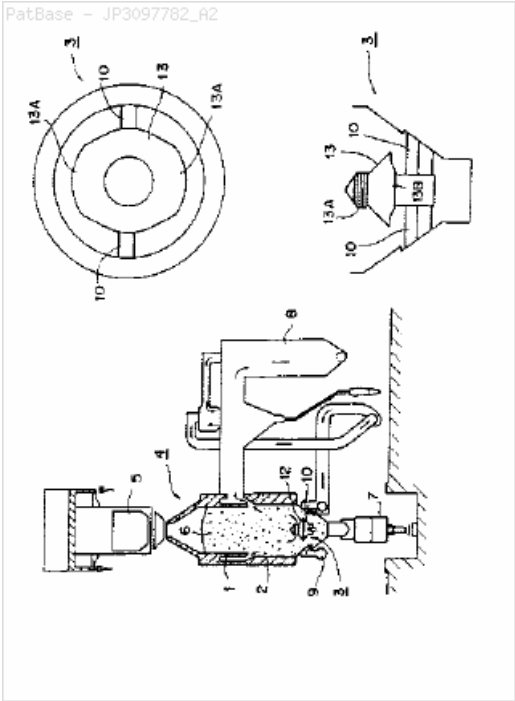
ENTRY INTO THE
NATIONAL PHASE
IN:

REF DOCUMENT NUMBER :
20157018096
COUNTRY OF REF DOCUMENT :
KR
KIND CODE OF REF DOCUMENT :
A
DESIGNATED STATE(S) :

Title: GAS BLOWER IN COKE DRY QUENCHING EQUIPMENT

Abstract: PURPOSE: To provide a uniform dropping rate of red-hot coke by forming the planer shape of a blast head in a gas blower into an elliptical shape and crossing the major axes of the ellipse with beams supporting the blast head at right angles. CONSTITUTION: The planar shape of an umbrella-like blast head 13 forming a gas blowing outlet (13A) for uniformly blowing an inert gas from the lower part of a **quenching oven** 4 charged with red-hot coke 6 into the **quenching oven** 4 in the top center thereof is formed into an elliptical shape and the major axes of the aforementioned ellipse are crossed with beams 10 supporting the blast head 13 at right angles. Thereby, protruding parts (13B) are formed on the edges of the blast head 13 so as to be continuous to the edges on the side of the beams 10. As a result, the lowering rate of the red-hot coke is made uniform.

Classifications:
International (IPC 8-9): C 10B39/02 (Advanced/Invention);
C 10B39/00 (Core/Invention)
International (IPC 1-7): C 10B39/02



Family:

Publication number	Publication date	Application number	Application date
JP3097782 A2	19910423	JP19890233098	19890909

Priority:

JP19890233098 19890909

Probable Assignee: NIPPON KOKAN KK
Assignee(s): (std): NIPPON KOKAN KK
Assignee(s): NKK CORP
Inventor(s): (std): KIMURA TAKAAKI ; MATSUMOTO KAZUTOSHI

Legal status (INPADOC)

[View legal status timeline](#)

Patent	Date recorded	Event group	Code	Event	Details
JP3097782 A2	19910423	LSPB	+	published / reissued	

Title: Carbon steel louver board and its manufacture method - long life time, stable, and environmental product

Abstract: This invention is of a manufacture method of carbon steel louver board and the products. Processes included: to split and trim carbon steel sheet according to expected width; quenching at high heat in **quenching oven** and then cool shaping through intense chilling by mould; temper and shape fix treatment; facial paint coating.

Classifications:

International (IPC 8-9): B23P15/00 C21D9/46

E06B9/386 (Advanced/Invention);

C21D1/18 C21D1/673 (Advanced/Non-invention);

B23P15/00 C21D9/46 E06B9/38 (Core/Invention);

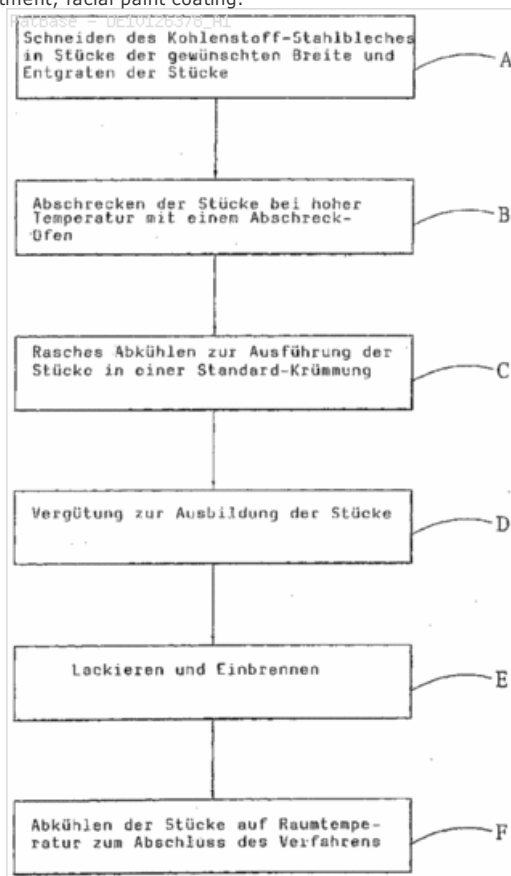
C21D1/18 C21D1/62 (Core/Non-invention)

International (IPC 1-7): B23P13/00

CPC: B23P15/00 C21D1/18 C21D1/673 C21D9/46 C21D2261/00

E06B9/386

European: B23P15/00 C21D9/46 E06B9/386 M21D1/18 M21D1/673 M21D261/00



Family:

Publication number	Publication date	Application number	Application date
DE10126378 A1	20021212	DE20011026378	20010530

Priority:

DE20011026378 20010530

Probable Assignee:

WANG CHIN HAN

Assignee(s): (std):

WANG CHIN HAN

Inventor(s): (std):

WANG CHIN HAN

Legal status (INPADOC)

[View legal status timeline](#)

Patent	Date recorded	Event group	Code	Event	Details
DE10126378 A1	20021212	LSPB	+	published / reissued	
DE10126378 A1	20080327	LSLE	-8139	DISPOSAL/NON-PAYMENT OF THE ANNUAL FEE	

Title: METHOD FOR MAKING CARBON-STEEL BLIND SLATS AND PRODUCTS THEREOF

Abstract: A method is provided for making carbon-steel blind slats and products thereof by slitting the carbon-steel sheet into pieces of desired width, trimming the edges, quenching, speedy cooling, tempering, and painting and baking. The blind product made by this method is merited in resilience, lifetime, easy maintenance, heat-resistance, fad-resistance, and is retrievable and reusable to conform to the environment protection conditions.

Classifications:

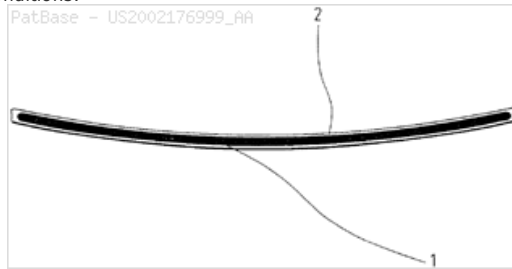
International (IPC 8-9): E06B7/08 E06B9/386 (Advanced/Invention); E06B9/38 (Core/Invention)

International (IPC 1-7): B05D3/02 B32B15/04 C21D1/00 C21D9/00 E06B7/08 E06B9/26

CPC: Y10T428/31678 E06B9/386

European: E06B9/386

US: 148/537 148/603 148/604 160/130 160/132 427/388.1 428/457



Family:

Publication number	Publication date	Application number	Application date
CN1120930 C	20030910	CN20001009699	20000622
CN1331375 A	20020116	CN20001009699	20000622
TW449639 B	20010811	TW20000111642	20000614
US2002176999 AA	20021128	US20010866263	20010525
US6645322 BB	20031111	US20010866263	20010525

Priority:

TW20000111642 20000614 CN20001009699 20000622 US20010866263 20010525

Probable Assignee: HUANGJIE METAL IND CO LTD

Assignee(s): (std): HUANG CHIEH METAL IND CO ; HUANG CHIEH METAL INDUSTRY CO ; HUANGJIE METAL IND CO LTD ; WANG CHIN HAN ; HUANGJIE METAL INDUSTRY CO LTD

Assignee(s): HUANG CHIEH METAL INDUSTRY CO LTD ; HUANGJIE METAL IND CO ; HUANG CHIEH METAL IND CO LTD

Inventor(s): (std): WANG CHIN HAN ; WANG CHING HAN ; WANG QINGHAN

Inventor(s): QINGHAN WANG

Legal status (INPADOC)

[View legal status timeline](#)

Patent	Date recorded	Event group	Code	Event	Details
CN1120930 C	20030910	LSGT	+	granted / extensions (spc, cpc, pte)	
CN1120930 C	20030910	LSGT	+C14	GRANT OF PATENT OR UTILITY MODEL	
CN1120930 C	20080827	LSLE	-C19	LAPSE OF PATENT RIGHT DUE TO NON-PAYMENT OF THE ANNUAL FEE	
CN1120930 C	20200622	PEXP		Calculated Patent Term Expiry	
CN1331375 A	20020116	LSPB	+	published / reissued	
CN1331375 A	20020116	LSPB	+C06	PUBLICATION	
TW449639 B	20010811	LSGT	+	granted / extensions (spc, cpc, pte)	
TW449639 B	20011206	LSGT	+GD4A	ISSUE OF PATENT CERTIFICATE FOR GRANTED INVENTION PATENT	
TW449639 B	20080611	LSLE	-MM4A	ANNULMENT OR LAPSE OF PATENT DUE TO NON-PAYMENT OF FEES	
TW449639 B	20200614	PEXP		Calculated Patent Term Expiry	
US2002176999 AA	20021128	LSPB	+	published / reissued	
US6645322 BB	20031111	LSGT	+	granted / extensions (spc, cpc, pte)	
US6645322 BB	20071111	LSLE	-LAPS	LAPSE FOR FAILURE TO PAY MAINTENANCE FEES	
US6645322 BB	20071210	LSLE	-PEX1	Patent Expired Due to NonPayment of Maintenance Fees Under 37 CFR 1.362	
US6645322 BB	20071210	LSLE	-STCH	INFORMATION ON STATUS: PATENT DISCONTINUATION	TEXT : PATENT EXPIRED DUE TO NONPAYMENT OF MAINTENANCE FEES UNDER

37 CFR 1.362					
US6645322 BB	20080101	LSLE	-FP	EXPIRED DUE TO FAILURE TO PAY MAINTENANCE FEE	EFFECTIVE DATE : 20071111
US6645322 BB	20220104	PEXP		Calculated Patent Term Expiry (PTA 224 days)	

Title: METHOD OF MAKING THE LUMINOUS TAPELINE

Abstract: The present invention discloses a method of making the luminous tapeline comprising: forming a primer paint layer on a steel material, forming a scale ink layer on the primer paint layer, forming a protection layer on the scale ink layer. The tapeline can be made luminous through one of the following methods, or any combination thereof: transferring and painting a luminous ink on the primer paint layer, spaying a luminous powder on the primer paint layer, and spaying a luminous powder on protection layer.

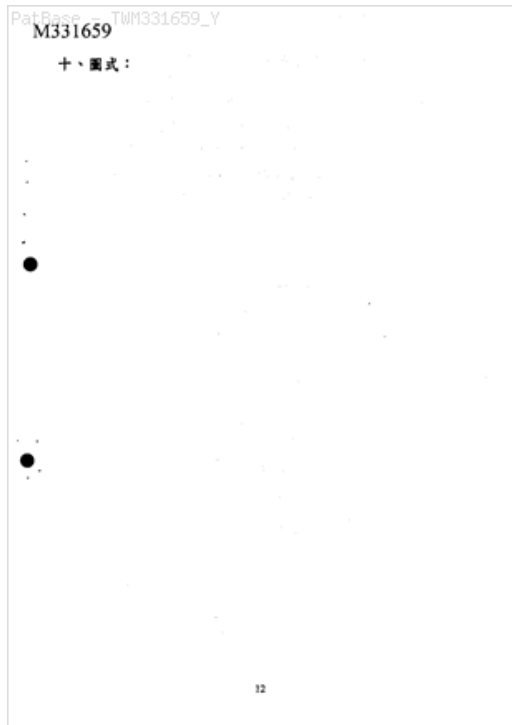
Classifications:

International (IPC 8-9): B41M3/00 C23C14/28 G01B1/00 G01B3/02 G01B3/04 G01B3/10 (Advanced/Invention); C23C14/28 (Core/Invention)

CPC: B05D3/067 B05D5/061 B05D7/542 B05D7/57 C23C8/20 C23C8/22 G01B3/1082

European: B05D5/06E C23C8/20 C23C8/22 G01B3/10T L05D3/06C5E L05D7/542 L05D7/57

US: 427/595 427/595P



Family:

Publication number	Publication date	Application number	Application date
CN100565088 C	20091202	CN200710186098	20071115
CN101245979 A	20080820	CN200710186098	20071115
CN201072322 Y	20080611	CN200720154016U	20070522
TW200835902 A	20080901	TW20070139993	20071025
TWI340233 B	20110411	TW20070139993	20071025
TWM331659 Y	20080501	TW20070205825U	20070412
US2008199633 AA	20080821	US20080025098	20080204

Priority:

US20070901656P 20070216 US20080025098 20080204

Probable Assignee: HUIAI MAO CORP

Assignee(s): (std): HUIAI MAO CORP ; HUIAI MAW ENTPR CO LTD ; HUAIMAO CO LTD

Assignee(s): HUAIMAO CO ; HUIAI MAW ENTERPRISE CO ; HUIAI MAW ENTERPRISE CO LTD

Inventor(s): (std): CHENGHONG WENG ; RONGHUA WENG ; SONGYI WENG ; WANG YU CHIH ; WENG CHENG HUNG ; WENG JUNG HUA ; WENG SUNG YI ; YUZH I WANG

Inventor(s): WENG RONGHUA ; WENG SONGYI ; WENG CHENGHONG ; WANG YUZH I

Agent(s): WPAT PC

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
CN100565088 C	20091202	LSGT	+	granted / extensions (spc, cpc, pte)	
CN100565088 C	20091202	LSGT	+C14	GRANT OF PATENT OR UTILITY MODEL	
CN100565088 C	20140108	LSLE	-C17	CESSATION OF PATENT RIGHT	
CN100565088 C	20271115	PEXP		Calculated Patent Term Expiry	
CN101245979 A	20080820	LSPB	+	published / reissued	
CN101245979 A	20080820	LSPB	+C06	PUBLICATION	

CN201072322 Y	20080611	LSGT	+	granted / extensions (spc, cpc, pte)	
CN201072322 Y	20080611	LSGT	+C14	GRANT OF PATENT OR UTILITY MODEL	
CN201072322 Y	20120801	LSLE	-C17	CESSATION OF PATENT RIGHT	
CN201072322 Y	20170522	PEXP		Calculated Patent Term Expiry	
TW200835902 A	20080901	LSPB	+	published / reissued	
TWI340233 B	20110411	LSGT	+	granted / extensions (spc, cpc, pte)	
TWI340233 B	20150111	LSLE	-MM4A	ANNULMENT OR LAPSE OF PATENT DUE TO NON-PAYMENT OF FEES	
TWI340233 B	20271025	PEXP		Calculated Patent Term Expiry	
TWM331659 Y	20080501	LSGT	+	granted / extensions (spc, cpc, pte)	
TWM331659 Y	20120201	LSLE	-MM4K	ANNULMENT OR LAPSE OF A UTILITY MODEL DUE TO NON-PAYMENT OF FEES	
US2008199633 AA	20080821	LSPB	+	published / reissued	
US2008199633 AA	20080204	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : HUAI MAO CORPORATION, TAIWAN OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:WENG, JUNG-HUA; WANG, YU-CHIH; WENG, SUNG-YI; AND OTHERS; REEL/FRAME:020458/0493 EFFECTIVE DATE : 20070216
US2008199633 AA	20110830	LSWD	-ABD3	Abandoned -- Failure to Respond to an Office Action	

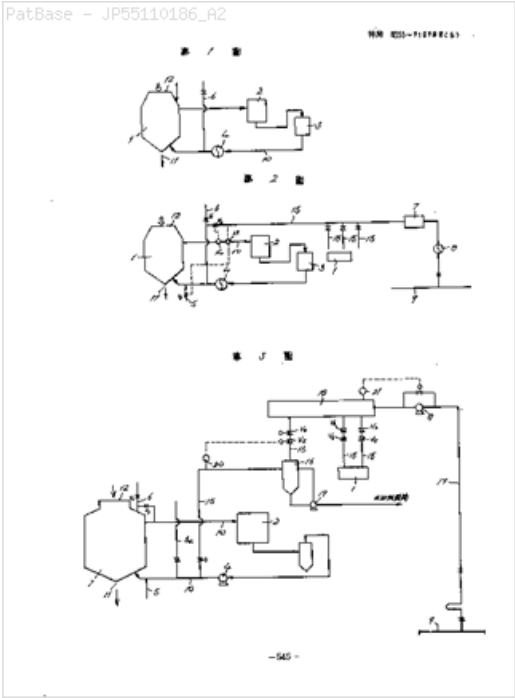
Title: DRY QUENCHING OF COKE

Abstract: PURPOSE: To carry out the efficient and stable quenching of red-hot coke, by detecting the composition or volume of gas in a gas circulation pipings, and, when the content of combustible gas is increased, extracting the gas as a fuel gas and diluting the coke oven gas with an inert gas to adjust the composition to the desired value. CONSTITUTION: Variation of circulating gas for coke-quenching caused by mixing with combustible gas generated from red-hot coke, is detected with a gas-composition detecting means 13. When the gas composition exceeds the preset limit value, the valve V₃ is opened to dilute the gas with N₂ gas and at the same time, the valve V₂ is opened to extract the circulating gas to compensate the increment of the circulating gas by the generated gas and the introduced N₂ gas. The extracted gas is introduced into a fuel gas line 9 through a branch 15, a dust-collector 7 and a blower 8. The circulating gas heated in a **quenching oven** 1 is fed to a heat-exchanger 2 to recover the heat energy, and circulated through a circulating gas line 10 having a dust-collector 3 and a blower 4.

