

Search history

- Search 1: FT=(STEM~ AND TITE~ AND BLAST~ AND CONTROL~ AND PLUGS~) (Results 48)
- Search 2: ACCESSORIES FOR BURNING (Results 1)
- Search 3: Energy Plug (Results 56)
- Search 4: paraplug (Results 0)
- Search 5: blasting well (Results 22)

Title: Reversing valve in double-barrel **blasting well**

Abstract: The utility model discloses a reversing valve in a double-barrel **blasting well**, comprising an upper joint, an external operating cylinder and a central backflow pipe, wherein the reversing valve comprises a lower joint, an external pipe reversing hole, an internal pipe reversing hole, a steel ball and a ball valve holder. The lower joint can move up and down. The external pipe reversing hole is arranged in the lower joint; the internal pipe reversing hole is arranged on the wall of the central backflow pipe. The steel ball is located in the lower joint; the ball valve holder is arranged in the lower joint and located below the steel ball. The reversing valve in double-barreled **blasting well** is a new well-repairing craft matching device, which uses the reversing valve in the well to control the pressure of backflow liquid, thereby realizing the conversion from high pressure to low pressure; the sand-mulling liquid at the bottom of the well can be completely discharged from a well cylinder, thereby improving sand discharge effect, reducing loss and improving the actual effect of production in well repairing operation.

Classifications:

International (IPC 8-9): E21B21/10 (Advanced/Invention)

PatBase - CN202081844_U
CN 202081844 U 说明书附图 1/1页



Family:

Publication number	Publication date	Application number	Application date
 CN202081844 U	20111221	CN201020657567U	20101213

Priority:

CN201020657567U 20101213

Probable Assignee: LIAOHE PETROLEUM EXPLORATION

Assignee(s): (std): CHINA NAT PETROLEUM CORP ; CHINA NATIONAL PETROLEUM CORP ; LIAOHE OIL EXPLORATION BUREAU ; LIAOHE PETROLEUM EXPLORATION

Assignee(s): LIAOHE PETROLEUM EXPLORATION BUREAU

Inventor(s): (std): LING DONG ; CHANGSHENG SUO ; MINZHUO WANG ; ZHENGJUN ZHANG ; JIE YONG ; HONGQUAN XU ; ZHONGHUA ZHANG ; JIANZHONG HE ; CHAOWEI NIU ; YONG ZHANG ; SONGBAI XIONG ; YUANFANG LIU ; YANLI LI ; YANLI SHEN ; ENDONG GUAN

Inventor(s): ZHANG YONG ; YONG JIE ; GUAN ENDONG ; DONG LING ; LIU YUANFANG ; XU HONGQUAN ; HE JIANZHONG ; WANG MINZHUO ; LI YANLI ; ZHANG ZHENGJUN ; NIU CHAOWEI ; XIONG SONGBAI ; SHEN YANLI ; SUO CHANGSHENG ; ZHANG ZHONGHUA

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
CN202081844 U	20111221	LSGT	+	granted / extensions (spc, cpc, pte)	
CN202081844 U	20111221	LSGT	+C14	GRANT OF PATENT OR UTILITY MODEL	
CN202081844 U	20140212	LSLE	-C17	CESSATION OF PATENT RIGHT	
CN202081844 U	20201213	PEXP		Calculated Patent Term Expiry	

Title: METHOD FOR CONTROL OF AMPLITUDE-FREQUENCY SPECTRUM OF SHORT-DELAY BLASTING OF EXPLOSIVE CHARGES

Abstract: A method for control of amplitude-frequency spectrum of short-delay blasting of explosive charges includes the calculation of seismic-safe parameters of blasting operations with following well drilling, filling those with explosive substance and **blasting well** charges. Decrease of seismic effect of blast on protected object is achieved due to selection of ratio of masses of charges in group and delay interval at which due to interference of waves a shift of dominant frequencies of oscillatory process to zone of high or low frequencies with different amplitudes takes place.

Classifications:

International (IPC 8-9): E21F17/00 E21F3/00 (Core/Invention)

Family:

Publication number	Publication date	Application number	Application date
UA80183 U	20130513	UA20130001831U	20130214

Priority:

UA20130001831U 20130214

Probable Assignee: BOIKO VIKTOR VIKTOROVICH

Assignee(s): (std): BOIKO VIKTOR VIKTOROVICH ; REMEZ DMYTRO ANATOLIIOVYCH ; REMEZ NATALYA SERGIIVNA ; YASCHENKO YULIA SERHIIVNA

Inventor(s): (std): BOIKO VIKTOR VIKTOROVICH ; REMEZ DMYTRO ANATOLIIOVYCH ; REMEZ NATALYA SERGIIVNA ; YASCHENKO YULIA SERHIIVNA

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
UA80183 U	20130513	LSGT	+	granted / extensions (spc, cpc, pte)	
UA80183 U	20230214	PEXP		Calculated Patent Term Expiry	

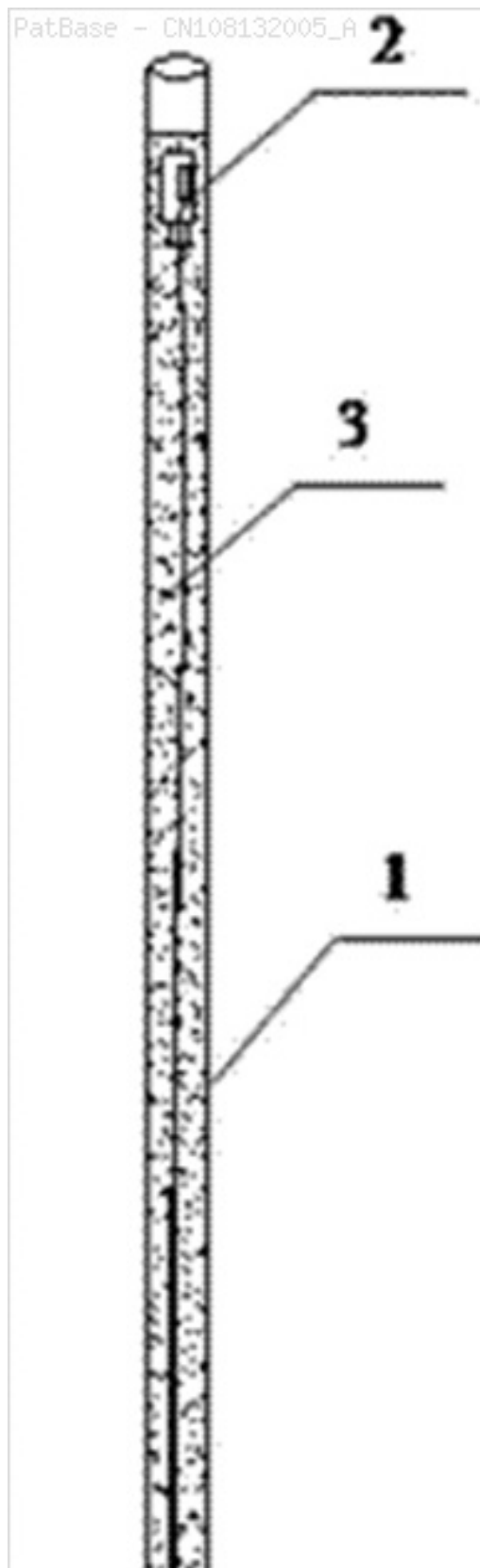
Title: UPWARD IN-HOLE MILLISECOND BLASTING METHOD OF MEDIUM-DEPTH HOLE

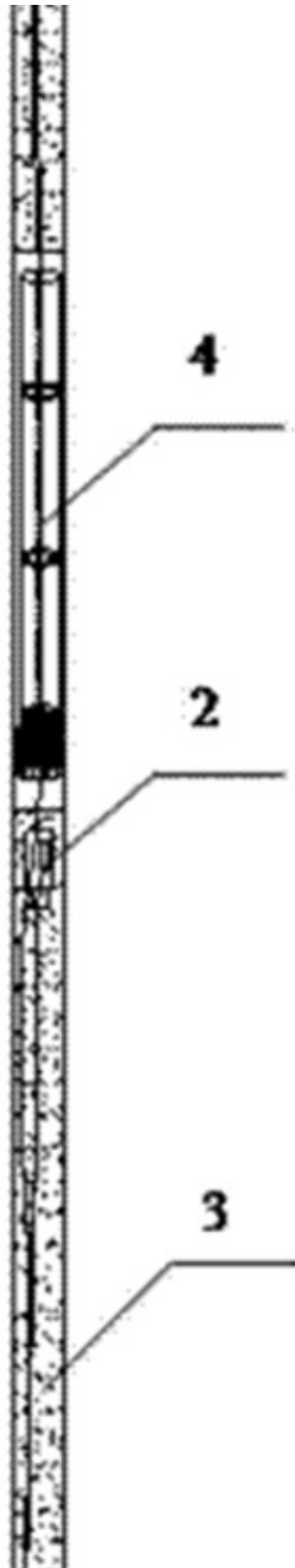
Abstract: The invention belongs to the technical field of metal mine, and particularly relates to an upward in-hole millisecond blasting method of a medium-depth hole. By distributing multiple sections of detonating bombs and bulky explosives in the bomb hole, by means of the method of controlling multi-section blasting through a bomb hole separating device 4, the technical problem of upward bomb hole in-hole millisecond blasting in medium-depth hole blasting work in a mine well is solved; by means of the method, the upward explosive-loaded in-hole millisecond blasting of the medium-depth hole can be realized; in the one-time **blasting well** forming of the medium-depth hole, explosive loading efficiency is improved, the blasting effect is ensured, and the **blasting well** forcing success is ensured.