Classifications:

International (IPC 8-9): C 10B39/02 (Advanced/Invention)

International (IPC 1-7): C 10B39/02



Family:

Publication number	Publication date	Application number	Application date
JP55110186 A2	19800825	JP19790017171	19790219
JP58017789 B4	19830409	JP19790017171	19790219

Priority:

JP19790017171 19790219

Probable Assignee: NIPPON KOKAN KK

Assignee(s): (std): NIPPON KOKAN KK

Inventor(s): (std): OKADA YUTAKA ; NAKANO KATSUTOSHI ; OOKUBO YASUO ; SADA TETSUO ; KUBO NORIKI

Legal status (INPADOC)

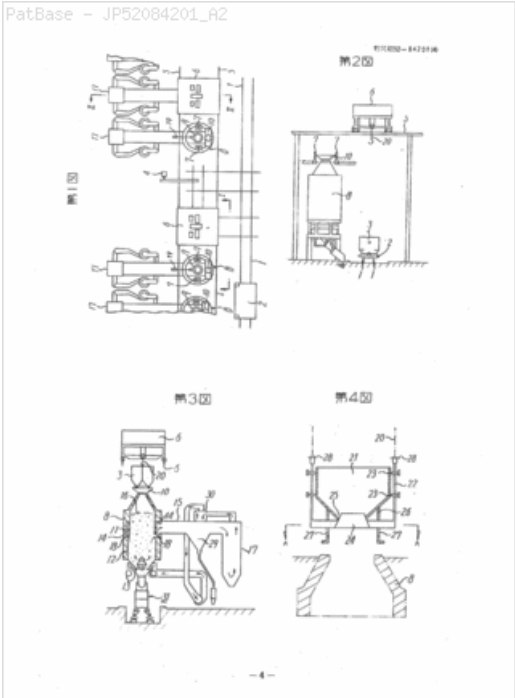
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Patent	Date recorded	Event group	Code	Event	Details
JP55110186 A2	19800825	LSPB	+	published / reissued	
JP58017789 B4	19830409	LSPB	+	published / reissued	

Title: COKE BUCKET IN DRY **QUENCHING OVEN** FOR COKE

Abstract: PURPOSE: To charge coke with ease into a dry **quenching oven** from a coke bucket with the prevention of dusting, by setting a conical gate in such a way that it may ascend and descend at the coke-dropping hole equipped with a fixed skirt.

Classifications:
International (IPC 8-9): C10B39/02 (Advanced/Invention);
C10B39/00 (Core/Invention)
International (IPC 1-7): C10B39/02



Family:

Publication number	Publication date	Application number	Application date
JP52084201 A2	19770713	JP19760000063	19760106

Priority:

JP19760000063 19760106

Probable Assignee: NIPPON KOKAN KK

Assignee(s): (std): NIPPON KOKAN KK

Inventor(s): (std): UEDA HISASHI ; HIRONAKA SHIYUNICHI ; OOTANI DAN ; KOIZUMI KUNIHEI

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
JP52084201 A2	19770713	LSPB	+	published / reissued	

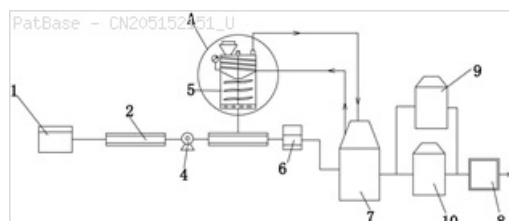
Title: SYSTEM FOR UTILIZE WASTE PLASTICS TO CARRY OUT BLENDING COKING

Abstract: The utility model discloses a system for utilize waste plastics to carry out blending coking, include the blending belt that corresponds the intercommunication with the coal yard, be equipped with rubbing crusher on the blending belt, the blending belt corresponds the intercommunication with the plastics melting furnace, be equipped with feed inlet, discharging screen hole, exhaust emission mouth on the plastics melting furnace the inside heating coil that is equipped with of plastics melting furnace, the blending belt corresponds the intercommunication with the make -up machine, the make -up machine corresponds the intercommunication with the coke oven, the blending belt corresponds the intercommunication with the coke oven, the exhaust emission mouth corresponds with the coke oven through the pipeline and communicates with each other, the coke oven gas of coke oven exports to correspond with heating coil and communicates with each other, the coke oven corresponds the intercommunication with the quenching stove, the quenching stove should communicate with each other with the burnt pair of stations of drying in the air. The utility model relates to a plastics in system for utilize waste plastics to carry out blending coking's the plastics melting furnace burn in the waste gas that the melting in -process produced gets into the coke oven, reduce harmful gas's emission.

Classifications:

International (IPC 8-9): C10B57/04 (Advanced/Invention)

CPC: C10B57/04



Family:

Publication number	Publication date	Application number	Application date
CN105419833 A	20160323	CN201510875168	20151202
CN205152151 U	20160413	CN201520989025U	20151202

Priority:

CN201510875168 20151202 CN201520989025U 20151202

Probable Assignee: SCI AND TECH INCUBATION CENTER OF HAS

Assignee(s): (std): SCI AND TECH INCUBATION CENTER OF HAS

Assignee(s): SCIAND TECH INCUBATION CENTER OF HAS ; HEILONGJIANG ACADEMY OF SCIENCE AND TECHNOLOGY INCUBATION CENTER

Inventor(s): (std): XIE LIPING ; ZHOU YANG ; XU XIAOQIU ; LI FUYI ; CHEN SONG ; ZHOU GUOJIANG ; ZHANG FAN

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
CN105419833 A	20160323	LSPB	+	published / reissued	
CN105419833 A	20160323	LSPB	+C06	PUBLICATION	
CN105419833 A	20160323	LSPB	PB01	公开 (The publication of application)	TEXT : 公开 (DISCLOSURE)
CN105419833 A	20190118	LSRV	-RJ01	REJECTION OF INVENTION PATENT APPLICATION AFTER PUBLICATION	
CN205152151 U	20160413	LSGT	+	granted / extensions (spc, cpc, pte)	
CN205152151 U	20160413	LSGT	+C14	GRANT OF PATENT OR UTILITY MODEL	
CN205152151 U	20160413	LSGT	+GR01	授权 (The grant of patent right)	TEXT : 授权 (AUTHORIZATION)
CN205152151 U	20191122	LSLE	-CF01	未缴年费专利权终止 (Termination of patent right due to unpaid annual fee)	TEXT : 专利权的终止 (TERMINATION OF PATENT RIGHT) EFFECTIVE DATE : 20181202
CN205152151 U	20251202	PEXP		Calculated Patent Term Expiry	

Title: PROCEDE DE TREMPER DIFFERENTIELLE DE PLAQUES MINCES ET FOURS POUR L'APPLICATION DE CE PROCEDE
PROCESS FOR THIN PLATES AND DIFFERENTIAL **QUENCHING OVEN** FOR IMPLEMENTING THE METHOD (Machine translation)

Classifications:

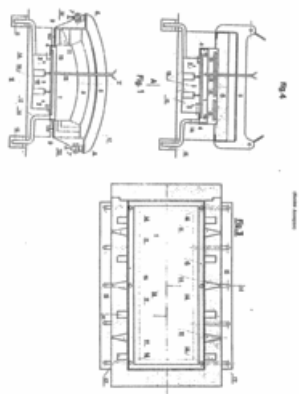
International (IPC 8-9): C21D9/46 (Advanced/Invention);
C21D9/46 (Core/Invention)

International (IPC 1-7): C21D9/42

CPC: C21D9/46

European: C21D9/46

PatBase - FR830704_A

**Family:**

Publication number	Publication date	Application number	Application date
FR830704 A	19380808		19370325

Priority:

19370325

Probable Assignee:

STEIN ET ROUBAIX

Assignee(s): (std):

STEIN ET ROUBAIX

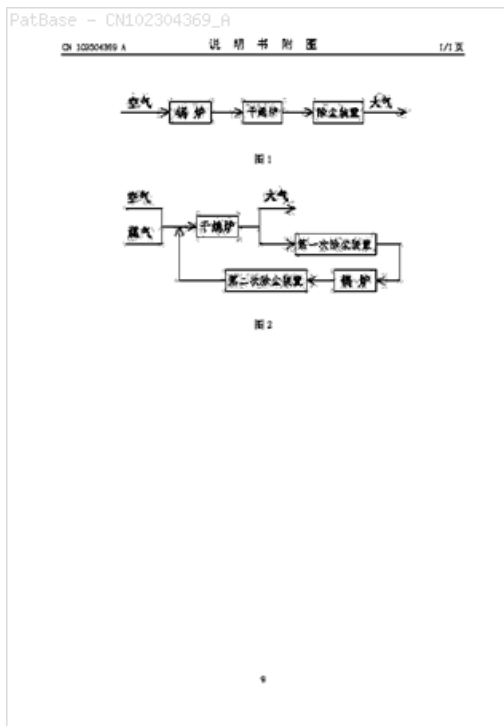
Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
FR830704 A	19380808	LSGT	+	granted / extensions (spc, cpc, pte)	
FR830704 A	19570325	PEXP		Calculated Patent Term Expiry	

Title: OVEN-DRYING WORKING PROCESS FOR COKE DRY QUENCHING SYSTEM

Abstract: The invention discloses an oven-drying working process for a coke dry quenching system. The process comprises the following steps: step 1, drying a dry **quenching oven** with warm wind; step 2, drying the dry **quenching oven** with coal gas after the step 1 is finished; and step 3, after the step 2 is finished, putting red-hot coke in the dry **quenching oven** so that a refractory material is heated to 950-1050 degrees centigrade at the speed of less than or equal to 30 DEG C/h, thereby completing the oven-drying operation. According to the oven-drying working process for the coke dry quenching system, in the warmwind drying process, the temperature of a boiler collecting box is in conformity with the temperature of a steam pocket, thus the gap generated due to the tremble of the boiler when an airlift pump works is avoided so that boiler steam can not be intermixed with dry air, thereby correctly and timely judging the drying condition of the dry **quenching oven**; and in the coal gas drying stage, the refractory material is heated according to a heating crystal form conversion curve through reasonably controlling the coal gas-air proportion and heating speed, thereby avoiding the conditions that mixed coal gas extinguishes, the refractory material is broken or damaged, and the like. Thus, by the process disclosed by the invention, the service life of the dry **quenching oven** refractory material can be prolonged, the safe work of a boiler system can be ensured and the service life of the boiler system is prolonged, and oven-drying working time can be shortened at the same time.

Classifications:**International (IPC 8-9):** C10B39/02 (Advanced/Invention)**Family:**

Publication number	Publication date	Application number	Application date
CN102304369 A	20120104	CN201110231265	20110812
CN102304369 B	20130327	CN201110231265	20110812

Priority:

CN201110231265 20110812

Probable Assignee: CHONGQING IRON STEEL GROUP CO**Assignee(s):** (std): CHONGQING IRON AND STEEL GROUP CO LTD ; CHONGQING IRON STEEL GROUP CO**Assignee(s):** CHONGQING IRON AND STEEL GROUP CO**Inventor(s):** (std): JIE LIU ; LIU JIE**Legal status (INPADOC)**

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Patent	Date recorded	Event group	Code	Event	Details
CN102304369 A	20120104	LSPB	+	published / reissued	
CN102304369 A	20120104	LSPB	+C06	PUBLICATION	
CN102304369 A	20120104	LSPB	PB01	公开 (The publication of application)	TEXT : 公开 (DISCLOSURE)
CN102304369 B	20130327	LSGT	+	granted / extensions (spc, cpc, pte)	
CN102304369 B	20130327	LSGT	+C14	GRANT OF PATENT OR UTILITY MODEL	
CN102304369 B	20130327	LSGT	+GR01	授权 (The	TEXT : 授权 (AUTHORIZATION)

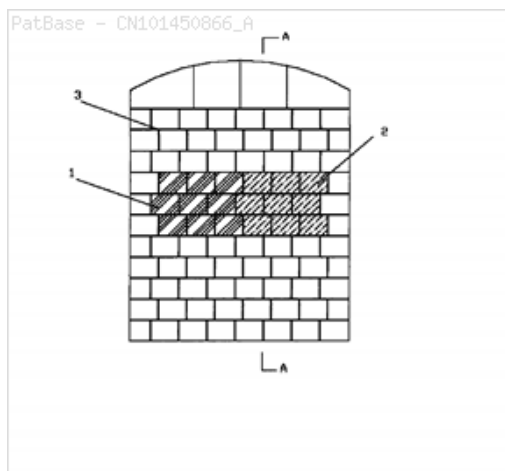
					grant of patent right)
CN102304369 B	20190301	LSAS	TR01	专利权的转移 (Transfer of patent right)	TEXT : 专利申请权、专利权的转移 (TRANSFER OF PATENT APPLICATION OR PATENT RIGHT) PATENTEE AFTER CHANGE : 重庆钢铁股份有 限公司 (CHONGQING IRON AND STEEL CO LTD) PATENTEE BEFORE CHANGE : 重庆钢铁(集 团)有限责任公司 (CHONGQING IRON AND STEEL (GROUP) CO., LTD.) EFFECTIVE DATE : 20190211
CN102304369 B	20190301	LSAS	TR01	TRANSFER OF PATENT RIGHT	
CN102304369 B	20310812	PEXP		Calculated Patent Term Expiry	

Title: Abrasion resistant steel fiber reinforcement pouring precast block for coke dry **quenching oven**

Abstract: The invention relates to a dry quenching furnace, in particular to an abrasion-resistant reinforced precast block for the dry quenching furnace. The abrasion-resistant steel fiber reinforced precast block is formed by roasting the raw materials comprising the following compositions: 4 to 10 percent of cement, 3 to 10 percent of silica fume, 3 to 10 percent of alpha-Al₂O₃, 5 to 10 percent of SiC, and the balance being refractory aggregates. The precast block has good strength and low wear rate and reduces the maintenance work and the cost.

Classifications:

International (IPC 8-9): C04B35/66 (Advanced/Invention);
C04B35/66 (Core/Invention)



Family:

Publication number	Publication date	Application number	Application date
CN101450866 A	20090610	CN200710171769	20071204

Priority:

CN200710171769 20071204

Probable Assignee: BAOSTEEL GROUP CORP

Assignee(s): (std): BAOSTEEL GROUP CORP ; SHANGHAI BAOSTEEL IND INS CORP ; SHANGHAI BAOSTEEL IND INSPECTION CORP

Assignee(s): SHANGHAI BAOSTEEL INDUSTRY INSPECTION CORP

Inventor(s): (std): DEHUA PAN ; FEI SONG ; HONGSHEN CAO ; JI BAO ; LI JUN ; BAO JIN ; ZHIDONG XU

Inventor(s): BAO JI ; CAO HONGSHEN ; PAN DEHUA ; SONG FEI ; XU ZHIDONG ; JIN BAO

Legal status (INPADOC)

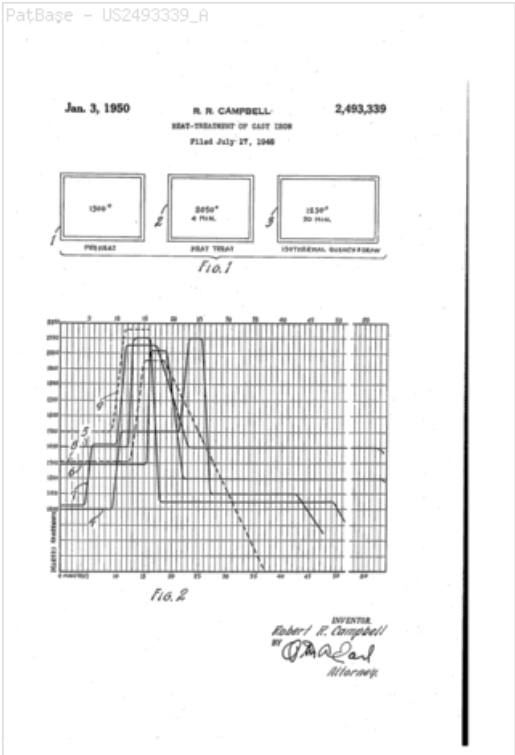
[View legal status timeline](#)

Patent	Date recorded	Event group	Code	Event	Details
CN101450866 A	20090610	LSPB	+	published / reissued	
CN101450866 A	20090610	LSPB	+C06	PUBLICATION	
CN101450866 A	20130320	LSRV	-C12	REJECTION OF A PATENT APPLICATION AFTER ITS PUBLICATION	

Title: HEAT-TREATMENT OF CAST IRON

Abstract: 1. The method of heat treating raw ferrous metal castings containing primary oarbides or free cementite which comprises rapidly raising the casting having a temperature of approximately 1,000" F. to a temperature between 1,900 degrees F. and 2,100 degrees F., holding it at that temperature between two and twenty minutes, rapidly cooling the metal to a temperature between 1,000 degrees F. to 1,400 degrees F_, and holding it at that temperature between ten and sixty minutes.

Classifications:
CPC: C21D5/00
European: 18C8A
US: 148/612



Family:

Publication number	Publication date	Application number	Application date
US2493339 A	19500103	US19460684162	19460717

Priority:
US19460684162 19460717

Probable Assignee: CAMPBELL ROBERT R
Assignee(s): (std): CAMPBELL ROBERT R
Inventor(s): (std): CAMPBELL ROBERT R

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
US2493339 A	19500103	LSGT	+	granted / extensions (spc, cpc, pte)	
US2493339 A	19670103	PEXP		Calculated Patent Term Expiry	

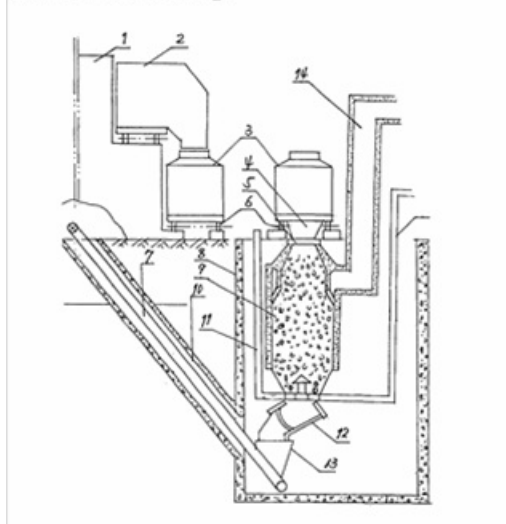
Title: Dry quenching coke fitting device

Abstract: The invention discloses a coke dry quenching device comprising a coke oven, a coke pot trolley, a belt conveyer for coke transportation, a underground concrete coke **quenching oven** chamber, a coke **quenching oven** and a channel for the belt conveyer. The underground concrete coke **quenching oven** chamber inside which the coke **quenching oven** is arranged, is built in the ground at one end of the trolley track; a coke-charging device is equipped on the top of the coke **quenching oven** and a coke-discharging device is arranged at the bottom of the coke **quenching oven**. The channel for the belt conveyer for coke transportation is arranged at one side of the lower part the underground concrete coke **quenching oven** chamber and the belt conveyer for coke transportation whose one end is connected to a coke-discharging chute is arranged inside the underground concrete coke **quenching oven** chamber.. The coke pot trolley track can be linear when the underground concrete coke **quenching oven** chamber is equipped on one side of the linear one or curve when the chamber is equipped in the middle of the curve one. The invention is characterized by simple structure, reasonable devising, convenient operation, simplified technology and very low investment cost, suitable for various coke producing enterprises.

Classifications:

International (IPC 8-9): C10B39/02 (Advanced/Invention);
C10B39/00 (Core/Invention)

PatBase - CN101104808_A



Family:

Publication number	Publication date	Application number	Application date
CN101104808 A	20080116	CN200610151142	20061210
CN101104808 B	20110907	CN200610151142	20061210

Priority:

CN200610151142 20061210

Probable Assignee: MINGJUN SUN
Assignee(s): (std): MINGJUN SUN
Assignee(s): SUN MINGJUN
Inventor(s): (std): MINGJUN SUN ; HONG HAN
Inventor(s): HAN HONG ; SUN MINGJUN

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
CN101104808 A	20080116	LSPB	+	published / reissued	
CN101104808 A	20080116	LSPB	+C06	PUBLICATION	
CN101104808 B	20110907	LSGT	+	granted / extensions (spc, cpc, pte)	
CN101104808 B	20110907	LSGT	+C14	GRANT OF PATENT OR UTILITY MODEL	
CN101104808 B	20130306	LSLI	LICC	ENFORCEMENT, CHANGE AND CANCELLATION OF RECORD OF CONTRACTS ON THE LICENCE FOR EXPLOITATION OF A PATENT OR UTILITY MODEL	
CN101104808 B	20160127	LSWD	-EXPY	TERMINATION OF PATENT RIGHT OR UTILITY MODEL	
CN101104808 B	20261210	PEXP		Calculated Patent Term Expiry	

Title: PROCESS FOR PRODUCING MULTILAYER CHIP ZINC OXIDE VARISTOR CONTAINING PURE SILVER INTERNAL ELECTRODES AND FIRING AT ULTRALOW TEMPERATURE

Abstract: A low-temperature firing process is available for cost saving to produce a multilayer chip ZnO varistor containing pure silver (Ag) formed as internal electrodes and calcined at ultralow firing temperature of 850-900 degrees centigrade, which process comprises: a) individually preparing ZnO grains in advance doped with doping ions for promotion of semi-conductivity of ZnO grains if calcined; b) individually preparing a desired high-impedance sintering material to be fired as grain boundaries to encapsulate ZnO grains; c) mixing the doped ZnO grains of Step a) with the high-impedance sintering material of Step b) in a predetermined ratio to form a mixture and proceeding with an initial sintering to have the mixture sintered and ground as composite ZnO ceramic powders, and d) processing the sintered mixture of Step c) to make multilayer chip ZnO varistors containing pure silver (Ag) internal electrodes but sintered at ultralow firing temperature of 850-900 degrees centigrade

Classifications:

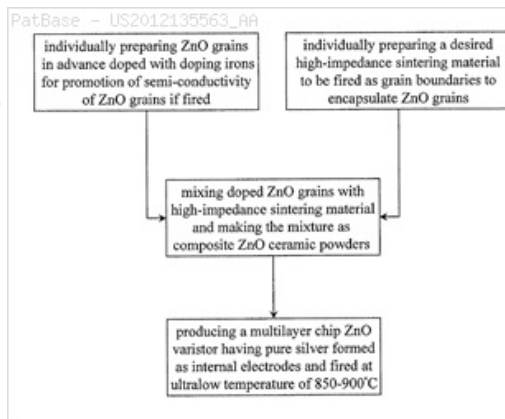
International (IPC 8-9): C04B22/06 C04B35/453 C04B35/65 H01C17/00 H01C17/30 H01C7/10 H01C7/112 H01C7/18

H01L21/02 (Advanced/Invention)

CPC: H01C7/112 H01C7/18 C04B35/265 C04B35/453 H01C17/06546 H01C17/06553

European: H01C7/112 H01C7/18

US: 257/E21.004 257/E21.004S 438/104 438/104P



Family:

Publication number	Publication date	Application number	Application date
EP2458597 A1	20120530	EP20110189587	20111117
JP2012114443 A2	20120614	JP20110255712	20111124
KR20120057533 A	20120605	KR20110123176	20111123
TW201221501 A	20120601	TW20100141024	20101126
US2012135563 AA	20120531	US20110298458	20111117

Priority:

TW20100141024 20101126 KR20110123176 20111123

Probable Assignee: SFI ELECTRONICS TECHNOLOGY INC

Assignee(s): (std): LEADER WELL TECHNOLOGY CO LTD ; LIEN CHING HOHN ; SFI ELECTRONICS TECHNOLOGY INC ; ZHU JIE AN

Inventor(s): (std): ZHU JIE AN ; LIEN CHING HOHN

Agent(s): BECK AND ROESSIG EUROPEAN PATENT ATTORNEYS

Designated states: AL AT BA BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC ME MK MT NL NO PL PT RO RS SE SI SK SM TR

Legal status (INPADOC)

[View legal status timeline](#)

Patent	Date recorded	Event group	Code	Event	Details
EP2458597 A1	20120530	LSPB	+	published / reissued	
EP2458597 A1	20130529	LSDW	-18D	APPLICATION DEEMED TO BE WITHDRAWN	EFFECTIVE DATE : 20121201
JP2012114443 A2	20120614	LSPB	+	published / reissued	
KR20120057533 A	20120605	LSPB	+	published / reissued	
KR20120057533 A	20161224	LSDW	-WITN	WITHDRAWAL DUE TO NO REQUEST FOR EXAMINATION	
TW201221501 A	20120601	LSPB	+	published / reissued	
US2012135563 AA	20120531	LSPB	+	published / reissued	
US2012135563 AA	20111117	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : SFI ELECTRONICS TECHNOLOGY INC., TAIWAN OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS: LIEN, CHING-HOHN; ZHU, JIE-AN; REEL/FRAME: 027243/0270 EFFECTIVE DATE : 20111102

US2012135563 AA 20141216

LSWD

-ABD3

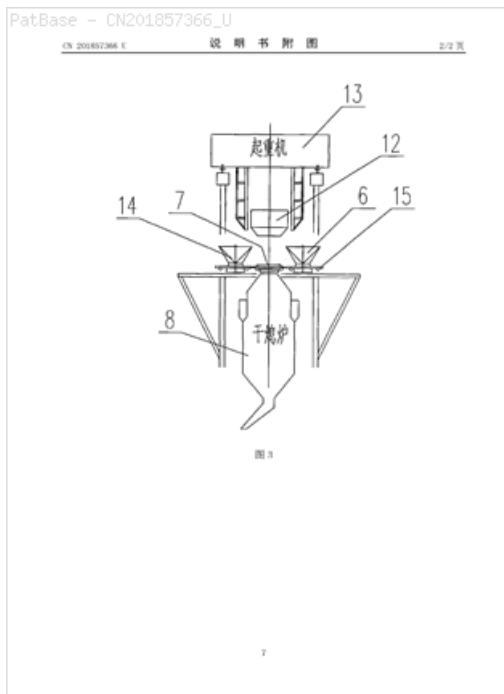
Abandoned --
Failure to
Respond to an
Office Action

Title: LOADING DEVICE FOR DIFFERENT TYPES OF COKE OVENS TO SHARE ONE SET OF DRY QUENCHING DEVICE

Abstract: The utility model relates to a loading device for different types of coke ovens to share one set of dry quenching device, which relates to the coking industry. The loading device comprises two hoppers in different forms, wherein the hoppers correspond to two coke tanks of coke ovens in different types, the two hoppers are respectively arranged on two moving trolleys and are connected with one moving trolley with an oven cover, and the two moving trolleys of the hoppers are arranged at both sides of the moving trolley with the oven cover. The loading device has the advantages that: the coke ovens in different types can be used, under the conditions that the difference of the single-hole coke yield is great, and the forms of the adopted coke tanks are also different, the coke is loaded into the same dry **quenching oven**, and the goal of sharing one set of dry quenching device is realized.

Classifications:

International (IPC 8-9): C10B39/02 C10B39/14 (Advanced/Invention)



Family:

Publication number	Publication date	Application number	Application date
CN101942310 A	20110112	CN201010278910	20100913
CN101942310 B	20130313	CN201010278910	20100913
CN201857366 U	20110608	CN201020525921U	20100913

Priority:

CN201010278910 20100913 CN201020525921U 20100913

Probable Assignee: ACRE COKING AND REFRACTORY DALIA

Assignee(s): (std): ACRE COKING AND REFRACTORY ENG ; ACRE COKING AND REFRACTORY ENG CONSULTING CORP MCC ; ACRE COKING AND REFRACTORY ENGINEERING CONSULTING ; ACRE COKING AND REFRACTORY DALIA ; ACRE COKING AND REFRACTORY ENGINEERING CONSULTING CORP MCC

Assignee(s): ACRE COKING AND REFRACTORY DALIAN ENGINEERING CONSULTING MCC CORP ; ACRE COKING AND REFRACTORY ENGINEERING CONSULTING MCC CORP

Inventor(s): (std): CHANGQING ZHANG ; CHAOHUI YUAN ; LIU YUHU ; MINGDENG WANG ; WANG MINGDENG ; YUAN ZHAOHUI ; YUHU LIU ; ZHANG CHANGQING ; ZHANGQING ZHANG ; ZHAOHUI YUAN

Inventor(s): ZHANG ZHANGQING ; YUAN CHAOHUI

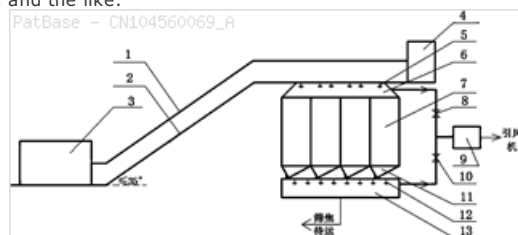
Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
CN101942310 A	20110112	LSPB	+	published / reissued	
CN101942310 A	20110112	LSPB	+C06	PUBLICATION	
CN101942310 B	20130313	LSGT	+	granted / extensions (spc, cpc, pte)	
CN101942310 B	20130313	LSGT	+C14	GRANT OF PATENT OR UTILITY MODEL	
CN101942310 B	20300913	PEXP		Calculated Patent Term Expiry	
CN201857366 U	20110608	LSGT	+	granted / extensions (spc, cpc, pte)	
CN201857366 U	20110608	LSGT	+C14	GRANT OF PATENT OR UTILITY MODEL	
CN201857366 U	20200913	PEXP		Calculated Patent Term Expiry	

Title: COKE QUENCHING METHOD AND DEVICE FOR RED COKES

Abstract: The invention relates to a coke quenching method and device for red cokes. The coke quenching method comprises the steps of coke conveying process: moving a coke quenching tank filled with red cokes to the top of a coke **quenching oven** on a rail; coke unloading process: unloading the cokes from the coke quenching tank to the coke **quenching oven**; cooling process: enabling the red cokes to be in contact with a water-cooled tube in the coke **quenching oven** so as to realize heat transfer for cooling, and at the same time, feeding nitrogen for auxiliary cooling; coke discharging process: after the cokes and the water-cooled tube are subjected to heat transfer, discharging the cokes from the bottom of the coke **quenching oven** to a convey ready-for-dispatch tank; and terminal cooling process: if the temperature of the cokes entering the convey ready-for-dispatch tank is high, spraying water to a terminal for cooling. Through the improvement on a technique for cooling red cokes by nitrogen, an effect of heat transfer is achieved by enabling the cooled tube filled with water, steam, or a water-steam mixture to be in contact with the red cokes in the coke **quenching oven**, so that the transverse homogenization of heat in the coke **quenching oven** can be promoted; due to the existence of pressure difference between the coke **quenching oven** and the outside after nitrogen is filled, outside air is prevented from entering oxidized cokes; and the method and device disclosed by the invention have the characteristics of strong heat transfer capability, low equipment investment and running costs, no pollution, and the like.

Classifications:**International (IPC 8-9):** C10B39/02 C10B39/04 (Advanced/Invention)**CPC:** C10B39/04 C10B39/02**Family:**

Publication number	Publication date	Application number	Application date
CN104560069 A	20150429	CN201410802389	20141219

Priority:

CN201410802389 20141219

Probable Assignee:

UNIV TIANJIN

Assignee(s): (std):

TIANJIN UNIV ; UNIV TIANJIN

Inventor(s): (std):

HAN JINFENG ; ZHANG SHUTING

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
CN104560069 A	20150429	LSPB	+	published / reissued	
CN104560069 A	20150429	LSPB	+C06	PUBLICATION	
CN104560069 A	20170510	LSDW	-WD01	INVENTION PATENT APPLICATION DEEMED WITHDRAWN AFTER PUBLICATION	

Title: Small-sized multipurpose single-chamber vacuum water **quenching oven**

Abstract: The invention discloses a small-sized multipurpose single-chamber vacuum water **quenching oven** comprising a furnace base, a furnace base supporting stand, a mated dolly and water tank, the furnace can submerge the metal parts heated under vacuum state below the liquid level of the dolly's water tank with a movable furnace door through rotating the furnace by 90 Deg, simultaneously inactive gas is filled into the furnace, the furnace door is opened automatically under the positive pressure in the furnace chamber, as a result, the spare parts needing quenching cooling in the furnace can be quenched in the water within one second.