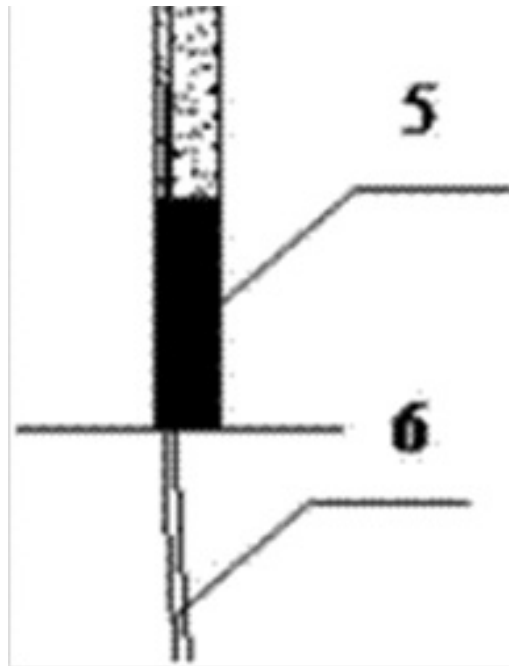
Classifications:

International (IPC 8-9): E21C37/00 F42D1/00 F42D1/08 F42D1/22 F42D3/04 (Advanced/Invention)

CPC: F42D1/00 E21C37/00 F42D1/08 F42D1/22 F42D3/04







Family:

Publication number	Publication date	Application number	Application date
 CN108132005 A	20180608	CN201711312207	20171207

Priority:

CN201711312207 20171207

Probable Assignee: CHANGCHUN GOLD RES INST

Assignee(s): (std): CHANGCHUN GOLD RES INST

Assignee(s): CHANGCHUN GOLD RESEARCH INST

Inventor(s): (std): WANG ZHIGUO ; JIANG YONGHENG ; LI CHENGHONG ; SONG SHISHENG ; MIN ZHONGPENG ; REN YUDONG ; TANG XUEYI

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
CN108132005 A	20180608	LSPB	+	published / reissued	
CN108132005 A	20180608	LSPB	PB01	PUBLICATION	

Title: Folding air bag door structure

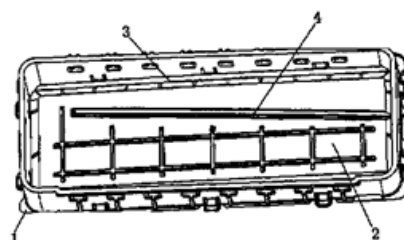
Abstract: The utility model discloses a folding air bag door structure which comprises an air bag door cover plate (2). The air bag door cover plate is connected with a dashboard framework (1) in a clamping mode. The folding air bag door structure is characterized in that a tearing weakening trough (3) is arranged at the edge of the air bag door cover plate (2) and the back of the air bag door cover plate (2); a folding weakening trough (4) is arranged in the middle of the air bag door cover plate (2); and the tear weakening trough (3) is firstly opened when the air bag is opened during the blasting process of the air bag, and the air bag is folded at the folding weakening trough (4) after being opened, thereby protecting the safety of passengers on the copilot seat and achieving the purpose of protecting the passengers. The folding air bag door structure has the advantages of simple structure and easy realization, not only can ensure wholly attractive appearance when being used in a car, but also can meet the requirement of collision of the air bag with the head when **blasting, well** protects the passengers, and can better meet the safety requirements of vehicles compared with the common structure.

Classifications:

International (IPC 8-9): B60R21/205 B60R21/215 (Advanced/Invention)

PatBase - CN201712569_U

说明书附图 1/1页



Family:

Publication number	Publication date	Application number	Application date
■ CN201712569 U	20110119	CN201020243233U	20100630

Priority:

CN201020243233U 20100630

Probable Assignee: CHANGSHU INTIER AUTOMOTIVE INTERIORS CO LTD

Assignee(s): (std): CHANGSHU INTIER AUTOMOTIVE INTERIORS CO LTD

Assignee(s): CHANGSHU INTIER AUTOMOTIVE INTERIORS CO

Inventor(s): (std): ZHENGMING XU ; QI CHEN ; JIANBING TAO

Inventor(s): CHEN QI ; XU ZHENGMING ; TAO JIANBING

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
CN201712569 U	20110119	LSGT	+	granted / extensions (spc, cpc, pte)	
CN201712569 U	20110119	LSGT	+C14	GRANT OF PATENT OR UTILITY MODEL	
CN201712569 U	20160420	LSAS	C56	CHANGE IN THE NAME OR ADDRESS OF THE PATENTEE	
CN201712569 U	20200630	PEXP		Calculated Patent Term Expiry	

Title: HOLLOW CHARGE LINERS MADE OF POWDER METAL MIXTURES

Abstract: The invention relates to inserts for hollow shots made of cold pressed powder mixtures, which can, for instance be used in the oil and gas extraction industries in well blasting.

Classifications:

International (IPC 8-9): B22F3/02 E21B7/00 F42B1/032 (Advanced/Invention);
B22F3/02 E21B7/00 F42B1/00 (Core/Invention)

International (IPC 1-7): F42B1/032 F42B1/032

CPC: F42B1/032

European: F42B1/032

US: 102/309 175/57 419/66

Family:

Publication number	Publication date	Application number	Application date
AR051712 AA	20070131	AR2005P105186	20051212
CA2590052 AA	20070611	CA20052590052	20051212
DE102005059934 A1	20060824	DE200510059934	20051213
EP1828708 A1	20070905	EP20050825529	20051212
NO20072889 A	20070904	NO20070002889	20070606
NO20072889 L	20070904	NO20070002889	20070606
US2009294176 AA	20091203	US20050721384	20051212
WO06063753 A1	20060622	WO2005EP13283	20051212

Priority:

DE200410060136 20041213 DE200510002816 20050120 DE200510011190 20050309
WO2005EP13283 20051212 DE200510059934 20051213

Probable Assignee: DYNAENERGETICS GMBH AND CO KG

Assignee(s): (std): DYNAENERGETICS GMBH AND CO KG ; GESSEL UWE ; MCNELIS LIAM ; VEEHMAYER MALTE

Inventor(s): (std): GESSEL UWE ; MCNELIS LIAM ; VEEHMAYER MALTE

Agent(s): ROBIC; ANTONELLI TERRY STOUT AND KRAUS LLP

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

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Patent	Date recorded	Event group	Code	Event	Details
AR051712 AA	20070131	LSPB	+	published / reissued	
AR051712 AA	20090123	LSGT	+FG	GRANT, REGISTRATION	
CA2590052 AA	20070611	LSPB	+	published / reissued	
CA2590052 AA	20111212	LSLE	-FZDE	DEAD	
DE102005059934 A1	20060824	LSPB	+	published / reissued	
DE102005059934 A1	20111222	LSDW	-R119	APPLICATION DEEMED WITHDRAWN, OR IP RIGHT LAPSED, DUE TO NON-PAYMENT OF RENEWAL FEE	EFFECTIVE DATE : 20110701
EP1828708 A1	20070905	LSPB	+	published / reissued	
EP1828708 A1	20070905	LSSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 20070713
EP1828708 A1	20091021	LSSES	+17Q	FIRST EXAMINATION REPORT DESPATCHED	EFFECTIVE DATE : 20090922
EP1828708 A1	20100929	LSDW	-18D	APPLICATION DEEMED TO BE WITHDRAWN	EFFECTIVE DATE : 20100407
NO20072889 A	20070904	LSPB	+	published / reissued	
NO20072889 A	20110725	LSRV	-FC2A	WITHDRAWAL, REJECTION OR DISMISSAL OF LAID OPEN PATENT APPLICATION	
US2009294176 AA	20091203	LSPB	+	published / reissued	
US2009294176 AA	20120406	LSWD	-ABD3	Abandoned -- Failure to Respond to an Office Action	
US2009294176 AA	20120406	LSWD	-STCB	INFORMATION ON STATUS: APPLICATION	TEXT : ABANDONED -- FAILURE TO RESPOND

DISCONTINUATION					TO AN OFFICE ACTION
WO06063753 A1	20060622	LSPB	+	published / reissued	
WO06063753 A1	20070611	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 2590052 COUNTRY OF REF DOCUMENT : CA
WO06063753 A1	20070614	LSNE	NENP	NON-ENTRY INTO THE NATIONAL PHASE IN:	REF COUNTRY CODE : DE
WO06063753 A1	20070704	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 2005825529 COUNTRY OF REF DOCUMENT : EP
WO06063753 A1	20070905	LSPB	+WWP	WIPO INFORMATION: PUBLISHED IN NATIONAL OFFICE	REF DOCUMENT NUMBER : 2005825529 COUNTRY OF REF DOCUMENT : EP
WO06063753 A1	20090729	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 11721384 COUNTRY OF REF DOCUMENT : US

Title: Conical plug for sealing blastholes in open cut mining

Abstract: A conical plug for sealing a blast hole in the earth is provided. The plug is made from a generally circular sheet of elastic material such as plastic or metal and can be folded and releasably locked with a trigger into a conical shape. When in its conical shape, the plug is lowered into a blast hole and, when in position, a release weight is slid down the lowering cable to impact and release the trigger. When the trigger is released, the plug expands and is wedged against the sides of the blast hole forming a plug capable of supporting debris in the upper portion of the blast hole.

Classifications:

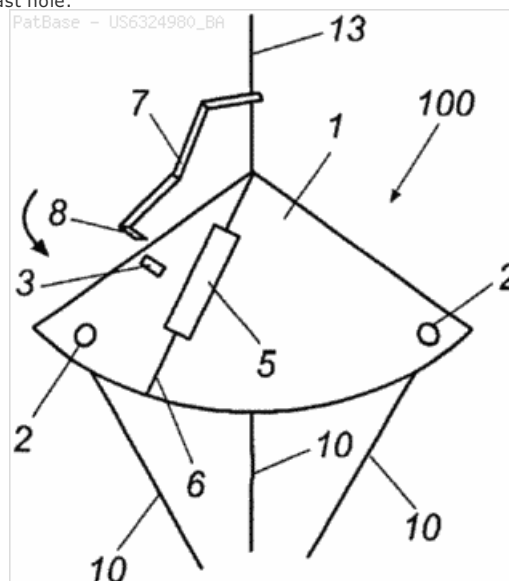
International (IPC 8-9): F42D1/18 (Advanced/Invention)

International (IPC 1-7): F42B3/00

CPC: F42D1/18

European: F42D1/18

US: 102/313 102/333



Family:

Publication number	Publication date	Application number	Application date
US6324980 BA	20011204	US19990281853	19990331

Priority:

VE19980000982 19980508

Probable Assignee: SEAGATE TECHNOLOGY PLC

Assignee(s): BIANCHINI CESAR ESTEVEZ ; SEAGATE TECHNOLOGY INC ; SEAGATE TECHNOLOGY PLC

Inventor(s): (std): BIANCHINI CESAR ESTEVEZ

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
US6324980 BA	20011204	LSGT	+	granted / extensions (spc, cpc, pte)	
US6324980 BA	19990625	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : SEAGATE TECHNOLOGY, INC, CALIFORNIA OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:WILDE, JEFFREY P.; TSELIKOV, ALEXANDER; IZRAELIAN, VIATCHESLAV; AND OTHERS; REEL/FRAME:010055/0149 EFFECTIVE DATE : 19990512
US6324980 BA	20051201	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US6324980 BA	20091204	LSRE	+REIN	REINSTATEMENT AFTER MAINTENANCE FEE PAYMENT CONFIRMED	
US6324980 BA	20100126	LSLE	-FP	EXPIRED DUE TO FAILURE TO PAY MAINTENANCE FEE	EFFECTIVE DATE : 20091204
US6324980 BA	20100127	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US6324980 BA	20100301	LSGT	PAT1	Patented Case	

US6324980 BA	20100301	LSRE	+PRDP	PATENT REINSTATED DUE TO THE ACCEPTANCE OF A LATE MAINTENANCE FEE	EFFECTIVE DATE : 20100301
US6324980 BA	20100301	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US6324980 BA	20130604	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 12
US6324980 BA	20190331	PEXP		Calculated Patent Term Expiry	

Title: METHOD FOR DECREASE OF SEISMIC EFFECT OF EXPLOSION ON THE OBJECTS

Abstract: A method for decrease of seismic effect of explosion on objects includes calculation of seismo-safe parameters of blast operations with following well drilling, with filling those with explosive and **blasting well** charges. Distances between the charges are determined on the basis of superposition of seismic explosion waves taking into account physical-mechanical properties of rocks, detonation characteristics of explosives and geometrical parameters of well charges, this is realized by means of software.

Classifications:

International (IPC 8-9): E21C37/00 (Core/Invention)

Family:

Publication number	Publication date	Application number	Application date
UA74530 U	20121025	UA20120100532U	20120906

Priority:

UA20120100532U 20120906

Probable Assignee: REMEZ DMYTRO ANATOLIIOVYCH

Assignee(s): (std): REMEZ DMYTRO ANATOLIIOVYCH ; REMEZ NATALIA SERHIIVNA ; YASCHENKO YULIA SERHIIVNA

Inventor(s): (std): REMEZ DMYTRO ANATOLIIOVYCH ; REMEZ NATALIA SERHIIVNA ; YASCHENKO YULIA SERHIIVNA

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
UA74530 U	20121025	LSGT	+	granted / extensions (spc, cpc, pte)	
UA74530 U	20220906	PEXP		Calculated Patent Term Expiry	

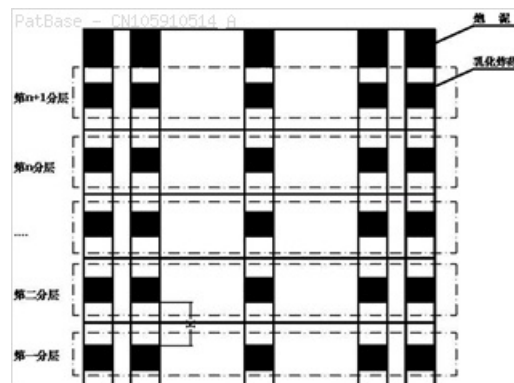
Title: METHOD FOR WELL COMPLETION THROUGH PRE-PUNCHING SUBSECTION MILLISECOND ONCE BLASTING

Abstract: The invention belongs to the technical field of mining blasting, and specifically relates to a method for well completion through pre-punching subsection millisecond once blasting. The method is suitable for tunneling vertical raises, the depths of which are less than 30m and the diameters of which are 2-4m, from the ground to the lower hollow areas. The method comprises the following steps: downwardly drilling a vertical drill hole with a diameter of 250mm at a center position by using a down-the-hole drill; arranging 8 peripheral holes with diameters of 90mm along the 0-degree, 45-degree, 90-degree, 135-degree, 180-degree, 225-degree, 270-degree and 315-degree directions of a center hole; realizing layered once **blasting well** completion through a millisecond blasting method.

Classifications:

International (IPC 8-9): F42D1/00 F42D3/00 (Advanced/Invention)

CPC: F42D1/00 F42D3/00



Family:

Publication number	Publication date	Application number	Application date
 CN105910514 A	20160831	CN201610252633	20160421

Priority:

CN201610252633 20160421

Probable Assignee: NORTHWEST RES INST MINING AND METALLURGY INST

Assignee(s): (std): NORTHWEST RES INST MINING AND METALLURGY INST ; NORTHWEST RES INST OF MINING AND METALLURGY INST

Assignee(s): NORTHWEST RESEARCH INST OF MINING AND METALLURGY INST

Inventor(s): (std): LIU WUTUAN ; MENG HUIMEI ; LIU TAO ; LEI MINGLI ; ZHANG RUI ; CHEN XIAOPING ; JIAO MANDAI ; YAN WENBING ; ZHANG HAILEI ; CHAI HENGSHAN

Legal status (INPADOC)

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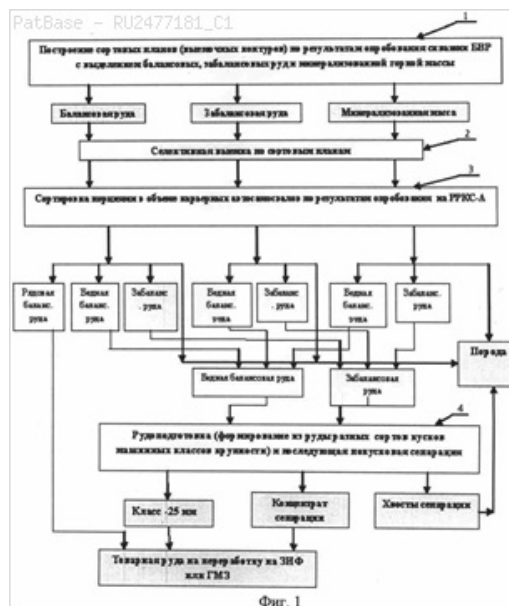
Patent	Date recorded	Event group	Code	Event	Details
CN105910514 A	20160831	LSPB	+	published / reissued	
CN105910514 A	20160831	LSPB	+C06	PUBLICATION	
CN105910514 A	20181123	LSRV	-RJ01	REJECTION OF INVENTION PATENT APPLICATION AFTER PUBLICATION	

Title: METHOD OF PRELIMINARY CONCENTRATION OF MINED ROCK IN QUARRY OPERATION AT LEDGE GOLD DEPOSITS

Abstract: FIELD: process engineering. SUBSTANCE: invention relates to concentration of minerals and may be used for sorting gold-bearing mined rock at gold-mining plants. Proposed method comprises making portions of mined rock, estimating its quality in said portions and their addressing by classification rules. Mined rock portion addressing is performed by gold content defined by equations of gold correlation with separation symbol. For this, magnitude of separation symbol is defined in every portion while, in mining, ores are subjected to advance certification by **blasting well** slime to refine outlines of different-quality ores. Grade plans of gold distribution are worked out for ore of blocks prepared for processing by magnitude of separation symbol. Objects of grading are defined to effect selective sampling of ore in dump trucks and products of lump separation. Equations of gold correlation with separation symbol for large-portion grading and lump separation are corrected. Ore is selectively excavated to perform lathe-portion grading of mined rock in transport flow by gamma-activation or X-ray radiometric method. Ore lump separation is performed by X-ray radiometric or photometric method. EFFECT: higher efficiency of concentration and gold yield. 4 cl, 1 dwg, 2 ex

Classifications:

International (IPC 8-9): B03B13/00 (Advanced/Invention)



Family:

Publication number	Publication date	Application number	Application date
RU2477181 C1	20130310	RU20110142203	20111018

Priority:

RU20110142203 20111018

Probable Assignee: VEDUSHCHIY PIZ I NII PROMY T OAO VNIPIROMTEKHNOLOGII AOOT

Assignee(s): (std): VEDUSHCHIY PIZ I NII PROMY T OAO VNIPIROMTEKHNOLOGII AOOT

Assignee(s): OTKRYTOE AKTSIONERNOE OBSHCHESTVO VEDUSHCHIY PROEKTNO IZYSKATEL SKIJ I NAUCHNO ISSLEDOVATEL SKIJ INST PROMYSHLENNOJ TEKHNOLOGII OAO VNIPIROMTEKHNOLOGII

Inventor(s): (std): EREMIN ANATOLIY MIKHAYLOVICH ; FILIPPOV SERGEJ ALEKSANDROVICH ; KAMNEV EVGENIJ NIKOLAEVICH ; KASATKIN VLADIMIR VIKTOROVICH ; LATYSHEV VALENTIN EGOROVICH ; LOBANOV NIKOLAJ FEDOROVICH ; POTAPOV VLADIMIR ALEKSANDROVICH ; SYTENKOV VIKTOR NIKOLAEVICH

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
RU2477181 C1	20130310	LSGT	+	granted / extensions (spc, cpc, pte)	
RU2477181 C1	20150610	LSAS	PD4A	CORRECTION OF NAME OF PATENT OWNER	
RU2477181 C1	20311018	PEXP		Calculated Patent Term Expiry	

Abstract: An object of the invention is to provide a film of an yttria-alumina complex oxide having a high peel strength of the film to a substrate. A mixed powder of powdery materials of yttria and alumina is sprayed on a substrate to form a sprayed film made of an yttria-alumina complex oxide. Preferably, the powdery material of yttria has a 50 percent mean particle diameter of not smaller than 0.1 μm and not larger than 100 μm , and the powdery material of alumina has a 50 percent mean particle diameter of not smaller than 0.1 μm and not larger than 100 μm . Preferably, the yttria-alumina complex oxide contains at least garnet phase, and may further contain perovskite phase.