Classifications:

International (IPC 8-9): C21D1/62 C21D1/773 (Advanced/Invention);
C21D1/62 C21D1/74 (Core/Invention)

Family:

Publication number	Publication date	Application number	Application date
CN1317401 C	20070523	CN200510021231	20050709
CN1730677 A	20060208	CN200510021231	20050709

Priority:

CN200510021231 20050709

Probable Assignee: INST OF ELECTRONIC ENGINEERING

Assignee(s): (std): INST OF ELECTRONIC ENGINEERING ; INSTITUTE OF ELECTRONIC ENGINEERING CHINA ACADEMY

Assignee(s): INSTITUTE OF ELECTRONIC ENGINEERING CHINA ACADEMY OF ENGINEERING PHYSICS ; OF
ELECTRONIC ENGINEERING CHINA ACADEMY OF ENGINEER

Inventor(s): (std): DONG FENG ; DONG FENG HAN ; FENG DONG

Inventor(s): FENG HAN DONG

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
CN1317401 C	20070523	LSGT	+	granted / extensions (spc, cpc, pte)	
CN1317401 C	20070523	LSGT	+C14	GRANT OF PATENT OR UTILITY MODEL	
CN1317401 C	20130828	LSLE	-C17	CESSATION OF PATENT RIGHT	
CN1317401 C	20250709	PEXP		Calculated Patent Term Expiry	
CN1730677 A	20060208	LSPB	+	published / reissued	
CN1730677 A	20060208	LSPB	+C06	PUBLICATION	

Title: METHOD FOR MANUFACTURING A TITANIUM ALLOY FOR BIOMEDICAL DEVICES

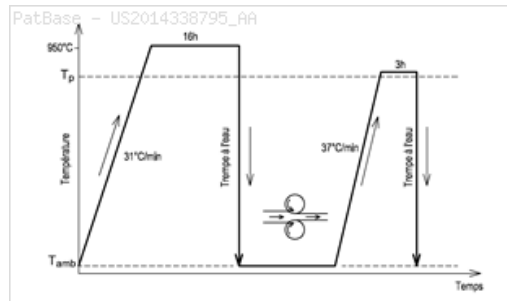
Abstract: The invention relates to a method for manufacturing a titanium alloy having superelastic properties and/or shape memory for biomedical use, which comprises the steps of: preparing an ingot by melting the various metals that form the desired alloy in a vacuum; optionally homogenizing the ingot in a vacuum by high-temperature annealing (higher than 900 degrees centigrade); first quenching; mechanical shaping (rolling, drawing, machining or the like); heat treatment for redissolution in beta phase beyond the beta transus temperature (until a second temperature and then maintaining same for a certain time); and second quenching; characterized in that said heat treatment phase is carried out in a gaseous atmosphere and also constitutes a surface treatment suitable for forming on the surface a layer of nitride, carbonitride, oxide, oxynitride or the like.

Classifications:

International (IPC 8-9): A61C13/00 A61L27/06 A61L29/02 A61L31/02 C22B34/12 C22B9/04 C22C1/02 C22C14/00 C22C16/00 C22C27/02 C22C28/00 C22C30/00 C22C30/04 C22F1/18 C23C14/06 C23C16/34 C23C8/06 C23C8/24 C23C8/28 C23C8/30 (Advanced/Invention)

CPC: A61C2201/007 A61L27/06 A61L29/02 A61L31/022 A61L2400/16 C21D2201/01 C21D2201/02 C22C1/02 C22C14/00 C22F1/183 C23C8/24 F04C2270/0421 C23C8/28 C23C8/30

US: 148/217 148/219 148/221 148/316 148/317

**Family:**

Publication number	Publication date	Application number	Application date
CN104245975 A	20141224	CN201280055596	20121107
EP2776596 A1	20140917	EP20120795498	20121107
EP2776596 B1	20190424	EP20120795498	20121107
FR2982618 A1	20130517	FR20110060281	20111110
FR2982618 B1	20140801	FR20110060281	20111110
JP2015503025 T2	20150129	JP20140540538T	20121107
JP2019094567 A2	20190620	JP20190005302	20190116
JP6469444 B2	20190213	JP20140540538T	20121107
US2014338795 AA	20141120	US20120357559	20121107
US9677162 BB	20170613	US20120357559	20121107
WO13068691 A1	20130516	WO2012FR52572	20121107

Priority:

FR20110060281 20111110 JP20140540538T 20121107 WO2012FR52572 20121107
JP20190005302 20190116

Probable Assignee: CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE

Assignee(s): (std): CENTRE NAT RECH SCIENT ; INST NAT SCIENCES APPLIQ ; CT NAT DE LA RESCERCH SCIENT ; INST NAT DES SCIENCES APPLIQUEES DE RENNES ; NAT DES SCIENCES APPLIQUEES DE RENNES INSA DE RENNES INST ; NAT DES SCIENCES APPLIQUEES DE RENNES INST

Assignee(s): INSTITUT NATIONAL DES SCIENCES APPLIQUEES DE RENNES ; NATIONAL DES SCIENCES APPLIQUEES DE RENNES (INSA DE RENNES) INST ; NATIONAL DES SCIENCES APPLIQUEES DE RENNES INSA DE RENNES INST ; NATIONAL DES SCIENCES APPLIQUEES DE RENNES INST ; INSTITUT NATIONAL DES SCIENCES APPLIQUEES DE RENNES INSA DE RENNES ; CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE CNRS ; CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE ; CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE CNRS ; CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE (CNRS)

Inventor(s): (std): DOINA GORDIN ; THIERRY GLORANT ; GLORANT THIERRY ; GORDIN DOINA

Agent(s): WAGRET FREDERIC ; IPSIDE; CABINET WAGRET; TSUKUNI AND ASSOCIATES; TSUKUNI HAJIME; MIYAKE TOSHIO; DAVID R; GORDON REES SCULLY MANSUKHANI LLP

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC 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 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

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
CN104245975 A	20141224	LSPB	+	published / reissued	
CN104245975 A	20141224	LSPB	+C06	PUBLICATION	
CN104245975 A	20170901	LSRV	-RJ01	REJECTION OF INVENTION PATENT APPLICATION AFTER PUBLICATION	
EP2776596 A1	20140917	LSPB	+	published / reissued	
EP2776596 A1	20140917	LSSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 20140310
EP2776596 A1	20170823	LSSES	+17Q	FIRST EXAMINATION REPORT DESPATCHED	EFFECTIVE DATE : 20170724
EP2776596 A1	20181212	LSGT	+INTG	INTENTION TO	EFFECTIVE DATE : 20181114

				GRANT ANNOUNCED	
EP2776596 B1	20190424	LSGT	+	granted / extensions (spc, cpc, pte)	
EP2776596 B1	20190424	LSGT	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : GB REF LEGAL EVENT CODE : FG4D TEXT : NOT ENGLISH
EP2776596 B1	20190430	LSNP	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : CH REF LEGAL EVENT CODE : EP
EP2776596 B1	20190515	LSNP	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : AT REF LEGAL EVENT CODE : REF REF DOCUMENT NUMBER : 1124231 COUNTRY OF REF DOCUMENT : AT KIND CODE OF REF DOCUMENT : T DESIGNATED STATE(S) : EFFECTIVE DATE : 20190515
EP2776596 B1	20190515	LSGT	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : IE REF LEGAL EVENT CODE : FG4D TEXT : LANGUAGE OF EP DOCUMENT: FRENCH
EP2776596 B1	20190516	LSPB	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : DE REF LEGAL EVENT CODE : R096 REF DOCUMENT NUMBER : 602012059390 COUNTRY OF REF DOCUMENT : DE
EP2776596 B1	20190910	LSRV	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : LT REF LEGAL EVENT CODE : MG4D
EP2776596 B1	20190930	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : NL NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20190424
EP2776596 B1	20191031	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : AL NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20190424
EP2776596 B1	20191031	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : PT NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20190824
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EP2776596 B1	20321107	PEXP		Calculated Patent Term Expiry	
FR2982618 A1	20130517	LSPB	+	published / reissued	
FR2982618 B1	20140801	LSGT	+	granted / extensions (spc, cpc, pte)	
FR2982618 B1	20151127	LSFE	+PLFP	FEE PAYMENT	YEAR OF FEE PAYMENT : 5
FR2982618 B1	20161118	LSFE	+PLFP	FEE PAYMENT	YEAR OF FEE PAYMENT : 6
FR2982618 B1	20171130	LSFE	+PLFP	FEE PAYMENT	YEAR OF FEE PAYMENT : 7
FR2982618 B1	20181129	LSFE	+PLFP	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
FR2982618 B1	20191018	LSLI	CL	Concession de licence (CONCESSION TO GRANT LICENCES)	REGISTERED NUMBER : 0230548 BOPI DATE : 2019-47
FR2982618 B1	20191122	LSLI	CL	CONCESSION TO GRANT LICENCES	PARTY TYPE : LICENSEE LICENSEE : OUEST VALORISATION, FR EFFECTIVE DATE : 20191018
FR2982618 B1	20191122	LSRE	RM	CORRECTION OF A MATERIAL ERROR	EFFECTIVE DATE : 20191018
FR2982618 B1	20311110	PEXP		Calculated Patent Term Expiry	
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JP2015503025 T2	20180208	LSRE	A521	WRITTEN AMENDMENT	TEXT : JAPANESE INTERMEDIATE CODE: A523 EFFECTIVE DATE : 20180208
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JP2015503025 T2	20181001	LSRE	A521	WRITTEN AMENDMENT	TEXT : JAPANESE INTERMEDIATE CODE: A523 EFFECTIVE DATE : 20181001
JP2015503025 T2	20181115	LSGT	+TRDD	DECISION OF GRANT OR REJECTION WRITTEN	
JP2015503025 T2	20181120	LSGT	+A01	WRITTEN DECISION TO GRANT A PATENT OR TO GRANT A REGISTRATION (UTILITY MODEL)	TEXT : JAPANESE INTERMEDIATE CODE: A01 EFFECTIVE DATE : 20181120
JP2015503025 T2	20190124	LSFE	+A61	FIRST PAYMENT OF ANNUAL FEES	TEXT : JAPANESE INTERMEDIATE CODE: A61

JP2015503025 T2	20190125	LSGT	+R150	(DURING GRANT PROCEDURE)	EFFECTIVE DATE : 20190116
				CERTIFICATE OF PATENT OR REGISTRATION OF UTILITY MODEL	TEXT : JAPANESE INTERMEDIATE CODE: R150 REF DOCUMENT NUMBER : 6469444 COUNTRY OF REF DOCUMENT : JP
JP2019094567 A2	20190620	LSPB	+	published / reissued	
JP2019094567 A2	20190208	LSRE	A521	WRITTEN AMENDMENT	TEXT : JAPANESE INTERMEDIATE CODE: A523 EFFECTIVE DATE : 20190208
JP2019094567 A2	20190208	LSER	+A621	WRITTEN REQUEST FOR APPLICATION EXAMINATION	TEXT : JAPANESE INTERMEDIATE CODE: A621 EFFECTIVE DATE : 20190208
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JP6469444 B2	20181122	LSGT	+A01	特許査定書 (Decision of patent grant)	
JP6469444 B2	20190122	LSFE	R100	特許料納付書 (Patent fee payment form)	
JP6469444 B2	20190125	LSGT	+R150	特許証 (Patent certificate)	
JP6469444 B2	20321107	PEXP		Calculated Patent Term Expiry	
US2014338795 AA	20141120	LSPB	+	published / reissued	
US2014338795 AA	20170516	LSFE	+PPV1	Publications -- Issue Fee Payment Verified	
US2014338795 AA	20170524	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
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US9677162 BB	20140619	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE, FRAN OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:INSTITUT NATIONAL DES SCIENCES APPLIQUEES DE RENNES; REEL/FRAME:033143/0658 EFFECTIVE DATE : 20140602
US9677162 BB	20170524	LSGT	PAT1	Patented Case	
US9677162 BB	20331123	PEXP		Calculated Patent Term Expiry (PTA 381 days)	
WO13068691 A1	20130516	LSPB	+	published / reissued	
WO13068691 A1	20140310	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 2012795498 COUNTRY OF REF DOCUMENT : EP
WO13068691 A1	20140509	LSNP	ENP	ENTRY INTO THE NATIONAL PHASE IN:	REF DOCUMENT NUMBER : 2014540538 COUNTRY OF REF DOCUMENT : JP KIND CODE OF REF DOCUMENT : A DESIGNATED STATE(S) :
WO13068691 A1	20140509	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 14357559 COUNTRY OF REF DOCUMENT : US
WO13068691 A1	20140512	LSNE	NENP	NON-ENTRY INTO THE NATIONAL PHASE IN:	REF COUNTRY CODE : DE

Title: High rate cooling furnace for metal strips

Abstract: In an apparatus that rapidly cools heat treated metal strips with a recirculating nitrogen-hydrogen cooling gas mixture having a hydrogen content which ranges between 15 percent -50 percent, and a recirculation circuit for the gas mixture having a fan for creating a flow through recirculation ducts connected, through expandable compensator corrugations, upstream to at least one gas/water exchanger, a safety system operates with the exchanger. The safety system includes a housing having a main flow area upstream of the exchanger and into which recirculating cooling gas flows. A first register is interposed across the main flow area for selectively switching between open and closed states thereby passing or blocking flow through a major portion of the main flow area. At least one bypass flow area is defined within the housing and located adjacent the main flow area. A second register is interposed across the bypass flow area for selectively switching between open and closed states thereby passing or blocking flow through the bypass area. Respective sensors react to a break in the strip or the corrugation, or an interruption of power, and actuators rapidly respond to a plurality of dangerous conditions for activating the sensing means and for switching the first and second registers in accordance with the particular dangerous conditions.

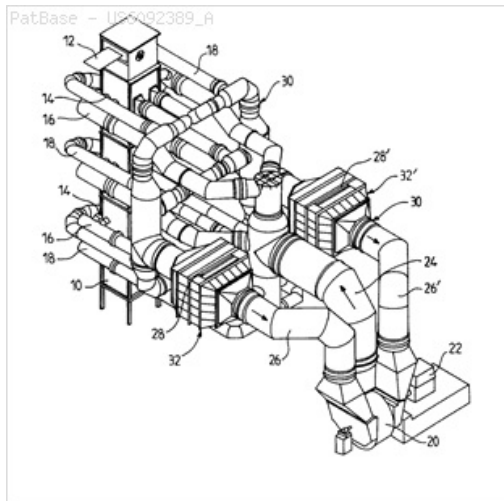
Classifications:

International (IPC 8-9): C21D1/00 C21D9/56 C21D9/573 C23C2/00 F27B9/28 F27D21/00 (Advanced/Invention); C23C2/00 F27B9/12 (Advanced/Non-invention); C21D1/00 C21D9/56 C21D9/573 C23C2/00 F27B9/00 F27D21/00 (Core/Invention)

International (IPC 1-7): C21D1/00 C21D1/613 C21D6/00 C21D9/56 C21D9/573 C23C2/00 F24F3/16 F25D25/00 F27D21/00 F27D9/00 CPC: C21D9/561 C21D9/573 F27B9/28 F27B2009/124 F27D21/00 F27D2021/0007 F27D2021/0092

European: C21D9/56C C21D9/573 F27B9/28 F27D21/00 R27B9/12B R27D21/00A R27D21/00S6

US: 148/634 148/644 62/378 62/78 623/780



Family:

Publication number	Publication date	Application number	Application date
AT212071 E	20020215	AT19980402476T	19981006
CN1088113 C	20020724	CN19981021346	19981015
CN1216323 A	19990512	CN19981021346	19981015
DE0916741 T1	19991104	DE19980402476T	19981006
DE69803157 D1	20020221	DE19986003157	19981006
DE69803157 D1	20020221	DE19986003157T	19981006
DE69803157 T2	20020814	DE19986003157T	19981006
EP0916741 A1	19990519	EP19980402476	19981006
EP0916741 B1	20020116	EP19980402476	19981006
ES2131493 T1	19990801	ES19980402476T	19981006
ES2131493 T3	20020501	ES19980402476T	19981006
FR2769695 A1	19990416	FR19970012906	19971015
FR2769695 B1	19991231	FR19970012906	19971015
IN02939DE1998 A	20060317	IN1998DE02939	19981005
IN216267 B	20080328	IN1998DE02939	19981005
JP11193422 A2	19990721	JP19980289117	19981012
JP3323820 B2	20020909	JP19980289117	19981012
KR100581983 B1	20060927	KR19980042659	19981013
KR19990037035 A	19990525	KR19980042659	19981013
US6092389 A	20000725	US19980172043	19981014

Priority:

FR19970012906 19971015

Probable Assignee: STEIN HEURTEY

Assignee(s): (std): STEIN HEURTEY ; STEIN HEURTEY EVRY

Assignee(s): STEIN HEURTEY ZAI DU BOIS DE L EPIN ; FIVES STEIN

Inventor(s): (std): JODET GERARD

Inventor(s): GERARD JODET

Designated states: AT BE DE ES FI GB IT LU NL SE

Legal status (INPADOC)