International (IPC 8-9): B32B9/00 C01F17/00 C23C4/10 C23C4/18
H01L21/205 (Advanced/Invention);
C23C4/10 (Advanced/Non-invention)

CPC: Y10T428/25 Y10T428/26 Y10T428/249953 C23C4/11

US: 427/18 427/180 427/180S 427/372.2 427/372.200S 427/421 427/427
427/427S 428/304.4 428/304.400S 428/323 428/332 428/332S 428/697
428/697S 428/699 428/701 428/702 428/702P 501/10 501/152 501/153



Publication number	Publication date	Application number	Application date
DE60222341 D1	20071025	DE20026022341	20020716
DE60222341 D1	20071025	DE20026022341T	20020716
DE60222341 T2	20080619	DE20026022341T	20020716
EP1277850 A2	20030122	EP20020255011	20020716
EP1277850 A3	20031112	EP20020255011	20020716
EP1277850 B1	20070912	EP20020255011	20020716
JP2003095649 A2	20030403	JP20020180769	20020621
JP4277973 B2	20090610	JP20020180769	20020621
KR100489172 B1	20050517	KR20020041895	20020718
KR20030009186 A	20030129	KR20020041895	20020718
TWI232174 B	20050511	TW20020114037	20020626
US2003059653 AA	20030327	US20020197037	20020717
US2004067392 AA	20040408	US20030633906	20030804
US6641941 BB	20031104	US20020197037	20020717
US7138192 BB	20061121	US20030633906	20030804

JP20010219092 20010719 JP20020180769 20020621 US20020197037 20020717
US20030633906 20030804

Designated states: AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LI LU MC NL PT SE SK TR

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Patent	Date recorded	Event group	Code	Event	Details
DE60222341 D1	20081002	LSGT	+8364	NO OPPOSITION DURING TERM OF OPPOSITION	
DE60222341 D1	20081002	LSGT	+8364	NO OPPOSITION DURING TERM OF OPPOSITION	
DE60222341 T2	20080619	LSGT	+	granted / extensions (spc, cpc, pte)	
DE60222341 T2	20081002	LSGT	+8364	NO OPPOSITION DURING TERM OF OPPOSITION	
DE60222341 T2	20220716	PEXP		Calculated Patent Term Expiry	
EP1277850 A2	20030122	LSPB	+	published / reissued	
EP1277850 A2	20031029	LSRE	RIC1	INFORMATION PROVIDED ON IPC CODE ASSIGNED BEFORE GRANT	CLASSIFICATIONSCHEME : IPC CLASSIFICATIONSYMBOL : 7C 23C 4/18 B
EP1277850 A2	20031029	LSRE	RIC1	INFORMATION PROVIDED ON IPC CODE ASSIGNED BEFORE GRANT	CLASSIFICATIONSCHEME : IPC CLASSIFICATIONSYMBOL : 7C 23C 4/10 A
EP1277850 A2	20160831	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : FR PAYMENT DATE : 20160613 YEAR OF FEE PAYMENT : 15
EP1277850 A2	20161031	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DE PAYMENT DATE : 20160712 YEAR OF FEE PAYMENT : 15
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EP1277850 A3	20040804	LSFE	+AKX	DESIGNATION FEES PAID	COUNTRY OF REF DOCUMENT : DE COUNTRY OF REF DOCUMENT : FR COUNTRY OF REF DOCUMENT : GB
EP1277850 A3	20070117	LSRE	RT11	TITLE (CORRECTION)	TEXT : SPRAYED FILM OF YTTRIA-ALUMINA COMPLEX OXIDE
EP1277850 B1	20070912	LSGT	+	granted / extensions (spc, cpc, pte)	
EP1277850 B1	20070912	LSGT	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : GB REF LEGAL EVENT CODE : FG4D
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EP1277850 B1	20160613	LSFE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : FR REF LEGAL EVENT CODE : PLFP YEAR OF FEE PAYMENT : 15
EP1277850 B1	20170613	LSFE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : FR REF LEGAL EVENT CODE : PLFP YEAR OF FEE PAYMENT : 16
EP1277850 B1	20170731	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : FR PAYMENT DATE : 20170613 YEAR OF FEE PAYMENT : 16
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EP1277850 B1	20171031	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DE PAYMENT DATE : 20170711 YEAR OF FEE PAYMENT : 16
EP1277850 B1	20180612	LSFE	REG	REFERENCE TO A	REF COUNTRY CODE : FR

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EP1277850 B1	20180831	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : FR PAYMENT DATE : 20180612 YEAR OF FEE PAYMENT : 17
EP1277850 B1	20181031	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DE PAYMENT DATE : 20180703 YEAR OF FEE PAYMENT : 17
EP1277850 B1	20181130	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : GB PAYMENT DATE : 20180711 YEAR OF FEE PAYMENT : 17
EP1277850 B1	20220716	PEXP		Calculated Patent Term Expiry	
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JP2003095649 A2	20080702	LSES	-A131	NOTIFICATION OF REASONS FOR REFUSAL	TEXT : JAPANESE INTERMEDIATE CODE: A131 EFFECTIVE DATE : 20080701
JP2003095649 A2	20080812	LSRE	A521	WRITTEN AMENDMENT	TEXT : JAPANESE INTERMEDIATE CODE: A523 EFFECTIVE DATE : 20080811
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JP2003095649 A2	20090305	LSGT	+A01	WRITTEN DECISION TO GRANT A PATENT OR TO GRANT A REGISTRATION (UTILITY MODEL)	TEXT : JAPANESE INTERMEDIATE CODE: A01 EFFECTIVE DATE : 20090304
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JP2003095649 A2	20090319	LSFE	+A61	FIRST PAYMENT OF ANNUAL FEES (DURING GRANT PROCEDURE)	TEXT : JAPANESE INTERMEDIATE CODE: A61 EFFECTIVE DATE : 20090304
JP2003095649 A2	20090319	LSFE	+FPAY	RENEWAL FEE PAYMENT (EVENT DATE IS RENEWAL DATE OF DATABASE)	YEAR OF FEE PAYMENT : 3
JP2003095649 A2	20090319	LSGT	+R150	CERTIFICATE OF PATENT OR REGISTRATION OF UTILITY MODEL	TEXT : JAPANESE INTERMEDIATE CODE: R150
JP4277973 B2	20090610	LSGT	+	granted / extensions (spc, cpc, pte)	
JP4277973 B2	20090317	LSFE	R100	特許料納付書 Patent fee payment form	
JP4277973 B2	20120126	LSFE	R20	特許料納付書 Patent fee payment form	
JP4277973 B2	20120131	LSFE	+FPAY	RENEWAL FEE PAYMENT (EVENT DATE IS RENEWAL DATE OF DATABASE)	YEAR OF FEE PAYMENT : 4
JP4277973 B2	20130124	LSFE	R20	特許料納付書 Patent fee payment form	
JP4277973 B2	20130129	LSFE	+FPAY	RENEWAL FEE PAYMENT (EVENT DATE IS RENEWAL DATE OF DATABASE)	YEAR OF FEE PAYMENT : 5
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JP4277973 B2	20140204	LSFE	R2501	年金領収書 (一括) Pension receipt (bulk)	
JP4277973 B2	20150122	LSFE	R20	特許料納付書 Patent fee payment form	

JP4277973 B2	20150127	LSFE	R2501	年金領収書 (一括) Pension receipt (bulk)	
JP4277973 B2	20160121	LSFE	R20	特許料納付書 Patent fee payment form	
JP4277973 B2	20160126	LSFE	R2501	年金領収書 (一括) Pension receipt (bulk)	
JP4277973 B2	20170216	LSFE	R20	特許料納付書 Patent fee payment form	
JP4277973 B2	20170221	LSFE	R2501	年金領収書 (一括) Pension receipt (bulk)	
JP4277973 B2	20180222	LSFE	R20	特許料納付書 Patent fee payment form	
JP4277973 B2	20180227	LSFE	R2501	年金領収書 (一括) Pension receipt (bulk)	
JP4277973 B2	20190221	LSFE	R20	特許料納付書 Patent fee payment form	
JP4277973 B2	20190226	LSFE	R2501	年金領収書 (一括) Pension receipt (bulk)	
JP4277973 B2	20220621	PEXP		Calculated Patent Term Expiry	
KR100489172 B1	20050517	LSGT	+	granted / extensions (spc, cpc, pte)	
KR100489172 B1	20020718	LSSES	A201	REQUEST FOR EXAMINATION	
KR100489172 B1	20130502	LSFE	FPAY	ANNUAL FEE PAYMENT	PAYMENT DATE : 20130502 YEAR OF FEE PAYMENT : 9
KR100489172 B1	20140418	LSFE	FPAY	ANNUAL FEE PAYMENT	PAYMENT DATE : 20140418 YEAR OF FEE PAYMENT : 10
KR100489172 B1	20150416	LSFE	FPAY	ANNUAL FEE PAYMENT	PAYMENT DATE : 20150416 YEAR OF FEE PAYMENT : 11
KR100489172 B1	20160418	LSFE	FPAY	ANNUAL FEE PAYMENT	PAYMENT DATE : 20160418 YEAR OF FEE PAYMENT : 12
KR100489172 B1	20170330	LSFE	FPAY	ANNUAL FEE PAYMENT	PAYMENT DATE : 20170330 YEAR OF FEE PAYMENT : 13
KR100489172 B1	20180418	LSFE	FPAY	ANNUAL FEE PAYMENT	PAYMENT DATE : 20180418 YEAR OF FEE PAYMENT : 14
KR100489172 B1	20190418	LSFE	FPAY	ANNUAL FEE PAYMENT	PAYMENT DATE : 20190418 YEAR OF FEE PAYMENT : 15
KR100489172 B1	20220718	PEXP		Calculated Patent Term Expiry	
KR20030009186 A	20030129	LSPB	+	published / reissued	
KR20030009186 A	20041123	LSSES	-E902	NOTIFICATION OF REASON FOR REFUSAL	
KR20030009186 A	20050331	LSGT	+E701	DECISION TO GRANT OR REGISTRATION OF PATENT RIGHT	
KR20030009186 A	20050503	LSGT	+GRNT	WRITTEN DECISION TO GRANT	
TWI232174 B	20050511	LSGT	+	granted / extensions (spc, cpc, pte)	
TWI232174 B	20220626	PEXP		Calculated Patent Term Expiry	
US2003059653 AA	20030327	LSPB	+	published / reissued	
US2003059653 AA	20031016	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
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US2004067392 AA	20061101	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US6641941 BB	20031104	LSGT	+	granted / extensions (spc, cpc, pte)	
US6641941 BB	20020717	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : NGK INSULATORS, LTD.,

JAPAN
 OLD PARTY : ASSIGNMENT OF
 ASSIGNORS INTEREST;
 ASSIGNORS:YAMADA, HIROTAKA;
 OHASHI, TSUNEAKI;
 REEL/FRAME:013113/0762
 EFFECTIVE DATE : 20020704