View legal status timeline

Patent	Date recorded	Event group	Code	Event	Details
AT212071 E	20020215	LSGT	+	granted / extensions (spc, cpc, pte)	
AT212071 E	20020615	LSPB	+UEP	PUBLICATION OF TRANSLATION OF EUROPEAN PATENT SPECIFICATION	

AT212071 E	20090715	LSLE	-REN	CEASED DUE TO NON-PAYMENT OF THE ANNUAL FEE	
AT212071 E	20181006	PEXP		Calculated Patent Term Expiry	
CN1088113 C	20020724	LSGT	+	granted / extensions (spc, cpc, pte)	
CN1088113 C	20020724	LSGT	+C14	GRANT OF PATENT OR UTILITY MODEL	
CN1088113 C	20121212	LSLE	-C17	CESSATION OF PATENT RIGHT	
CN1088113 C	20181015	PEXP		Calculated Patent Term Expiry	
CN1216323 A	19990512	LSPB	+	published / reissued	
CN1216323 A	19990512	LSPB	+C06	PUBLICATION	
DE0916741 T1	19991104	LSPB	+	published / reissued	
DE69803157 D1	20030213	LSGT	+8364	NO OPPOSITION DURING TERM OF OPPOSITION	
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DE69803157 D1	20090528	LSAS	8327	CHANGE IN THE PERSON/NAME/ADDRESS OF THE PATENT OWNER	PARTYTYPE : OWNER OWNER : FIVES STEIN, RIS ORANGIS, FR
DE69803157 D1	20090528	LSAS	8327	CHANGE IN THE PERSON/NAME/ADDRESS OF THE PATENT OWNER	PARTYTYPE : OWNER OWNER : FIVES STEIN, RIS ORANGIS, FR
DE69803157 D1	20100819	LSLE	-8339	CEASED/NON-PAYMENT OF THE ANNUAL FEE	
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DE69803157 T2	20181006	PEXP		Calculated Patent Term Expiry	
EP0916741 A1	19990519	LSPB	+	published / reissued	
EP0916741 A1	19990728	LSSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 19990531
EP0916741 A1	20000126	LSFE	+AKX	DESIGNATION FEES PAID	TEXT : AT BE DE ES FI GB IT LU NL SE
EP0916741 A1	20010711	LSSES	+17Q	FIRST EXAMINATION REPORT DESPATCHED	EFFECTIVE DATE : 20010522
EP0916741 B1	20020116	LSGT	+	granted / extensions (spc, cpc, pte)	
EP0916741 B1	20020501	LSGT	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : ES REF LEGAL EVENT CODE : FG2A REF DOCUMENT NUMBER : 2131493 COUNTRY OF REF DOCUMENT : ES KIND CODE OF REF DOCUMENT : T3 DESIGNATED STATE(S) :
EP0916741 B1	20030108	LSGT	+26N	NO OPPOSITION FILED	
EP0916741 B1	20070928	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : LU PAYMENT DATE : 20070928 YEAR OF FEE PAYMENT : 10
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EP0916741 B1	20090701	LSLE	-NLV4	NL: LAPSED OR ANULLED DUE TO NON-PAYMENT OF THE ANNUAL FEE	REF COUNTRY CODE : EP EFFECTIVE DATE : 20090501	
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				NATIONAL OFFICE TO EPO]	LAPSED DATE : 20081006
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EP0916741 B1	20100730	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : SE NOTIFICATION OF LAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20081007
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ES2131493 T3	20020501	LSGT	+	granted / extensions (spc, cpc, pte)	
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FR2769695 B1	19991231	LSGT	+	granted / extensions (spc, cpc, pte)	
FR2769695 B1	20090703	LSAS	CD	CHANGE OF NAME OR COMPANY NAME	
FR2769695 B1	20150925	LSFE	+PLFP	FEE PAYMENT	YEAR OF FEE PAYMENT : 19
FR2769695 B1	20160921	LSFE	+PLFP	FEE PAYMENT	YEAR OF FEE PAYMENT : 20
FR2769695 B1	20171015	PEXP		Calculated Patent Term Expiry	
IN02939DE1998 A	20060317	LSPB	+	published / reissued	
IN216267 B	20080328	LSGT	+	granted / extensions (spc, cpc, pte)	
IN216267 B	20181005	PEXP		Calculated Patent Term Expiry	

JP11193422 A2	19990721	LSPB	+	published / reissued	
JP3323820 B2	20020909	LSGT	+	granted / extensions (spc, cpc, pte)	
JP3323820 B2	20050621	LSFE	+R250	RECEIPT OF ANNUAL FEES	TEXT : JAPANESE INTERMEDIATE CODE: R250
JP3323820 B2	20060606	LSFE	+R250	RECEIPT OF ANNUAL FEES	TEXT : JAPANESE INTERMEDIATE CODE: R250
JP3323820 B2	20070605	LSFE	+R250	RECEIPT OF ANNUAL FEES	TEXT : JAPANESE INTERMEDIATE CODE: R250
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JP3323820 B2	20080610	LSFE	+FPAY	RENEWAL FEE PAYMENT (EVENT DATE IS RENEWAL DATE OF DATABASE)	YEAR OF FEE PAYMENT : 7
JP3323820 B2	20090318	LSFE	+FPAY	RENEWAL FEE PAYMENT (EVENT DATE IS RENEWAL DATE OF DATABASE)	YEAR OF FEE PAYMENT : 7
JP3323820 B2	20090318	LSAS	S533	WRITTEN REQUEST FOR REGISTRATION OF CHANGE OF NAME	TEXT : JAPANESE INTERMEDIATE CODE: R313533
JP3323820 B2	20090327	LSFE	+FPAY	RENEWAL FEE PAYMENT (EVENT DATE IS RENEWAL DATE OF DATABASE)	YEAR OF FEE PAYMENT : 7
JP3323820 B2	20090327	LSAS	R350	WRITTEN NOTIFICATION OF REGISTRATION OF TRANSFER	TEXT : JAPANESE INTERMEDIATE CODE: R350
JP3323820 B2	20090604	LSFE	+FPAY	RENEWAL FEE PAYMENT (EVENT DATE IS RENEWAL DATE OF DATABASE)	YEAR OF FEE PAYMENT : 7
JP3323820 B2	20090609	LSFE	+FPAY	RENEWAL FEE PAYMENT (EVENT DATE IS RENEWAL DATE OF DATABASE)	YEAR OF FEE PAYMENT : 8
JP3323820 B2	20100608	LSFE	+FPAY	RENEWAL FEE PAYMENT (EVENT DATE IS RENEWAL DATE OF DATABASE)	YEAR OF FEE PAYMENT : 9
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JP3323820 B2	20181012	PEXP		Calculated Patent Term Expiry	
KR100581983 B1	20060927	LSGT	+	granted / extensions (spc, cpc, pte)	
KR100581983 B1	20100503	LSFE	FPAY	ANNUAL FEE PAYMENT	PAYMENT DATE : 20100503 YEAR OF FEE PAYMENT : 5
KR100581983 B1	20110516	LSLE	-LAPS	LAPSE DUE TO UNPAID ANNUAL FEE	
KR100581983 B1	20181013	PEXP		Calculated Patent Term Expiry	
KR19990037035 A	19990525	LSPB	+	published / reissued	
KR19990037035 A	20030722	LSSES	A201	REQUEST FOR EXAMINATION	
KR19990037035 A	20050822	LSSES	-E902	NOTIFICATION OF REASON FOR REFUSAL	
KR19990037035 A	20060221	LSGT	+E701	DECISION TO GRANT OR REGISTRATION OF PATENT RIGHT	
KR19990037035 A	20060515	LSGT	+GRNT	WRITTEN DECISION TO GRANT	
US6092389 A	20000725	LSGT	+	granted / extensions (spc, cpc, pte)	
US6092389 A	19981014	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : STEIN HEURTEY, FRANCE OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:JODET, GERARD; REEL/FRAME:009527/0267 EFFECTIVE DATE : 19981007

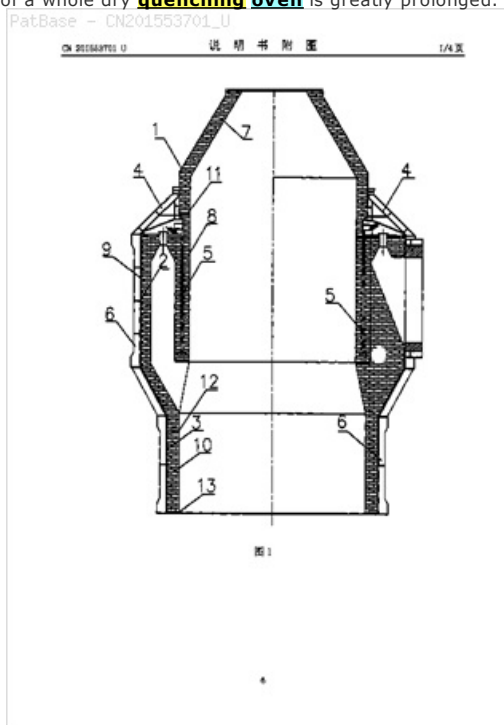
US6092389 A	20040113	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US6092389 A	20080227	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US6092389 A	20090122	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : FIVES STEIN, FRANCE OLDPARTY : CHANGE OF NAME; ASSIGNOR:STEIN HEURTEY; REEL/FRAME:022127/0870 EFFECTIVE DATE : 19911213
US6092389 A	20120725	LSLE	-LAPS	LAPSE FOR FAILURE TO PAY MAINTENANCE FEES	
US6092389 A	20120820	LSLE	-PEX1	Patent Expired Due to NonPayment of Maintenance Fees Under 37 CFR 1.362	
US6092389 A	20120820	LSLE	-STCH	INFORMATION ON STATUS: PATENT DISCONTINUATION	TEXT : PATENT EXPIRED DUE TO NONPAYMENT OF MAINTENANCE FEES UNDER 37 CFR 1.362
US6092389 A	20120911	LSLE	-FP	EXPIRED DUE TO FAILURE TO PAY MAINTENANCE FEE	EFFECTIVE DATE : 20120725
US6092389 A	20181014	PEXP		Calculated Patent Term Expiry	

Title: COKE DRY **QUENCHING OVEN** HOUSING WITH NOVEL STRUCTURE

Abstract: The utility model relates to a coke dry **quenching oven** housing with a novel structure, which comprises masonry bodies of a lower cooling section, a middle annular air passage section and an upper pre-store section as well as housings outside the masonries. The coke dry **quenching oven** is characterized in that the annular air passage section comprises an inner layer structure and an outer layer structure, wherein an inner wall masonry body of the annular air passage section is laid on suspension cylinders, and reinforcing steel structures are arranged outside the housings of an outer wall masonry body of the annular air passage section and the masonry body of the cooling section; supporting steel structures are connected with the reinforcing steel structures outside the annular air passage section; and the suspension cylinders are cooled through air. The utility model has the advantages that through the suspension cylinders, the reinforcing steel structures and the supporting steel structures at the top, the weight of the inner wall masonry body of an annular air passage is uniformly distributed onto the reinforcing steel structures outside the housings completely, therefore, the problem of the breakage of the suspension wall brick structure of a chute division wall due to large shearing force produced on the inner wall of the annular air passage is effectively avoided, and the service life of a whole dry **quenching oven** is greatly prolonged.

Classifications:

International (IPC 8-9): C10B39/00 (Advanced/Invention)



Family:

Publication number	Publication date	Application number	Application date
CN201553701 U	20100818	CN200920248053U	20091116

Priority:

CN200920248053U 20091116

Probable Assignee: ACRE COKING AND REFRACTORY DALIA

Assignee(s): (std): ACRE COKING AND REFRACTORY DALIA ; ACRE COKING AND REFRACTORY ENG ; ACRE COKING AND REFRACTORY ENGINEERING CONSULTING ; ACRE COKING AND REFRACTORY ENGINEERING CONSULTING CORP MCC ; ACRE COKING AND REFRACTORY ENG CONSULTING CORP MCC

Assignee(s): ACRE COKING AND REFRACTORY ENGINEERING CONSULTING MCC CORP ; ACRE COKING AND REFRACTORY DALIAN ENGINEERING CONSULTING MCC CORP

Inventor(s): (std): CHANGQING ZHANG ; MINGDENG WANG ; YOULIN LI

Inventor(s): ZHANG CHANGQING ; WANG MINGDENG ; LI YOULIN

Legal status (INPADOC)

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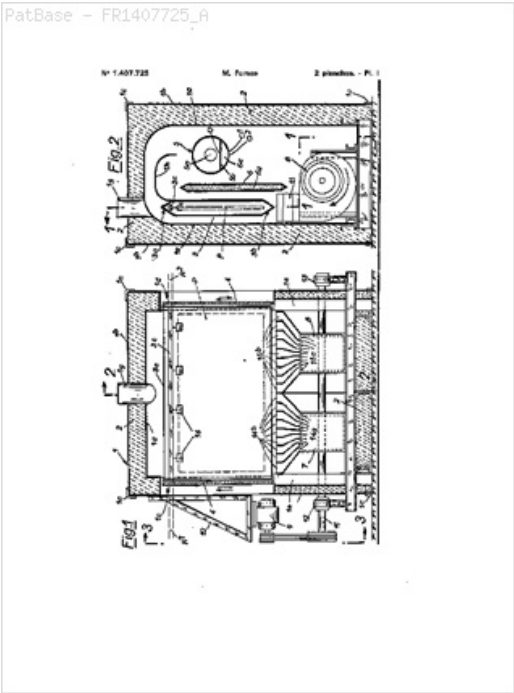
Patent	Date recorded	Event group	Code	Event	Details
CN201553701 U	20100818	LSGT	+	granted / extensions (spc, cpc, pte)	
CN201553701 U	20100818	LSGT	+C14	GRANT OF PATENT OR UTILITY MODEL	
CN201553701 U	20130529	LSWD	-RGAV	ABANDON PATENT RIGHT TO AVOID REGRANT	
CN201553701 U	20191116	PEXP		Calculated Patent Term Expiry	

Title: FOUR DE TREMPE POUR LE VERRE **QUENCHING OVEN** FOR GLASS (Machine translation)

Abstract: Source: FR1407725A [FR] (Claim 1) Dans l'exemple illustre, deux ventilateurs 7 et 8 sont montes.

Machine translation: (Claim 1) In the example illustrated, two fans are mounted 7 and 8.

Classifications:
International (IPC 8-9): C03B29/02 (Advanced/Invention); C03B29/00 (Core/Invention)
International (IPC 1-7): C03B29/02
CPC: C03B29/025
European: C03B29/02B



Family:

Publication number	Publication date	Application number	Application date
FR1407725 A	19650806	FR19644208953	19640609

Priority:
FR19644208953 19640609

Inventor(s): (std): FUMAS RAYMOND

Legal status (INPADOC)

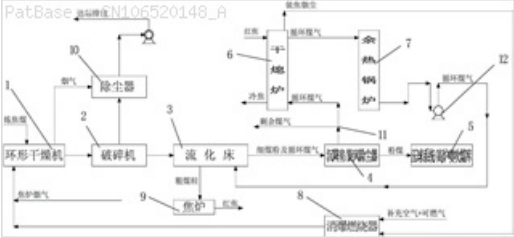
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Patent	Date recorded	Event group	Code	Event	Details
FR1407725 A	19650806	LSGT	+	granted / extensions (spc, cpc, pte)	
FR1407725 A	19840609	PEXP		Calculated Patent Term Expiry	

Title: WATER GAS PREPARING SYSTEM BASED ON DRY METHOD COKE QUENCHING

Abstract: The invention discloses a water gas preparing system based on dry method coke quenching. The water gas preparing system comprises a crusher, a fluidized bed, a coke oven and a dry **quenching oven**, all of which are sequentially connected. A dry **quenching oven** circulation gas outlet is connected with a dry medium inlet of the fluidized bed through a waste heat boiler and a circulation draught fan. A dry medium outlet of the fluidized bed is connected with a dry **quenching oven** circulation gas inlet through a settling chamber or a cyclone dust remover. A circulation pipeline from a circulation gas outlet of the settling chamber or the cyclone dust remover to the dry **quenching oven** circulation gas inlet is provided with a gas guiding-out port connected with a gas purifying system. The system is simple, running is reliable, low-temperature waste heat and byproduct gas can be effectively recycled, coking coal is effectively dried, the service life of equipment is prolonged, meanwhile, smoke discharge is greatly reduced, and the system is friendly to the environment.