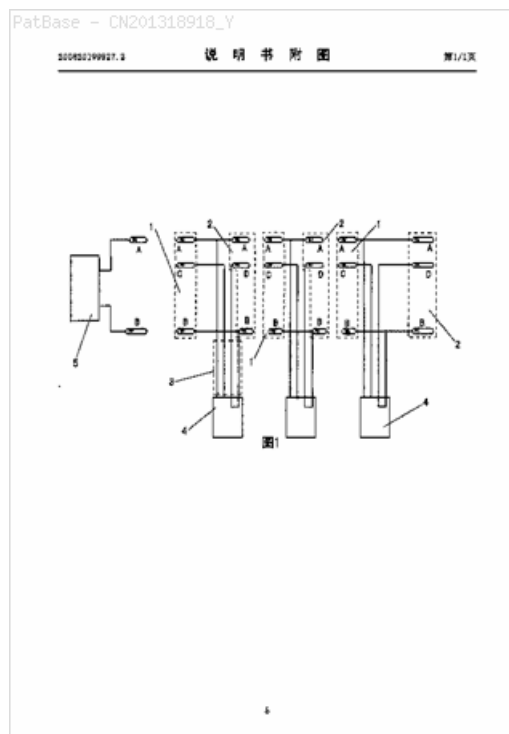
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US6641941 BB	20040302	LSRE	CC	CERTIFICATE OF CORRECTION	
US6641941 BB	20070320	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US6641941 BB	20110422	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US6641941 BB	20150422	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 12
US6641941 BB	20220717	PEXP		Calculated Patent Term Expiry	
US7138192 BB	20061121	LSGT	+	granted / extensions (spc, cpc, pte)	
US7138192 BB	20061101	LSGT	PAT1	Patented Case	
US7138192 BB	20070206	LSRE	CC	CERTIFICATE OF CORRECTION	
US7138192 BB	20100422	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US7138192 BB	20140423	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US7138192 BB	20180510	LSFE	+MAFP	MAINTENANCE FEE PAYMENT	YEAR OF FEE PAYMENT : 12
US7138192 BB	20241018	PEXP		Calculated Patent Term Expiry (PTA 441 days)	

Title: Detonation propagation connecting line

Abstract: The utility model relates to a detonation propagation connecting line for electronic detonators, which belongs to an electronic product in the blasting industry. The detonation propagation connecting line comprises front-end connecting parts, rear-end connecting parts and detonation propagation parts, which are connected together; wherein, anodes, cathodes and trigger electrodes are arranged in both the front-end connecting part and the rear-end connecting part of each detonation propagation connecting line unit; the rear-end connecting part of the previous unit is connected with the corresponding electrodes of the front-end connecting part of the next unit; the trigger electrode of the front-end connecting part is connected with the on-off control end of the current circuit of the local unit; and the detonation propagation parts are connected with the electronic detonators. The utility model can extend the function of the delayed electronic detonator product in medium-length hole blasting and has an auxiliary connection function, so that the electronic detonator product can meet the requirement of the development of hole-by-hole or row-by-row initiating in medium-length hole **blasting well**.

Classifications:

International (IPC 8-9): F42D1/055 (Advanced/Invention);
F42D1/00 (Core/Invention)



Family:

Publication number	Publication date	Application number	Application date
CN201318918 Y	20090930	CN200820199927U	20081030

Priority:

CN200820199927U 20081030

Probable Assignee:

FUDONG YANG

Assignee(s): (std):

FUDONG YANG

Assignee(s):

YANG FUDONG

Inventor(s): (std):

FUDONG YANG

Inventor(s):

YANG FUDONG

Legal status (INPADOC)

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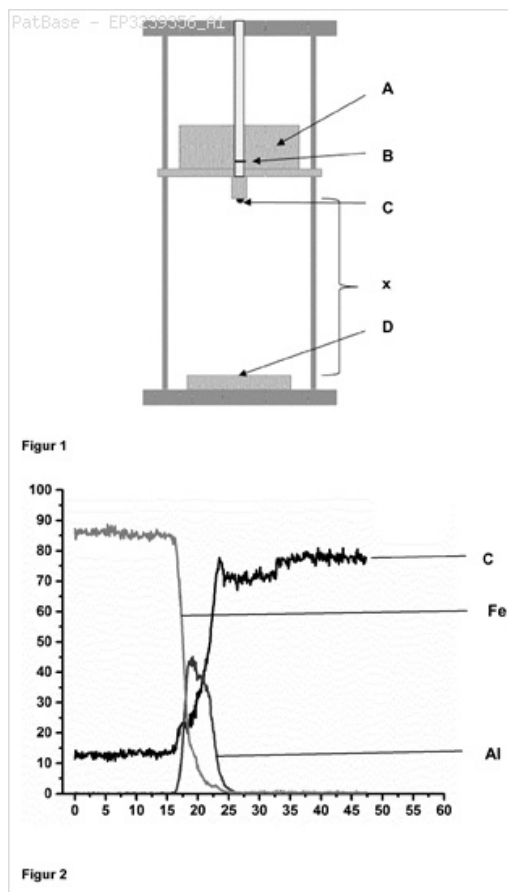
Patent	Date recorded	Event group	Code	Event	Details
CN201318918 Y	20090930	LSGT	+	granted / extensions (spc, cpc, pte)	
CN201318918 Y	20090930	LSGT	+C14	GRANT OF PATENT OR UTILITY MODEL	
CN201318918 Y	20121226	LSLE	-C17	CESSATION OF PATENT RIGHT	
CN201318918 Y	20181030	PEXP		Calculated Patent Term Expiry	

Title: METHOD FOR SURFACE MODIFICATION OF SHAPED METALLIC BODIES WITH HARD PARTICLE CONTAINING TRANSMISSION MEDIUM PROCEDE DE MODIFICATION DE SURFACE DE CORPS DE MOULAGE METALLIQUE AVEC SUPPORT DE TRANSMISSION CONTENANT DES PARTICULES D

Abstract: Source: EP3239356A1 [DE] uebertragungsmedium umfassend einen flaechigen Traeger und eine einseitig darauf aufgebraachte Beschichtung, wobei die Beschichtung Hartstoffpartikel in einem Bindemittel enthaelt. Verfahren zur Modifizierung der Oberflaeche eines metallischen Formkoerpers durch mechanisches Aufbringen von Hartstoffpartikeln auf die Oberflaeche des metallischen Formkoerpers und/oder Einbringen von Hartstoffpartikeln in die Oberflaeche des metallischen Formkoerpers, wobei die Mohs-Haerte des Hartstoffpartikels hoeher ist als die des metallischen Formkoerpers, bei dem das mechanische Aufbringen und/oder Einbringen der Hartstoffpartikel erfolgt, indem man den metallischen Formkoerper mit der beschichteten Seite des uebertragungsmediums in Kontakt bringt und mittels Haemmerns die Hartstoffpartikel auf und/oder in die Oberflaeche des metallischen Formkoerpers uebertraegt. **Machine translation:** Transmission medium comprising a planar carrier and a single-sided coating applied thereto, wherein the coating is hard material particles in a binder. Processes for modifying the surface of a metallic mold body by mechanical application of hard material particles to the surface of the metallic mold body and/or introduction of hard material particles to the surface of the metallic mold body, wherein the Mohs hardness of the hard material particle is higher than that of the metallic mold body, wherein the mechanical application and/or introduction of the hard material particles is effected by adding the metal mold body is brought into contact with the coated side of the transmission medium and the haemmerns hard material particles on the surface of the body and/or in metallic form.

Classifications:

International (IPC 8-9): B32B27/14 B32B37/00 B32B37/10 B32B5/16 B32B7/06 C04B35/622 C21D7/04 C21D7/06 C23C24/02 (Advanced/Invention); B32B37/24 (Advanced/Non-invention)
CPC: C23C24/02 B32B5/16 B32B7/06 B32B27/14 B32B2037/243 B32B2264/10 C21D7/04 C21D7/06 B32B37/025 B32B37/1045



Family:

Publication number	Publication date	Application number	Application date
EP3239356 A1	20171101	EP20160166864	20160425

Priority:

EP20160166864 20160425

Probable Assignee: EVONIK DEGUSSA GMBH

Assignee(s): (std): EVONIK DEGUSSA GMBH

Inventor(s): (std): FISCHER ULRICH ; HEBERER STEFAN ; LORTZ WOLFGANG ; NESS DANIEL ; SONDJAJA HERRIYANTO RONNY ; TURHAN CAN METEHAN ; WOMBACHER WILLIBALD

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

EP3239356 A1	20171101	LSPB	+	published / reissued
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EP3239356 A1	20180103	LSSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 20171122
EP3239356 A1	20190220	LSRE	RIC1	INFORMATION PROVIDED ON IPC CODE ASSIGNED BEFORE GRANT	CLASSIFICATIONSCHEME : IPC CLASSIFICATIONSYMBOL : C21D 7/06 20060101ALI20190117BHEP
EP3239356 A1	20190220	LSRE	RIC1	INFORMATION PROVIDED ON IPC CODE ASSIGNED BEFORE GRANT	CLASSIFICATIONSCHEME : IPC CLASSIFICATIONSYMBOL : C21D 7/04 20060101ALI20190117BHEP
EP3239356 A1	20190220	LSRE	RIC1	INFORMATION PROVIDED ON IPC CODE ASSIGNED BEFORE GRANT	CLASSIFICATIONSCHEME : IPC CLASSIFICATIONSYMBOL : B32B 37/24 20060101ALN20190117BHEP
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EP3239356 A1	20190220	LSRE	RIC1	INFORMATION PROVIDED ON IPC CODE ASSIGNED BEFORE GRANT	CLASSIFICATIONSCHEME : IPC CLASSIFICATIONSYMBOL : B32B 37/10 20060101ALI20190117BHEP
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EP3239356 A1	20190220	LSRE	RIC1	INFORMATION PROVIDED ON IPC CODE ASSIGNED BEFORE GRANT	CLASSIFICATIONSCHEME : IPC CLASSIFICATIONSYMBOL : C23C 24/02 20060101AFI20190117BHEP
EP3239356 A1	20190313	LSGT	+INTG	INTENTION TO GRANT ANNOUNCED	EFFECTIVE DATE : 20190212

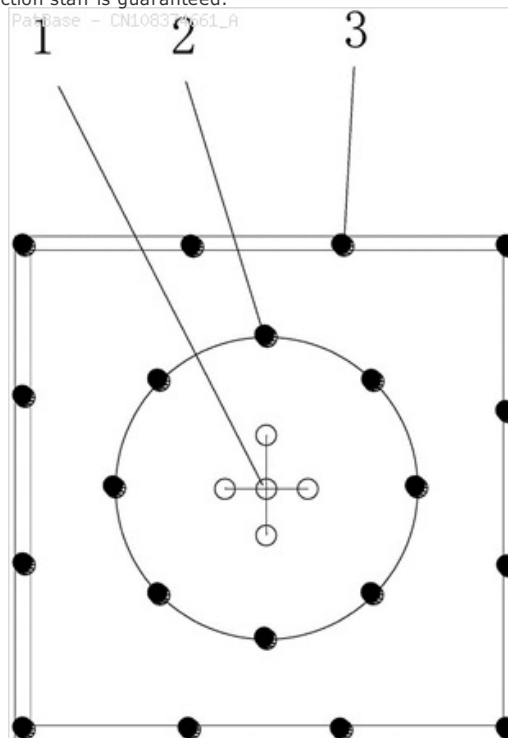
Title: PRIMARY **BLASTING WELL** FORMING METHOD FOR MIDDLE GUIDE WELL

Abstract: The invention relates to the field of tunnel engineering, and discloses a primary **blasting well** forming method for a middle guide well. The method includes the steps: (1) performing measuring and positioning to determine the wellhead position of a vertical well; (2) mechanically digging a wellhead of the vertical well; (3) reversely digging the bottom of the vertical well upwards; (4) according to a blasting design lofting blast hole position of the middle guide well: performing lofting to form 2mss2m middle guide well position of the vertical well by the aid of a total-station instrument, and labeling the position of the blast hole position; (5) completely drilling a blast hole by a down-the-hole drill once; (6) plugging the bottom of the blast hole; (7) filling the blast hole with explosive; (8) plugging an upper opening of the blast hole with blast sludge after the blast hole is plugged by the explosive; (9) line connecting and explosion initiating, connecting starting detonators in the blast holes in a clustering manner, and performing differential initiation of non-electric millisecond detonators. The method has the advantages that construction safety is improved, potential safety hazards are reduced, and life safety of construction staff is guaranteed.

Classifications:

International (IPC 8-9): E21D1/00 E21D1/03 E21D3/00 F42D1/00 F42D3/04 (Advanced/Invention)

CPC: E21D1/03 E21D1/00 E21D3/00 F42D1/00 F42D3/04



Family:

Publication number	Publication date	Application number	Application date
■ CN108374661 A	20180807	CN201810117099	20180206

Priority:

CN201810117099 20180206

Probable Assignee: ZHEJIANG PROVINCE TUNNEL ENG CO

Assignee(s): (std): ZHEJIANG PROVINCE TUNNEL ENG CO

Assignee(s): ZHEJIANG PROVINCE TUNNEL ENGINEERING CO ; TUNNEL ENGINEERING CO OF ZHEJIANG PROVINCE

Inventor(s): (std): CHANG LUZHU ; CHEN SHUIHE ; FEI YIBIN ; GUO HONGLI ; HE BINGYAN ; ZHANG CHUNLIN ; ZHANG ENSHAN ; ZHANG YUJIANG

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
CN108374661 A	20180807	LSPB	+	published / reissued	
CN108374661 A	20180807	LSPB	PB01	PUBLICATION	

Title: DRY ICE SPRINKLING INSTALLATION HAS ICE STORAGE CONTAINER, AIR CONTAINER AND MIXING UNIT TO PRODUCE MIX OF PRESSURIZED AIR AND DRY ICE PARTICLES CONNECTED BETWEEN THEM

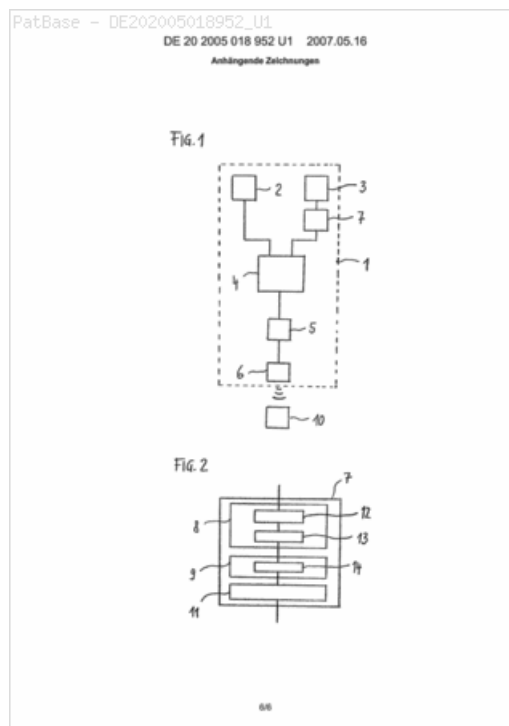
Abstract: Dry ice sprinkling installation (1) sprinkles object (10) to be cleaned with a dry ice particle/pressurized air mix. It has an ice storage container (2), air storage container (3) and mixing unit(4) to produce the dry ice particle/pressurized air mix. An air preparation system (7) to dry and/or clean the pressurized air is connected between the air storage container and the mixing unit. Air preparation system has a drying unit. Drying unit has a pressurized air cooler and cyclone separator. Air preparation system has air heating and cleaning unit including microfilter.

Classifications:

International (IPC 8-9): B24D3/00 (Advanced/Invention);
B24D3/00 (Core/Invention)

CPC: B24C1/003 B24C1/086 B24C5/04 B24C7/0069

European: B24C1/00B B24C1/08D B24C5/04 B24C7/00C2



Family:

Publication number	Publication date	Application number	Application date
DE202005018952 U1	20070412	DE200520018952U	20051202

Priority:

DE200520018952U 20051202

Probable Assignee: KIM BETTINA

Assignee(s): (std): KIM BETTINA ; NIEDERREITER GERALD

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
DE202005018952 U1	20070412	LSGT	+	granted / extensions (spc, cpc, pte)	
DE202005018952 U1	20070516	LSGT	R207	UTILITY MODEL SPECIFICATION	EFFECTIVE DATE : 20070516
DE202005018952 U1	20091015	LSAS	R081	CHANGE OF APPLICANT/PATENTEE	PARTYTYPE : OWNER OWNER : KITZ SERVICE GROUP LTD., GB OLDPARTY : FORMER OWNER: BETTINA KIM, GERALD NIEDERREITER, , DE EFFECTIVE DATE : 20090813
DE202005018952 U1	20091022	LSLE	-R156	LAPSE OF IP RIGHT AFTER 3 YEARS	EFFECTIVE DATE : 20090701
DE202005018952 U1	20151202	PEXP		Calculated Patent Term Expiry	

Title: EXHAUST NOZZLE E.G. FOR DRY ICE JET PLANT, HAS DEPRESSING CHANNEL HAVING ROUND CROSS SECTION AND SPIRAL ARRANGED SURFACE ELEMENT WHICH HAS PULLED BARREL

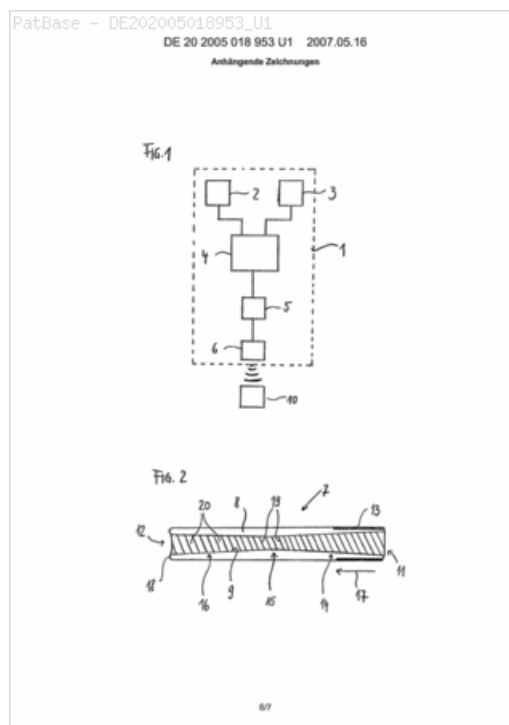
Abstract: The exhaust nozzle (7) has a depressing channel (9), having a round cross section, spiral arranged surface element (19, 20) which has a pulled barrel. The surface element has an upward gradient from 7deg to 9deg. An independent claim is included for a blasting plant.

Classifications:

International (IPC 8-9): B05B1/02 B05B1/34 (Advanced/Invention);
B05B1/02 B05B1/34 (Core/Invention)

CPC: B05B1/341 B24C1/003 B24C1/086 B24C5/04

European: B05B1/34A3 B24C1/00B B24C1/08D B24C5/04



Family:

Publication number	Publication date	Application number	Application date
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Priority:

DE200520018953U 20051202

Probable Assignee: KIM BETTINA

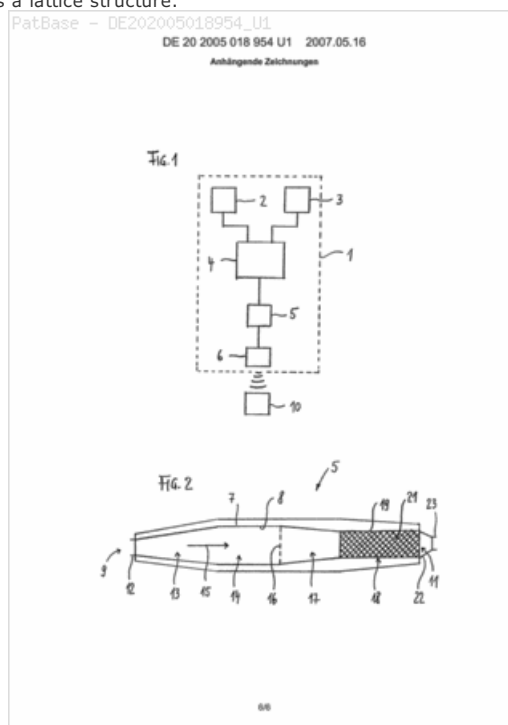
Assignee(s): (std); KIM BETTINA ; NIEDERREITER GERALD