Classifications:
International (IPC 8-9): C10B39/02 C10B53/04 C10B57/00 C10B57/10 C10J3/56 C10J3/84 (Advanced/Invention)
CPC: C10B39/02 C10B53/04 C10B57/005 C10B57/10 C10J3/56 C10J3/84 Y02P20/129



Family:

Publication number	Publication date	Application number	Application date
CN106520148 A	20170322	CN201610957402	20161027
CN106520148 B	20190315	CN201610957402	20161027

Priority:

CN201610957402 20161027

Probable Assignee: WUHAN IRON AND STEEL GROUP CORP

Assignee(s): (std): WUHAN IRON AND STEEL CO LTD ; WUHAN IRON AND STEEL GROUP CORP

Assignee(s): WUHAN IRON AND STEEL CO

Inventor(s): (std): XIAO JIANJUN ; WANG DACHUN ; WU GAOMING ; HE YIBING ; CHEN SHENGCHUN ; LEI XINGHONG

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
CN106520148 A	20170322	LSPB	+	published / reissued	
CN106520148 A	20170322	LSPB	+C06	PUBLICATION	
CN106520148 A	20170322	LSPB	PB01	公开 (The publication of application)	TEXT : 公开 (DISCLOSURE)
CN106520148 A	20170721	LSAS	TA01	专利申请权的转移 (Transfer of patent application right)	TEXT : 专利申请权、专利权的转移 (TRANSFER OF PATENT APPLICATION OR PATENT RIGHT) APPLICANT AFTER CHANGE : 武汉钢铁有限公司 (WUHAN IRON AND STEEL CO LTD) APPLICANT BEFORE CHANGE : 武汉钢铁股份有限公司 (WUHAN IRON AND STEEL CO LTD) EFFECTIVE DATE : 20170703
CN106520148 B	20190315	LSGT	+	granted / extensions (spc, cpc, pte)	
CN106520148 B	20190315	LSGT	+GR01	PATENT GRANT	
CN106520148 B	20361027	PEXP		Calculated Patent Term Expiry	

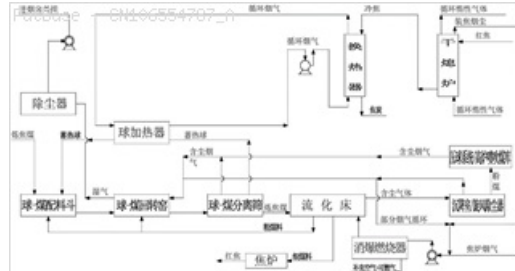
Title: DRY QUENCHING AND COKE COOLING WASTE HEAT UTILIZATION METHOD BASED ON MOBILE HEAT ACCUMULATOR

Abstract: The invention discloses a dry quenching and coke cooling waste heat utilization method based on a mobile heat accumulator. According to the method, crushed coking coal is delivered into a fluidized bed for fluidized classification, and coarse coal, fine coal and powdered coal are obtained through separation; the fine coal is delivered into a coke oven for coking, then red coke is obtained, cold coke is obtained after the red coke is cooled in a dry **quenching oven**, the cold coke is delivered into a heat exchanger, and after further heat exchange and cooling of the cold coke and circulation exhaust, the cold coke is discharged from the bottom of the heat exchanger; the circulation exhaust exhausted out of the heat exchanger is delivered into a ball heater to heat heat-accumulation balls, and then the circulation exhaust returns to the heat exchanger to further cool the cold coke; and the heated heat-accumulation balls from the heat heater and the coking coal are delivered into a ball-coal rotary kiln through a ball-coal distribution hopper, the coking coal is dried and crushed through the heat-accumulation balls, then the heat-accumulation balls and the crushed coking coal are separated through a coal-ball separation sieve, the heat-accumulation balls return to the ball heater, and the crushed coking coal is delivered to the fluidized bed. According to the method, the process is simple, waste heat of coke can be effectively recycled, exhaust emission is greatly reduced, and environment friendliness is achieved.

Classifications:

International (IPC 8-9): C10B39/02 C10B53/04 C10B57/00
C10B57/10 F27D17/00 (Advanced/Invention)

CPC: C10B39/02 C10B53/04 C10B57/00 C10B57/10 F27D17/004
F27D2017/007 F27M2001/045 Y02P10/265 Y02P20/129

**Family:**

Publication number	Publication date	Application number	Application date
CN106554787 A	20170405	CN201610969370	20161027
CN106554787 B	20190820	CN201610969370	20161027

Priority:

CN201610969370 20161027

Probable Assignee: WUHAN IRON AND STEEL GROUP CORP

Assignee(s): (std): WUHAN IRON AND STEEL CO LTD ; WUHAN IRON AND STEEL GROUP CORP

Assignee(s): WUHAN IRON AND STEEL CO

Inventor(s): (std): CUI HUIMING ; YU HUI ; JIANG HAOJIE ; WU GAOMING

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
CN106554787 A	20170405	LSPB	+	published / reissued	
CN106554787 A	20170405	LSPB	PB01	PUBLICATION	
CN106554787 A	20170718	LSAS	TA01	TRANSFER OF PATENT APPLICATION RIGHT	
CN106554787 A	20170718	LSAS	TA01	专利申请权的转移 (Transfer of patent application right)	TEXT : 专利申请权、专利权的转移 (TRANSFER OF PATENT APPLICATION OR PATENT RIGHT) APPLICANT AFTER CHANGE : 武汉钢铁有限公司 (WUHAN IRON AND STEEL CO LTD) APPLICANT BEFORE CHANGE : 武汉钢铁股份有限公司 (WUHAN IRON AND STEEL CO LTD) EFFECTIVE DATE : 20170629
CN106554787 B	20190820	LSGT	+	granted / extensions (spc, cpc, pte)	
CN106554787 B	20190820	LSGT	+GR01	PATENT GRANT	
CN106554787 B	20361027	PEXP		Calculated Patent Term Expiry	

Title: SYSTEM FOR HIGH RATE COOLING FURNACE FOR METAL STRIPS

Abstract: Rapid-cooling oven, forming part of a plant comprising various treatment stations, especially stations for the heat treatment of products in strip form, through which a metal strip runs continuously, the rapid cooling being obtained by spraying onto the strip a jet of an atmosphere gas consisting of a nitrogen/hydrogen mixture having a hydrogen content which is greater than 15 percent, and preferably close to 50 percent, the atmosphere gas being recirculated using a circuit of recirculation ducts comprising compensators made in the form of a series of corrugations allowing all the ducts to expand, at least one fan and at least one gas/water exchanger, wherein a safety device is provided to prevent this ingress of air into the circuit for recirculating the cooling gas or any leak of the latter into the environment, in the event of a break in a corrugation of a compensator or in the case of a leak from the latter, said safety device being made in the form of a flexible membrane impermeable to the cooling gas, the said membrane being placed around each of the compensators of the recirculation duct, a means being furthermore provided for immediately interrupting the flow of the cooling gas in its recirculation circuit.

Classifications:

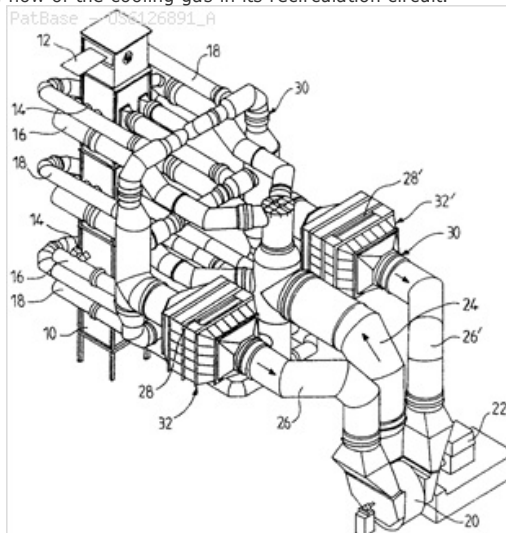
International (IPC 8-9): C21D1/00 C21D9/56 C21D9/573 C23C2/00 F27B9/28 F27D21/04 F27D7/02 (Advanced/Invention); C21D1/613 C23C2/00 F27D21/00 (Advanced/Non-invention); C21D1/00 C21D9/56 C21D9/573 F27B9/00 F27D21/00 F27D7/00 (Core/Invention); C21D1/56 (Core/Non-invention)

International (IPC 1-7): C21B7/10 C21D1/00 C21D9/56 C21D9/573 C21D9/573 C23C2/00 F16L51/03 F27D21/00 F27D21/00 F27D9/00 G01M3/26

CPC: F27D21/04 C21D1/613 C21D9/561 C21D9/573 F27B9/28 F27D7/02 F27D2007/023 F27D2021/0078 Y02P10/212

European: C21D9/56C C21D9/573 F27B9/28 F27D21/04 F27D7/02 M21D1/613 R27D21/00S4 R27D7/02B

US: 266/111 266/159 266/46

**Family:**

Publication number	Publication date	Application number	Application date
AT214474 E	20020315	AT19980402492T	19981007
CN1105286 C	20030409	CN19981021345	19981015
CN1216348 A	19990512	CN19981021345	19981015
DE0913658 T1	19991021	DE19980402492T	19981007
DE69804185 D1	20020418	DE19986004185	19981007
DE69804185 D1	20020418	DE19986004185T	19981007
DE69804185 T2	20021128	DE19986004185T	19981007
DE69804185 T3	20050929	DE19986004185T	19981007
EP0913658 A1	19990506	EP19980402492	19981007
EP0913658 B1	20020313	EP19980402492	19981007
EP0913658 B2	20050406	EP19980402492	19981007
ES2131494 T1	19990801	ES19980402492T	19981007
ES2131494 T3	20020816	ES19980402492T	19981007
ES2131494 T5	20050716	ES19980402492T	19981007
FR2769696 A1	19990416	FR19970012907	19971015
FR2769696 B1	19991231	FR19970012907	19971015
IN02943DE1998 A	20091113	IN1998DE02943	19981005
IN244840 B	20101224	IN1998DE02943	19981005
JP11193421 A2	19990721	JP19980289116	19981012
JP3274840 B2	20020415	JP19980289116	19981012
KR100519183 B1	20051229	KR19980042660	19981013
KR19990037036 A	19990525	KR19980042660	19981013
US6126891 A	20001003	US19980172297	19981014

Priority:

FR19970012907 19971015 KR19980042660 19981013

Probable Assignee: STEIN HEURTEY

Assignee(s): (std): STEIN HEURTEY ; STEIN HEURTEY EVRY

Assignee(s): STEIN HEURTEY ZAI DU BOIS DE L EPIN ; FIVES STEIN

Inventor(s): (std): JODET GERARD ; NOZIERES JEAN JACQUES

Inventor(s): JEAN JACQUES NOZIERES ; GERARD JODET

Designated states: AT BE DE ES FI GB IT LU NL SE

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
AT214474 E	20020315	LSGT	+	granted / extensions (spc, cpc, pte)	
AT214474 E	20060915	LSPB	+UEP	PUBLICATION OF	REF DOCUMENT NUMBER :

				TRANSLATION OF EUROPEAN PATENT SPECIFICATION	0913658 COUNTRY OF REF DOCUMENT : EP
AT214474 E	20090515	LSAS	EEFA	CHANGE OF THE COMPANY NAME	
AT214474 E	20181007	PEXP		Calculated Patent Term Expiry	
CN1105286 C	20030409	LSGT	+	granted / extensions (spc, cpc, pte)	
CN1105286 C	19990512	LSPB	+C06	PUBLICATION	
CN1105286 C	20030409	LSGT	+C14	GRANT OF PATENT OR UTILITY MODEL	
CN1105286 C	20161130	LSWD	-EXPY	TERMINATION OF PATENT RIGHT OR UTILITY MODEL	
CN1105286 C	20181015	PEXP		Calculated Patent Term Expiry	
CN1216348 A	19990512	LSPB	+	published / reissued	
DE0913658 T1	19991021	LSPB	+	published / reissued	
DE69804185 D1	20030313	LSOP	-8363	OPPOSITION AGAINST THE PATENT	
DE69804185 D1	20030313	LSOP	-8363	OPPOSITION AGAINST THE PATENT	
DE69804185 D1	20050609	LSOP	+8366	RESTRICTED MAINTAINED AFTER OPPOSITION PROCEEDINGS	
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DE69804185 D1	20090528	LSAS	8327	CHANGE IN THE PERSON/NAME/ADDRESS OF THE PATENT OWNER	PARTYTYPE : OWNER OWNER : FIVES STEIN, RIS ORANGIS, FR
DE69804185 D1	20090528	LSAS	8327	CHANGE IN THE PERSON/NAME/ADDRESS OF THE PATENT OWNER	PARTYTYPE : OWNER OWNER : FIVES STEIN, RIS ORANGIS, FR
DE69804185 T2	20021128	LSGT	+	granted / extensions (spc, cpc, pte)	
DE69804185 T2	20030313	LSOP	-8363	OPPOSITION AGAINST THE PATENT	
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DE69804185 T3	20181007	PEXP		Calculated Patent Term Expiry	
EP0913658 A1	19990506	LSPB	+	published / reissued	
EP0913658 A1	19990721	LSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 19990521
EP0913658 A1	20000119	LSFE	+AKX	DESIGNATION FEES PAID	TEXT : AT BE DE ES FI GB IT LU NL SE
EP0913658 A1	20010725	LSRE	RTI1	TITLE (CORRECTION)	TEXT : SAFETY SYSTEM FOR A FURNACE PROVIDING GAS COOLING FOR METAL STRIP
EP0913658 A1	20010822	LSES	+17Q	FIRST EXAMINATION REPORT DESPATCHED	EFFECTIVE DATE : 20010709
EP0913658 A1	20020816	LSGT	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : ES REF LEGAL EVENT CODE : FG2A REF DOCUMENT NUMBER : 2131494 COUNTRY OF REF DOCUMENT : ES KIND CODE OF REF DOCUMENT : T3 DESIGNATED STATE(S) :

EP0913658 A1	20030205	LSOP	-26	OPPOSITION FILED	PARTYTYPE : OPPONENT OPPONENT : LOI THERMPROCESS GMBH EFFECTIVE DATE : 20021212
EP0913658 A1	20030401	LSOP	-NLR1	NL: OPPOSITION HAS BEEN FILED WITH THE EPO	PARTYTYPE : OPPONENT REF COUNTRY CODE : EP OPPONENT : LOI THERMPROCESS GMBH
EP0913658 A1	20040714	LSRE	RTI2	TITLE (CORRECTION)	TEXT : SAFETY SYSTEM FOR A FURNACE PROVIDING GAS COOLING FOR METAL STRIP
EP0913658 A1	20040818	LSRE	RTI2	TITLE (CORRECTION)	TEXT : SAFETY SYSTEM FOR A FURNACE PROVIDING GAS COOLING FOR METAL STRIP
EP0913658 A1	20050406	LSRE	27A	PATENT MAINTAINED IN AMENDED FORM	EFFECTIVE DATE : 20050406
EP0913658 A1	20050503	LSPB	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : SE REF LEGAL EVENT CODE : RPEO
EP0913658 A1	20050601	LSOP	NLR2	NL: DECISION OF OPPOSITION	REF COUNTRY CODE : EP EFFECTIVE DATE : 20050406
EP0913658 A1	20050716	LSRE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : ES REF LEGAL EVENT CODE : DC2A DATE OF REF DOCUMENT : 20050408 KIND CODE OF REF DOCUMENT : T5 DESIGNATED STATE(S) :
EP0913658 A1	20121031	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : SE PAYMENT DATE : 20120924 YEAR OF FEE PAYMENT : 15
EP0913658 A1	20121031	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : FI PAYMENT DATE : 20120920 YEAR OF FEE PAYMENT : 15
EP0913658 A1	20121031	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : GB PAYMENT DATE : 20120924 YEAR OF FEE PAYMENT : 15
EP0913658 A1	20121130	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : LU PAYMENT DATE : 20121008 YEAR OF FEE PAYMENT : 15
EP0913658 A1	20130131	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : NL PAYMENT DATE : 20120918 YEAR OF FEE PAYMENT : 15
EP0913658 A1	20130131	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DE PAYMENT DATE : 20120924 YEAR OF FEE PAYMENT : 15
EP0913658 A1	20130228	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : ES PAYMENT DATE : 20121005 YEAR OF FEE PAYMENT : 15
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EP0913658 A1	20140521	LSLE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : NL REF LEGAL EVENT CODE : V1 EFFECTIVE DATE : 20140501
EP0913658 A1	20140603	LSLE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : SE REF LEGAL EVENT CODE : EUG
EP0913658 A1	20140615	LSLE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : AT REF LEGAL EVENT CODE : MM01 REF DOCUMENT NUMBER : 214474 COUNTRY OF REF

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EP0913658 A1	20140625	LSLE	-GBPC	GB: EUROPEAN PATENT CEASED THROUGH NON- PAYMENT OF RENEWAL FEE	REF COUNTRY CODE : EP EFFECTIVE DATE : 20131007
EP0913658 A1	20140731	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : GB NOTIFICATION OF LAPSE : LAPSE BECAUSE OF NON- PAYMENT OF DUE FEES LAPSED DATE : 20131007
EP0913658 A1	20140814	LSDW	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : DE REF LEGAL EVENT CODE : R119 REF DOCUMENT NUMBER : 69804185 COUNTRY OF REF DOCUMENT : DE EFFECTIVE DATE : 20140501
EP0913658 A1	20140829	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : AT NOTIFICATION OF LAPSE : LAPSE BECAUSE OF NON- PAYMENT OF DUE FEES LAPSED DATE : 20131007
EP0913658 A1	20140829	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DE NOTIFICATION OF LAPSE : LAPSE BECAUSE OF NON- PAYMENT OF DUE FEES LAPSED DATE : 20140501
EP0913658 A1	20140829	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : SE NOTIFICATION OF LAPSE : LAPSE BECAUSE OF NON- PAYMENT OF DUE FEES LAPSED DATE : 20131008
EP0913658 A1	20140829	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : NL NOTIFICATION OF LAPSE : LAPSE BECAUSE OF NON- PAYMENT OF DUE FEES LAPSED DATE : 20140501
EP0913658 A1	20140829	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : FI NOTIFICATION OF LAPSE : LAPSE BECAUSE OF NON- PAYMENT OF DUE FEES LAPSED DATE : 20131007
EP0913658 A1	20141107	LSLE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : ES REF LEGAL EVENT CODE : FD2A EFFECTIVE DATE : 20141107
EP0913658 A1	20150130	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : ES NOTIFICATION OF LAPSE : LAPSE BECAUSE OF NON- PAYMENT OF DUE FEES LAPSED DATE : 20131008
EP0913658 A1	20150331	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : IT PAYMENT DATE : 20140930 YEAR OF FEE PAYMENT : 17
EP0913658 A1	20150430	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : BE PAYMENT DATE : 20140922 YEAR OF FEE PAYMENT : 17
EP0913658 A1	20150731	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : LU NOTIFICATION OF LAPSE : LAPSE BECAUSE OF NON- PAYMENT OF DUE FEES LAPSED DATE : 20131007
EP0913658 A1	20160729	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM	COUNTRY OF REF DOCUMENT : IT NOTIFICATION OF LAPSE : LAPSE BECAUSE OF NON- PAYMENT OF DUE FEES

EP0913658 A1	20170731	LSLE	-PG25	NATIONAL OFFICE TO EPO] LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	LAPSED DATE : 20151007 COUNTRY OF REF DOCUMENT : BE NOTIFICATION OF LAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20151031
EP0913658 B1	20020313	LSGT	+	granted / extensions (spc, cpc, pte)	
EP0913658 B1	20181007	PEXP		Calculated Patent Term Expiry	
EP0913658 B2	20050406	LSGT	+	granted / extensions (spc, cpc, pte)	
EP0913658 B2	20181007	PEXP		Calculated Patent Term Expiry	
ES2131494 T1	19990801	LSPB	+	published / reissued	
ES2131494 T3	20020816	LSGT	+	granted / extensions (spc, cpc, pte)	
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ES2131494 T3	20181007	PEXP		Calculated Patent Term Expiry	
ES2131494 T5	20050716	LSGT	+	granted / extensions (spc, cpc, pte)	
FR2769696 A1	19990416	LSPB	+	published / reissued	
FR2769696 B1	19991231	LSGT	+	granted / extensions (spc, cpc, pte)	
FR2769696 B1	20090703	LSAS	CD	CHANGE OF NAME OR COMPANY NAME	
FR2769696 B1	20150925	LSFE	+PLFP	FEE PAYMENT	YEAR OF FEE PAYMENT : 19
FR2769696 B1	20160921	LSFE	+PLFP	FEE PAYMENT	YEAR OF FEE PAYMENT : 20
FR2769696 B1	20171015	PEXP		Calculated Patent Term Expiry	
IN02943DE1998 A	20091113	LSPB	+	published / reissued	
IN244840 B	20101224	LSGT	+	granted / extensions (spc, cpc, pte)	
IN244840 B	20181005	PEXP		Calculated Patent Term Expiry	
JP11193421 A2	19990721	LSPB	+	published / reissued	
JP3274840 B2	20020415	LSGT	+	granted / extensions (spc, cpc, pte)	
JP3274840 B2	20050208	LSFE	+R250	RECEIPT OF ANNUAL FEES	TEXT : JAPANESE INTERMEDIATE CODE: R250
JP3274840 B2	20060207	LSFE	+R250	RECEIPT OF ANNUAL FEES	TEXT : JAPANESE INTERMEDIATE CODE: R250
JP3274840 B2	20070206	LSFE	+R250	RECEIPT OF ANNUAL FEES	TEXT : JAPANESE INTERMEDIATE CODE: R250
JP3274840 B2	20080212	LSFE	+FPAY	RENEWAL FEE PAYMENT (EVENT DATE IS RENEWAL DATE OF DATABASE)	YEAR OF FEE PAYMENT : 7
JP3274840 B2	20090203	LSFE	+FPAY	RENEWAL FEE PAYMENT (EVENT DATE IS RENEWAL DATE OF DATABASE)	YEAR OF FEE PAYMENT : 8
JP3274840 B2	20090318	LSFE	+FPAY	RENEWAL FEE PAYMENT (EVENT DATE IS RENEWAL DATE OF DATABASE)	YEAR OF FEE PAYMENT : 8
JP3274840 B2	20090318	LSAS	S533	WRITTEN REQUEST FOR REGISTRATION OF CHANGE OF NAME	TEXT : JAPANESE INTERMEDIATE CODE: R313533
JP3274840 B2	20090327	LSFE	+FPAY	RENEWAL FEE PAYMENT (EVENT DATE IS RENEWAL DATE OF DATABASE)	YEAR OF FEE PAYMENT : 8
JP3274840 B2	20090327	LSAS	R350	WRITTEN NOTIFICATION OF	TEXT : JAPANESE INTERMEDIATE CODE: R350

REGISTRATION OF TRANSFER					
JP3274840 B2	20100209	LSFE	+FPAY	RENEWAL FEE PAYMENT (EVENT DATE IS RENEWAL DATE OF DATABASE)	YEAR OF FEE PAYMENT : 9
JP3274840 B2	20110201	LSFE	+FPAY	RENEWAL FEE PAYMENT (EVENT DATE IS RENEWAL DATE OF DATABASE)	YEAR OF FEE PAYMENT : 10
JP3274840 B2	20120207	LSFE	+FPAY	RENEWAL FEE PAYMENT (EVENT DATE IS RENEWAL DATE OF DATABASE)	YEAR OF FEE PAYMENT : 11
JP3274840 B2	20130212	LSFE	+FPAY	RENEWAL FEE PAYMENT (EVENT DATE IS RENEWAL DATE OF DATABASE)	YEAR OF FEE PAYMENT : 12
JP3274840 B2	20140201	LSLE	-LAPS	CANCELLATION BECAUSE OF NO PAYMENT OF ANNUAL FEES	
JP3274840 B2	20181012	PEXP		Calculated Patent Term Expiry	
KR100519183 B1	20051229	LSGT	+	granted / extensions (spc, cpc, pte)	
KR100519183 B1	20110901	LSFE	FPAY	ANNUAL FEE PAYMENT	PAYMENT DATE : 20110901 YEAR OF FEE PAYMENT : 7
KR100519183 B1	20120917	LSFE	FPAY	ANNUAL FEE PAYMENT	PAYMENT DATE : 20120917 YEAR OF FEE PAYMENT : 8
KR100519183 B1	20130929	LSLE	-LAPS	LAPSE DUE TO UNPAID ANNUAL FEE	
KR100519183 B1	20181013	PEXP		Calculated Patent Term Expiry	
KR19990037036 A	19990525	LSPB	+	published / reissued	
KR19990037036 A	20030604	LSSES	A201	REQUEST FOR EXAMINATION	
KR19990037036 A	20050720	LSGT	+E701	DECISION TO GRANT OR REGISTRATION OF PATENT RIGHT	
KR19990037036 A	20050928	LSGT	+GRNT	WRITTEN DECISION TO GRANT	
US6126891 A	20001003	LSGT	+	granted / extensions (spc, cpc, pte)	
US6126891 A	19981014	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : STEIN HEURTEY, FRANCE OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:JODET, GERARD; NOZIERES, JEAN-JACQUES; REEL/FRAME:009526/0761 EFFECTIVE DATE : 19981007
US6126891 A	20000914	LSGT	PAT1	Patented Case	
US6126891 A	20000914	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US6126891 A	20040322	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US6126891 A	20080327	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US6126891 A	20090122	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : FIVES STEIN, FRANCE OLDPARTY : CHANGE OF NAME; ASSIGNOR:STEIN HEURTEY; REEL/FRAME:022127/0870 EFFECTIVE DATE : 19911213
US6126891 A	20120326	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 12
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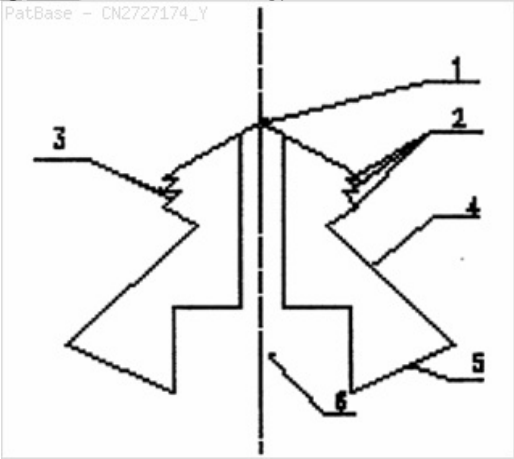
Title: Elliptic blast cap for improving falling uniformity of coke in dry **quenching oven**

Abstract: The utility model provides an elliptic blast cap for improving falling uniformity of coke in dry **quenching oven**, comprising two layers of umbrella-shaped external shapes, an air inlet (6) consisting of three layers of conical air outlets (2) and a metal ring, sector boards (3), lower sector boards (5) and an air inlet (6). The three layers of conical air outlets (2) are spaced by the sector boards (3). Wherein, the two layers of umbrella-shaped external shapes consists of top umbrella surfaces (1) and lower umbrella surfaces (4); eccentricity e of the elliptic cross section of the elliptic blast cap is 0.9. The ratio of the long diameter of the elliptic umbrella surface (1) on the top part of the elliptic blast cap and the diameter of the round umbrella surface (4) on the lower part of the elliptic blast cap is 1:2; the ratio of the diameter of the lower umbrella surface (4) and the diameter of a cooling chamber of a dry **quenching oven** is 1:1.6. The utility model has the advantages of simple structural design and easy installation; the elliptic blast cap improves the falling uniformity of coke in dry **quenching oven**, improves the running stability of the dry **quenching oven**, and saves the energy.

Classifications:

International (IPC 8-9): C10B39/00 (Advanced/Invention); C10B39/00 (Core/Invention)

International (IPC 1-7): C10B39/00



Family:

Publication number	Publication date	Application number	Application date
CN2727174 Y	20050921	CN200420009116U	20040617

Priority:

CN200420009116U 20040617 CN20042009116U 20040617

Probable Assignee: UNIV SCIENCE AND TECH BEIJING

Assignee(s): (std): OF SCIENCE AND TECHNOLOGY BEIJING UNIV ; UNIV SCIENCE AND TECH BEIJING

Assignee(s): UNIVERSITY OF SCIENCE AND TECH BEIJING ; SCIENCE AND TECH BEIJING UNIV ; OF SCIENCE AND TECH BEIJING UNIV

Inventor(s): (std): FENG YANHUI ; CAI CHENGYOU ; LIU HUAFEI ; SHAO FENG ; ZHANG HU ; ZHANG XINXIN ; ZHANG ZHANGQING ; XU LIE

Inventor(s): YANHUI FENG ; ZHANGQING ZHANG ; XINXIN ZHANG ; CHENGYOU CAI ; FENG SHAO ; HU ZHANG ; HUAFEI LIU ; LIE XU

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
CN2727174 Y	20050921	LSGT	+	granted / extensions (spc, cpc, pte)	
CN2727174 Y	20050921	LSGT	+C14	GRANT OF PATENT OR UTILITY MODEL	
CN2727174 Y	20070808	LSLE	-C19	LAPSE OF PATENT RIGHT DUE TO NON-PAYMENT OF THE ANNUAL FEE	
CN2727174 Y	20140617	PEXP		Calculated Patent Term Expiry	

Title: Low blast cap facilitating coke falling in dry **quenching oven**

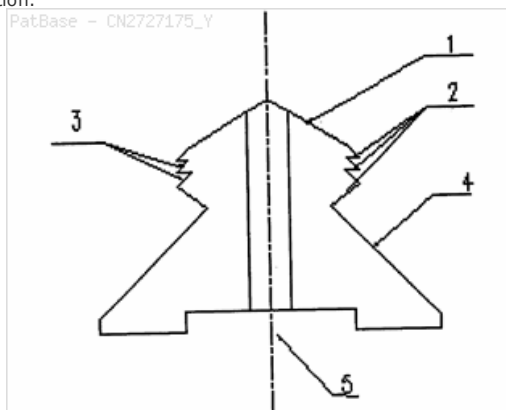
Abstract: The utility model provides a low blast cap facilitating coke falling in dry **quenching oven**, comprising two layers of umbrella type external shapes (1, 4), an air inlet (5) consisting of three layers of conical air outlets (2) and a metal circular ring, sector boards (3) and three layers of conical air outlets (2). The three layers of conical air outlets (2) are spaced by the sector boards (3). The mounting position of a blast cap (7) is low; the height of the tip of the blast cap above the starting surface of a bottom conical bucket of a dry **quenching oven** is only 1/15 of the total height of the blast cap. When the dry **quenching oven** is running, some circulating air enters the interface position of a center air-supply annular channel (11) of the dry **quenching oven** and the bottom conical bucket, passed through a horizontal air channel and a vertical air channel (12), flows into the air inlet (5) on the lower end of the blast cap, and then flows out from the three layers of conical air outlets (2) on the upper end of the blast cap; some circulating air directly enters the bottom conical bucket (8) from a circular seam air-supply annular channel (10). The low blast cap facilitating coke falling in dry **quenching oven** has the advantages of that the service life of the blast cap is prolonged, the heat recovery rate is raised, and the dry **quenching oven** is guaranteed to have stable running and low energy consumption.

Classifications:

International (IPC 8-9): C10B39/00 (Advanced/Invention);

C10B39/00 (Core/Invention)

International (IPC 1-7): C10B39/00



Family:

Publication number	Publication date	Application number	Application date
CN2727175 Y	20050921	CN200420009117U	20040617

Priority:

CN200420009117U 20040617 CN20042009117U 20040617

Probable Assignee: UNIV SCIENCE AND TECH BEIJING

Assignee(s): (std): OF SCIENCE AND TECHNOLOGY BEIJING UNIV ; UNIV SCIENCE AND TECH BEIJING

Assignee(s): UNIVERSITY OF SCIENCE AND TECH BEIJING ; SCIENCE AND TECH BEIJING UNIV ; OF SCIENCE AND TECH BEIJING UNIV

Inventor(s): (std): CHEN JIANWEI ; DONG XINGHONG ; FENG YANHUI ; LIU HUA FEI ; YU ZHENDONG ; ZHANG HU ; ZHANG XINXIN ; ZHENG WENHUA

Inventor(s): ZHENDONG YU ; WENHUA ZHENG ; XINGHONG DONG ; XINXIN ZHANG ; YANHUI FENG ; HU ZHANG ; HUA FEI LIU ; JIANWEI CHEN

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
CN2727175 Y	20050921	LSGT	+	granted / extensions (spc, cpc, pte)	
CN2727175 Y	20050921	LSGT	+C14	GRANT OF PATENT OR UTILITY MODEL	
CN2727175 Y	20070808	LSLE	-C19	LAPSE OF PATENT RIGHT DUE TO NON-PAYMENT OF THE ANNUAL FEE	
CN2727175 Y	20140617	PEXP		Calculated Patent Term Expiry	

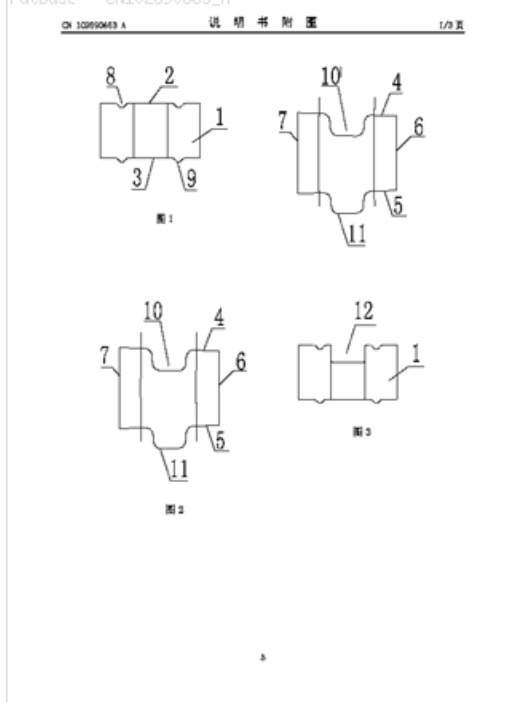
Title: DRY COKE **QUENCHING OVEN** ANNULAR AIR DUCT CHAIN STRUCTURE COMBINATION REFRACTORY BRICK

Abstract: The invention relates to a dry coke **quenching oven** annular air duct chain structure combination refractory brick which comprises a brick body. The brick body comprises an upper connecting surface, a lower connection surface, a left connecting surface, a right connecting surface, a front connecting surface, and a back connecting surface. The upper connecting surface and the lower connecting surface are connecting surfaces of an upper brick body and a lower brick body. The left connecting surface and the right connecting face are connecting surfaces of a left brick body and a right brick body. The upper connecting surface is provided with a small groove, and the lower connecting surface is provided with a small tenon. The small groove fits with the small tenon. The left connecting surface is provided with a large groove, and the right connecting surface is provided with a large tenon. The large groove fits with the large tenon. The width of the front connecting surface is less than the width of the back connecting surface. The refractory brick provided by the invention has the advantages of great fitting ability, firm connection, long service life and anti-collapse.