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
DE202005018953 U1	20070412	LSGT	+	granted / extensions (spc, cpc, pte)	
DE202005018953 U1	20070516	LSGT	R207	UTILITY MODEL SPECIFICATION	EFFECTIVE DATE : 20070516
DE202005018953 U1	20091015	LSAS	R081	CHANGE OF APPLICANT/PATENTEE	PARTYTYPE : OWNER OWNER : KITZ SERVICE GROUP LTD., GB OLDPARTY : FORMER OWNER: BETTINA KIM, GERALD NIEDERREITER, , DE EFFECTIVE DATE : 20090813
DE202005018953 U1	20091022	LSLE	-R156	LAPSE OF IP RIGHT AFTER 3 YEARS	EFFECTIVE DATE : 20090701
DE202005018953 U1	20151202	PEXP		Calculated Patent Term Expiry	

European: B24C1/00B B24C1/08D B24C5/04



Publication number	Publication date	Application number	Application date
DE202005018954 U1	20070412	DE200520018954U	20051202

DE200520018954U 20051202

Probable Assignee: KIM BETTINA

Assignee(s): (std) KIM BETTINA ; NIEDERREITER GERALD

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Patent	Date recorded	Event group	Code	Event	Details
DE202005018954 U1	20070412	LSGT	+	granted / extensions (spc, cpc, pte)	
DE202005018954 U1	20070516	LSGT	R207	UTILITY MODEL SPECIFICATION	EFFECTIVE DATE : 20070516
DE202005018954 U1	20091015	LSAS	R081	CHANGE OF APPLICANT/PATENTEE	PARTYTYPE : OWNER OWNER : KITZ SERVICE GROUP LTD., GB OLDPARTY : FORMER OWNER: BETTINA KIM,GERALD NIEDERREITER, , DE EFFECTIVE DATE : 20090813
DE202005018954 U1	20091022	LSLE	-R156	LAPSE OF IP RIGHT AFTER 3 YEARS	EFFECTIVE DATE : 20090701
DE202005018954 U1	20151202	PEXP		Calculated Patent Term Expiry	

Title: EXPLOSIVE ASSEMBLY

Abstract: 1. A blasting assembly comprising a detonating explosive, a generally cylindrical, non-rigid package containing said explosive, a rigid plate affixed to a longitudinal wall of said package, a channel in said plate so constructed and arranged as to hold a detonating element longitudinally against and in contact with said package, said plate being against said package and extending laterally on both sides of said channel a distance sufficient to provide confinement for said explosive at the initiation of detonation, a tear-resistant flexible covering over said package and over said plate, said covering being cut out to expose said channel and permit access thereto for the insertion of a detonating element.

Classifications:

International (IPC 8-9): F42B3/26 (Advanced/Invention);

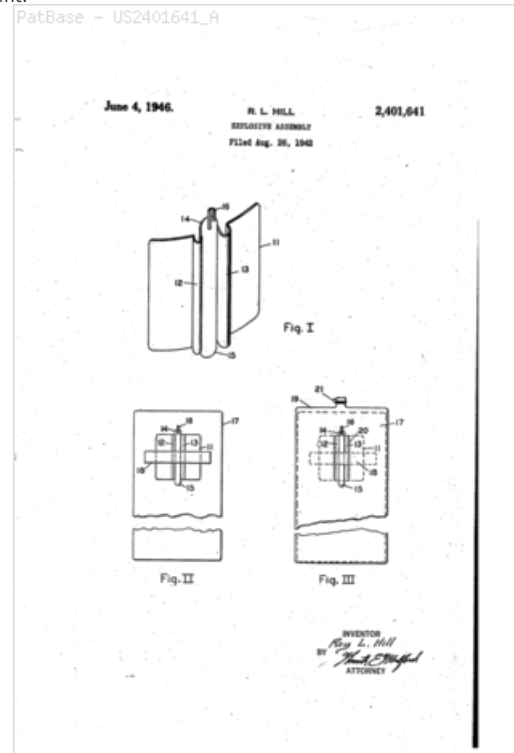
F42B3/00 (Core/Invention)

International (IPC 1-7): F42B3/10

CPC: F42B3/26

European: F42B3/26

US: 102/314



Family:

Publication number	Publication date	Application number	Application date
US2401641 A	19460604	US19420456132	19420826

Priority:

US19420456132 19420826

Probable Assignee:

ATLAS POWDER CO

Assignee(s): (std):

ATLAS POWDER CO

Assignee(s):

ATLAS POWDER COMPANY

Inventor(s): (std):

HILL ROY L

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
US2401641 A	19460604	LSGT	+	granted / extensions (spc, cpc, pte)	

Title: METHOD FOR DRILLING-AND-BLASTING ROCK PREPARATION IN COAL PITS

Abstract:

FIELD: mining, particularly open-cast mineral mining with the use of drilling-and-blasting works.

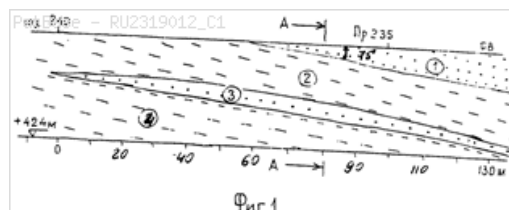
SUBSTANCE: method involves designing drilling-and-blasting works on the base of geological information; drilling wells in peripheral blocks and pillar blocks; charging wells with explosives and blasting thereof; cutting debris by excavation ledges. Geological information is directly obtained for each blasted block by rock dip and strike measuring in visible exposed slope area. Then said rock lithotype is determined and rock physical-and-mechanical properties of taken samples are detected. Side pattern and geological block section are created. After that angular and linear rock fracturing and fracture frequency measurements are carried out. Main fracture pattern relatively ledge slope is plotted. Technological drilling-and-blasting work parameters are calculated and drilling-and-blasting well pattern are designed from obtained geological information.

EFFECT: improved geological and information support, increased efficiency of drilling-and-blasting rock preparation in coal pits and enhanced rock excavation and conveyance capabilities.

3 cl, 3 dwg, 2 tbl

Classifications:

International (IPC 8-9): E21C41/28 F42D3/04 (Advanced/Invention);
E21C41/00 F42D3/00 (Core/Invention)



Family:

Publication number	Publication date	Application number	Application date
 RU2319012 C1	20080310	RU20060117110	20060519

Priority:

RU20060117110 20060519

Inventor(s): LAGAJ NADEZHDA VLADIMIROVNA ; TAKRANOV ROBERT ANDREEVICH

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
RU2319012 C1	20080310	LSGT	+	granted / extensions (spc, cpc, pte)	
RU2319012 C1	20180222	LSLE	-MM4A	THE PATENT IS INVALID DUE TO NON-PAYMENT OF FEES	EFFECTIVE DATE : 20170520
RU2319012 C1	20260519	PEXP		Calculated Patent Term Expiry	

Title: OPENED CAST MINING METHOD

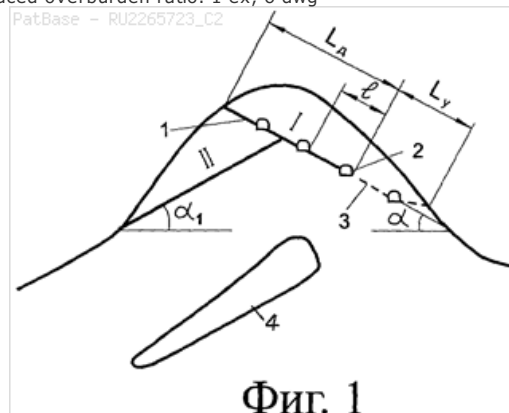
Abstract: FIELD: mining industry, particularly opened cast mining. SUBSTANCE: method involves dividing and successively providing shifting of overlaying hill-shaped rock layers outside the cast by drilling well rings in shifting plane from drilling rooms, wherein the wells extend at an angle enough to initiate layer shifting during sliding surface preparation in rest prism area; placing charges into the wells and blasting thereof in rest prism area; supplying clay mix by its own gravity before sliding surface preparation in upper pressure prism part; **blasting well** rings in pressure prism area; opening the mine; excavating mineral and overburden rock; developing the cast up to design depth with cast wall building and creating dump of crashed overburden rock at cast contour. EFFECT: increased efficiency of mineral excavation and reduced overburden ratio. 1 ex, 6 dwg

Classifications:

International (IPC 8-9): E21C41/26 (Advanced/Invention);

E21C41/00 (Core/Invention)

International (IPC 1-7): E21C41/26



Family:

Publication number	Publication date	Application number	Application date
RU2003136354 A	20050520	RU20030136354	20031215
RU2265723 C2	20051210	RU20030136354	20031215

Priority:

RU20030136354 20031215

Probable Assignee:

EREMIN GEORGY

Assignee(s):

EREMIN GEORGY

Inventor(s): (std):

EREMIN G M ; EREMIN GM

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
RU2003136354 A	20050520	LSPB	+	published / reissued	
RU2265723 C2	20051210	LSGT	+	granted / extensions (spc, cpc, pte)	
RU2265723 C2	20070220	LSLE	-MM4A	THE PATENT IS INVALID DUE TO NON-PAYMENT OF FEES	EFFECTIVE DATE : 20051216
RU2265723 C2	20231215	PEXP		Calculated Patent Term Expiry	

Title: APPARATUS FOR MEASURING VARIATIONS IN FLATNESS

Abstract: An apparatus for measuring variations in the flatness of an Almen strip holding surface includes a gaging block having opposing parallel surfaces defining an aperture extending between said parallel surfaces and substantially conforming to the size of the holding surface. A plunger is mounted in a cross member which extends across the aperture and is moved along opposite sides thereof. A dial indicator responds to displacement of the aperture to permit detection of any variation in flatness as the plunger is moved over the holding surface and along and between the side and end edges thereof. Placement of the Almen strip holding screws is verified to be in tolerance by the gaging block in that the gaging block cannot be mounted on the holding surface if the distance between the openings is out of tolerance.