Classifications:

International (IPC 8-9): C10B39/02 (Advanced/Invention)

PatBase - CN102690663_R



Family:

Publication number	Publication date	Application number	Application date
CN102690663 A	20120926	CN201210130025	20120427
CN202688264 U	20130123	CN201220188636U	20120427

Priority:

CN201210130025 20120427 CN201220188636U 20120427

Probable Assignee: YIXING HENGXIANG REFRACTORY MATERIALS CO LTD

Assignee(s): (std): YIXING HENGXIANG REFRACTORY MATERIAL CO LTD ; YIXING HENGXIANG REFRACTORY MATERIALS CO LTD

Assignee(s): YIXING HENGXIANG REFRACTORY MATERIALS CO

Inventor(s): (std): WANG FEI ; BAO JIALIN ; QIAN HULIN ; WANG CHUNHONG ; FEI WANG ; HULIN QIAN ; CHUNHONG WANG ; JIALIN BAO

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
CN102690663 A	20120926	LSPB	+	published / reissued	
CN102690663 A	20120926	LSPB	+C06	PUBLICATION	
CN102690663 A	20140625	LSDW	-C02	DEEMED WITHDRAWAL OF PATENT APPLICATION AFTER PUBLICATION (PATENT LAW 2001)	
CN202688264 U	20130123	LSGT	+	granted / extensions (spc, cpc, pte)	
CN202688264 U	20130123	LSGT	+C14	GRANT OF PATENT OR UTILITY MODEL	
CN202688264 U	20220427	PEXP		Calculated Patent Term Expiry	

Title: SILICON CARBIDE BRICK FOR COKE DRY **QUENCHING OVEN** INCLINED CHANNEL

Abstract: The invention relates to a silicon carbide brick for a coke dry **quenching oven** inclined channel. The silicon carbide brick comprises the following raw materials by weight percentage: 46 percent -55 percent of alpha-SiC, 25 percent -40 percent of beta-SiC, 7 percent -15 percent of silicon micropowder, and 7 percent -9 percent of alumina superfine powder. By improving the material of a mullite brick for the inclined channel, the scheme improves the anti-erosion and anti-stripping performance, and then improves the service life. The scheme increases the service life of the coke dry **quenching oven** inclined channel from the original 1.5y to 5y or more.

Classifications:

International (IPC 8-9): C04B35/565 C04B35/66 C10B39/02 (Advanced/Invention)

Family:

Publication number	Publication date	Application number	Application date
CN109896859 A	20190618	CN201711311190	20171211

Priority:

CN201711311190 20171211

Probable Assignee: SHANGHAI MEISHAN IRON AND STEEL CO LTD

Assignee(s): (std): SHANGHAI MEISHAN IRON AND STEEL CO LTD

Assignee(s): SHANGHAI MEISHAN IRON AND STEEL CO

Inventor(s): (std): HONG JIANGUO

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
CN109896859 A	20190618	LSPB	+	published / reissued	
CN109896859 A	20190618	LSPB	PB01	PUBLICATION	

Title: DOUBLE ROOM NEGATIVE (OR LOW) PRESSURE HIGH FLOW RATE VACUUM AIR **QUENCH OVEN**

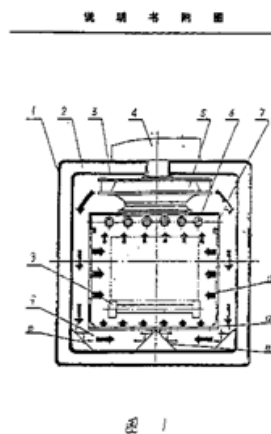
Abstract: The utility model relates to a double room negative (or low) pressure high flow rate vacuum air **quench oven**. The quenching cooling system of the utility model is mainly composed of an outer shell of a cooling chamber, an inner shell of the cooling chamber, cooling water, a blower fan, and a heat exchanger. The inner of the quenching cooling system is provided with a closed air flow channel which can make gas cycle in the closed air flow channel, and the inner of the closed air flow channel is provided with a guide plate for guiding gas flow direction and a gas flow distribution board with a series of holes on the top thereof to increase the circularity and the heat exchange property of the gas. The utility model has simple structure, and enhances the quenching ability of a vacuum air **quench oven** under the condition without increased aeration quantity, and the utility model can deal with high speed steel, stainless steel, elastic elements, and the workpieces requiring non-oxidation treatment of vacuum brazing, vacuum sintering, etc.

Classifications:

International (IPC 8-9): C21D9/00 F27B14/00 (Advanced/Invention);
C21D9/00 F27B14/00 (Core/Invention)

International (IPC 1-7): C21D9/00 F27B14/00

PatBase - CN2121668_U



Family:

Publication number	Publication date	Application number	Application date
CN2121668 U	19921111	CN19912031350U	19911220

Priority:

CN19912031350U 19911220

Probable Assignee: BEIJING MACHINE AND ELECTRONIC I

Assignee(s): (std): BEIJING MACHINE AND ELECTRONIC I ; BEIJING MACHINE AND ELECTRONIC INST MINISTRY OF M

Assignee(s): BEIJING MACHINE AND ELECTRONIC INST MINISTRY OF MA ; BEIJING MACHINE AND ELECTRONIC INST MINISTRY OF MACHINE BUILDING AND ELECTRONIC INDUSTRY

Inventor(s): (std): KEHUI HUA ; YI LIU ; YUSHUN DONG ; LIU YI ; HUA KEHUI ; DONG YUSHUN

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
CN2121668 U	19921111	LSPB	+	published / reissued	
CN2121668 U	19921111	LSPB	+C06	PUBLICATION	
CN2121668 U	19930630	LSGT	+C14	GRANT OF PATENT OR UTILITY MODEL	
CN2121668 U	19950201	LSLE	-C19	LAPSE OF PATENT RIGHT DUE TO NON-PAYMENT OF THE ANNUAL FEE	

Title: ROLLING BEARING

Abstract: An object of this invention is to provide a rolling bearing which is long enough in serve life even when it is applied with a lubricant mixed with foreign matters, simply by quenching or by carbonitriding it for a short period of time, and which can be formed at a relatively low manufacturing cost. A rolling bearing is formed as follows: The quantities of elements such as C, Si, Mn, Cr and Mo forming a bearing alloy steel, and the quantity of retained austenite are adjusted to be in predetermined ranges, and the steel is quenched and tempered or carbonitrided so that its hardness is in the following range: $-2.2 \times (\text{gamma R vol percent}) + 810 < / = H_v < / = -2.2 \times (\text{gamma R vol percent}) + 930$

Classifications:

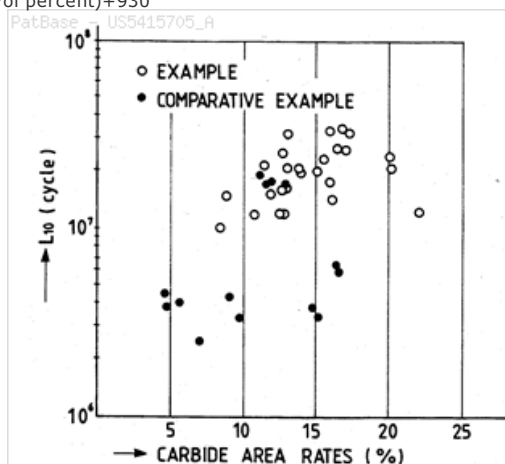
International (IPC 8-9): C21D9/36 C21D9/40 C22C38/00 C22C38/18 C22C38/22 F16C33/30 F16C33/32 F16C33/34 F16C33/62 (Advanced/Invention); C21D9/36 C21D9/40 C22C38/00 C22C38/18 C22C38/22 F16C33/30 F16C33/62 (Core/Invention)

International (IPC 1-7): C21D9/36 C21D9/40 C22C38/00 C22C38/18 C22C38/22 F16C33/32 F16C33/34 F16C33/62

CPC: Y10S148/906 Y10S384/912 C22C38/18 F16C33/30

European: C22C38/18 F16C33/30

US: 148/319 148/333 148/906 384/492 384/912



Family:

Publication number	Publication date	Application number	Application date
GB2268753 A1	19940119	GB19930013955	19930706
GB2268753 B2	19950927	GB19930013955	19930706
GB9313955 A0	19930818	GB19930013955	19930706
JP3232664 B2	20011126	JP19920181062	19920708
JP6025799 A2	19940201	JP19920181062	19920708
US5415705 A	19950516	US19930086858	19930707

Priority:

JP19920181062 19920708

Probable Assignee: NSK LTD

Assignee(s): (std): NIPPON SEIKO KK ; NSK LTD

Inventor(s): (std): FURUMURA KYOSABURO ; FURUMURA KYOZABURO ; NARAI HIROSHI ; WADA SHUJI

Inventor(s): SHUJI WADA ; KYOZABURO FURUMURA ; HIROSHI NARAI

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
GB2268753 A1	19940119	LSPB	+	published / reissued	
GB2268753 B2	19950927	LSGT	+	granted / extensions (spc, cpc, pte)	
GB2268753 B2	20090325	LSLE	-PCNP	PATENT CEASED THROUGH NON-PAYMENT OF RENEWAL FEE	EFFECTIVE DATE : 20080706
GB2268753 B2	20130706	PEXP		Calculated Patent Term Expiry	
JP3232664 B2	20011126	LSGT	+	granted / extensions (spc, cpc, pte)	
JP3232664 B2	20070628	LSFE	+FPAY	RENEWAL FEE PAYMENT (EVENT DATE IS RENEWAL DATE OF DATABASE)	YEAR OF FEE PAYMENT : 6
JP3232664 B2	20070703	LSFE	+FPAY	RENEWAL FEE PAYMENT (EVENT DATE IS RENEWAL DATE OF DATABASE)	YEAR OF FEE PAYMENT : 7
JP3232664 B2	20080703	LSFE	+FPAY	RENEWAL FEE PAYMENT (EVENT DATE IS RENEWAL DATE OF DATABASE)	YEAR OF FEE PAYMENT : 7

JP3232664 B2	20080708	LSFE	+FPAY	RENEWAL FEE PAYMENT (EVENT DATE IS RENEWAL DATE OF DATABASE)	YEAR OF FEE PAYMENT : 8
JP3232664 B2	20090630	LSFE	+FPAY	RENEWAL FEE PAYMENT (EVENT DATE IS RENEWAL DATE OF DATABASE)	YEAR OF FEE PAYMENT : 9
JP3232664 B2	20100921	LSLE	-LAPS	CANCELLATION BECAUSE OF NO PAYMENT OF ANNUAL FEES	
JP3232664 B2	20120708	PEXP		Calculated Patent Term Expiry	
JP6025799 A2	19940201	LSPB	+	published / reissued	
US5415705 A	19950516	LSGT	+	granted / extensions (spc, cpc, pte)	
US5415705 A	19930707	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : NSK, LTD., JAPAN OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:FURUMURA, KYOZABURO; NARAI, HIROSHI; WADA, SHUJI; REEL/FRAME:006614/0264 EFFECTIVE DATE : 19930628
US5415705 A	19950504	LSGT	PAT1	Patented Case	
US5415705 A	19981109	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US5415705 A	20021025	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US5415705 A	20061020	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 12
US5415705 A	20130707	PEXP		Calculated Patent Term Expiry	

Title: INORGANIC FILLER MATERIAL FOR TRANSPARENT LACQUER AND PREPARATION METHOD THEREOF

Abstract: The invention discloses an inorganic filler material for transparent lacquer. The inorganic filler material comprises the following chemical components in percentage by weight: 42-52 percent of SiO₂, 8.5-12 percent of Al₂O₃, 12-16 percent of CaO, 4-6 percent of K₂O, 0.5-5 percent of Na₂O, 16-19 percent of BaO and 2-5 percent of F. The preparation method disclosed by the invention comprises the steps of selecting K-feldspar, quartz, calcite, barium carbonate, fluorite, sodium fluoride and other industrial raw materials; melting at a high temperature according to a specific formula; carrying out water **quenching, oven** drying and ultrafine grinding to obtain ultrafine powder of which the particle size is 2-10μm. and preparing ultrafine powder into filler for a high-grade transparent lacquer. The organic transparent powder can be replaced by the filler disclosed by the invention, the solid content of the lacquer film is improved, the strength of the lacquer film is enhanced and the corrosion resistance and anti-aging properties of the lacquer film are also improved. The physical and chemical properties of the inorganic filler material are far superior to those of the transparent lacquer made from the organic transparent powder.

Classifications:

International (IPC 8-9): C09D175/04 C09D7/12 (Advanced/Invention)

Family:

Publication number	Publication date	Application number	Application date
CN104031460 A	20140910	CN201410294253	20140627
CN104031460 B	20150722	CN201410294253	20140627

Priority:

CN201410294253 20140627

Probable Assignee: WEIYUAN COUNTY DAHE CERAMIC MATERIALS CO LTD

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Inventor(s): (std): ZHANG JIAN ; HU ZHIMIN ; XIA GUJUN ; HUANG YONGFENG

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
CN104031460 A	20140910	LSPB	+	published / reissued	
CN104031460 A	20140910	LSPB	+C06	PUBLICATION	
CN104031460 A	20140910	LSPB	PB01	公开 (The publication of application)	TEXT : 公开 (DISCLOSURE)
CN104031460 A	20150701	LSAS	ASS	SUCCESSION OR ASSIGNMENT OF PATENT RIGHT	PARTYTYPE : OWNER OWNER : CHONGQING JINYI SILICON MATERIAL DEVELOPMENT CO., L EFFECTIVE DATE : 20150615
CN104031460 A	20150701	LSAS	C41	TRANSFER OF PATENT APPLICATION OR PATENT RIGHT OR UTILITY MODEL	
CN104031460 A	20150701	LSAS	TA01	专利申请权的转移 (Transfer of patent application right)	TEXT : 专利申请权、专利权的转移 (TRANSFER OF PATENT APPLICATION OR PATENT RIGHT) APPLICANT AFTER CHANGE : 威远县大禾陶瓷原料有限公司; 重庆市锦艺硅材料开发有限公司 (WEIYUAN COUNTY WO CERAMIC MATERIALS CO LTD; CHONGQING MUNICIPALITY KAM ARTS SILICON MATERIALS DEVELOPMENT CO LTD) APPLICANT BEFORE CHANGE : 威远县大禾陶瓷原料有限公司 (WEIYUAN COUNTY WO CERAMIC MATERIALS CO LTD) EFFECTIVE DATE : 20150615
CN104031460 B	20150722	LSGT	+	granted / extensions (spc, cpc, pte)	
CN104031460 B	20150722	LSGT	+C14	GRANT OF PATENT OR UTILITY MODEL	
CN104031460 B	20150722	LSGT	+GR01	授权 (The grant of patent right)	TEXT : 授权 (AUTHORIZATION)
CN104031460 B	20190924	LSAS	TR01	TRANSFER OF PATENT RIGHT	
CN104031460 B	20190924	LSAS	TR01	专利权的转移	TEXT : 专利申请权、专利权的转移 (TRANSFER

	(Transfer of patent right)	OF PATENT APPLICATION OR PATENT RIGHT) PATENTEE AFTER CHANGE : 威远县大禾陶瓷原料有限公司 (WEIYUAN COUNTY WO CERAMIC MATERIALS CO LTD) CO-PATENTEE AFTER CHANGE : 云阳县锦艺新材料科技有限公司 (CLOUD COUNTY JIN YI NEW MATERIAL TECHNOLOGY CO., LTD.) PATENTEE BEFORE CHANGE : 威远县大禾陶瓷原料有限公司 (WEIYUAN COUNTY WO CERAMIC MATERIALS CO LTD) CO-PATENTEE BEFORE CHANGE : 重庆市锦艺硅材料开发有限公司 (CHONGQING MUNICIPALITY KAM ARTS SILICON MATERIALS DEVELOPMENT CO LTD) EFFECTIVE DATE : 20190904
CN104031460 B 20340627	PEXP	Calculated Patent Term Expiry