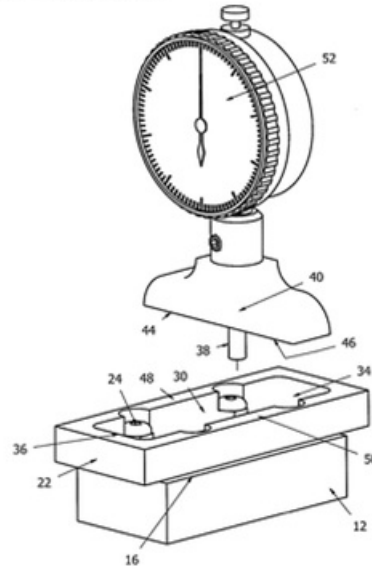
Classifications:

International (IPC 8-9): G01B3/22 G01B5/28 (Advanced/Invention);
G01B5/00 (Advanced/Non-invention)

CPC: G01B3/22 G01B5/28 G01B5/30 C21D7/06

US: 73/104 73/105 73/11.01 73/11.02 73/866 73/866.5

PatBase - US8479568_BA



Family:

Publication number	Publication date	Application number	Application date
■ US8479568 BA	20130709	US20110041682	20110307

Priority:

US20100311020P 20100305 US20110041682 20110307

Probable Assignee: ELECTRONICS INC

Assignee(s): (std): CHAMPAIGNE JACK ; ELECTRONICS INC ; FRANCIS DAVID ; METAL IMPROVEMENT CO LLC

Inventor(s): (std): CHAMPAIGNE JACK ; FRANCIS DAVID

Agent(s): BOTKIN AND HALL LLP

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
US8479568 BA	20130709	LSGT	+	granted / extensions (spc, cpc, pte)	
US8479568 BA	20110816	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : METAL IMPROVEMENT COMPANY, LLC, NEW JERSEY OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:CHAMPAIGNE, JACK; FRANCIS, DAVID; SIGNING DATES FROM 20110720 TO 20110725; REEL/FRAME:026759/0470
US8479568 BA	20110816	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : ELECTRONICS INC., INDIANA OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:CHAMPAIGNE, JACK; FRANCIS, DAVID; SIGNING DATES FROM 20110720 TO 20110725; REEL/FRAME:026759/0470
US8479568 BA	20130619	LSGT	PAT1	Patented Case	

US8479568 BA	20130619	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US8479568 BA	20160712	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US8479568 BA	20310917	PEXP		Calculated Patent Term Expiry (PTA 194 days)	

Title: METHOD FOR MANUFACTURING AN OBJECT BY SOLIDIFYING A POWDER USING A LASER

Abstract: This process for manufacturing an object by solidifying a powder (P) includes steps of: a) depositing a powder layer (P) on a working zone (Z); b) compacting this layer; c) solidifying a first zone (7) of the compacted layer using a laser; d) solidifying at least one second zone (11, 12, 13) of the compact layer, this second zone (11, 12, 13) making contact with the zone (7) solidified in step c), under solidifying conditions chosen so that this second solidified zone (11, 12, 13) is less strong than the first solidified zone (7); e) repeating steps a) to d) until the object (1) is obtained; and f), after step e) and when the object (1) is finished, removing the second zones (11, 12) with respect to the first zones (7).

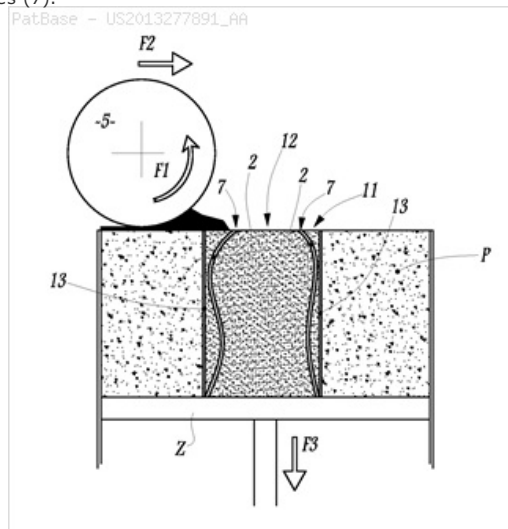
Classifications:

International (IPC 8-9): B22F3/105 B22F3/16 B22F3/23 B28B1/30 B29C47/92 B29C48/92 B29C67/00 B33Y10/00 (Advanced/Invention); B29C67/00 (Advanced/Non-invention)

CPC: B22F3/1055 Y02P10/295 B33Y10/00 B29C64/153

European: B22F3/105S

US: 1/1 264/497



Family:

Publication number	Publication date	Application number	Application date
DE602012009536 D1	20150924	DE201260009536T	20120418
DK2699369 T3	20151005	DK20120715975T	20120418
EP2699369 A2	20140226	EP20120715975	20120418
EP2699369 B1	20150812	EP20120715975	20120418
ES2550947 T3	20151113	ES20120715975T	20120418
FR2974316 A1	20121026	FR20110053365	20110419
FR2974316 B1	20151009	FR20110053365	20110419
JP2014516387 T2	20140710	JP20140505593T	20120418
JP2017106116 A2	20170615	JP20170000196	20170104
JP6339704 B2	20180606	JP20170000196	20170104
US2013277891 AA	20131024	US20120824444	20120418
US9327451 BB	20160503	US20120824444	20120418
WO12143365 A2	20121026	WO2012EP57030	20120418
WO12143365 A3	20130103	WO2012EP57030	20120418

Priority:

FR20110053365 20110419 EP20120715975 20120418 WO2012EP57030 20120418
JP20140505593T 20120418 JP20170000196 20170104

Probable Assignee: PHENIX SYSTEMS

Assignee(s): (std): PHENIX SYSTEMS ; TEULET PATRICK

Inventor(s): (std): TEULET PATRICK ; PATRICK TEULET

Agent(s): LAVOIX MUNICH; MYON GERARD JEAN PIERRE; PONTI ADELAIDA; CABINET LAVOIX AUVERGNE; CABINET LAVOIX; AOKI ATSUSHI; SHIMADA TETSURO; YOUNG AND THOMPSON; MYON GERARD ET AL

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

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Patent	Date recorded	Event group	Code	Event	Details
DK2699369 T3	20151005	LSGT	+	granted / extensions (spc, cpc, pte)	
DK2699369 T3	20320418	PEXP		Calculated Patent Term Expiry	
EP2699369 A2	20140226	LSPB	+	published / reissued	

EP2699369 A2	20140226	LSSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 20131021
EP2699369 A2	20150429	LSGT	+INTG	INTENTION TO GRANT ANNOUNCED	EFFECTIVE DATE : 20150330
EP2699369 A2	20160429	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : LU PAYMENT DATE : 20160324 YEAR OF FEE PAYMENT : 5
EP2699369 A2	20160429	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DK PAYMENT DATE : 20160329 YEAR OF FEE PAYMENT : 5
EP2699369 A2	20160429	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : CZ PAYMENT DATE : 20160321 YEAR OF FEE PAYMENT : 5
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EP2699369 A2	20160531	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : RO PAYMENT DATE : 20160330 YEAR OF FEE PAYMENT : 5
EP2699369 A2	20160531	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : FI PAYMENT DATE : 20160323 YEAR OF FEE PAYMENT : 5
EP2699369 A2	20160531	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : PL PAYMENT DATE : 20160324 YEAR OF FEE PAYMENT : 5
EP2699369 A2	20160531	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : FR PAYMENT DATE : 20160314 YEAR OF FEE PAYMENT : 5
EP2699369 A2	20160729	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : CH PAYMENT DATE : 20160405 YEAR OF FEE PAYMENT : 5
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EP2699369 A2	20160729	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : GB PAYMENT DATE : 20160418 YEAR OF FEE PAYMENT : 5
EP2699369 A2	20160729	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DE PAYMENT DATE : 20160413 YEAR OF FEE PAYMENT : 5
EP2699369 A2	20160831	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : BE PAYMENT DATE : 20160421 YEAR OF FEE PAYMENT : 5
EP2699369 A2	20160831	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : IT PAYMENT DATE : 20160412 YEAR OF FEE PAYMENT : 5
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EP2699369 B1	20150812	LSGT	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : GB REF LEGAL EVENT CODE : FG4D TEXT : NOT ENGLISH

EP2699369 B1	20150814	LSNP	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : CH REF LEGAL EVENT CODE : EP
EP2699369 B1	20150815	LSNP	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : AT REF LEGAL EVENT CODE : REF REF DOCUMENT NUMBER : 741673 COUNTRY OF REF DOCUMENT : AT KIND CODE OF REF DOCUMENT : T DESIGNATED STATE(S) : EFFECTIVE DATE : 20150815
EP2699369 B1	20150909	LSGT	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : IE REF LEGAL EVENT CODE : FG4D TEXT : LANGUAGE OF EP DOCUMENT: FRENCH
EP2699369 B1	20150924	LSPB	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : DE REF LEGAL EVENT CODE : R096 REF DOCUMENT NUMBER : 602012009536 COUNTRY OF REF DOCUMENT : DE
EP2699369 B1	20151028	LSNP	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : RO REF LEGAL EVENT CODE : EPE
EP2699369 B1	20151113	LSGT	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : ES REF LEGAL EVENT CODE : FG2A REF DOCUMENT NUMBER : 2550947 COUNTRY OF REF DOCUMENT : ES KIND CODE OF REF DOCUMENT : T3 DESIGNATED STATE(S) : EFFECTIVE DATE : 20151113
EP2699369 B1	20160111	LSRV	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : LT REF LEGAL EVENT CODE : MG4D
EP2699369 B1	20160115	LSRV	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : AT REF LEGAL EVENT CODE : MK05 REF DOCUMENT NUMBER : 741673 COUNTRY OF REF DOCUMENT : AT KIND CODE OF REF DOCUMENT : T DESIGNATED STATE(S) : EFFECTIVE DATE : 20150812
EP2699369 B1	20160129	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : LT NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20150812
EP2699369 B1	20160129	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : NO NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20151112
EP2699369 B1	20160129	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : GR NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20151113
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EP2699369 B1	20160229	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 : 20151214
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				[ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20150812
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EP2699369 B1	20160229	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : RS NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20150812
EP2699369 B1	20160314	LSFE	REG	REFERENCE TO A NATIONAL CODE	COUNTRY OF REF DOCUMENT : FR REF COUNTRY CODE : FR REF LEGAL EVENT CODE : PLFP YEAR OF FEE PAYMENT : 5
EP2699369 B1	20160429	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : SK NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20150812
EP2699369 B1	20160429	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : EE NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20150812
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EP2699369 B1	20160720	LSGT	+26N	NO OPPOSITION FILED	EFFECTIVE DATE : 20160513
EP2699369 B1	20160831	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 : 20150812
EP2699369 B1	20170125	LSLE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : IE REF LEGAL EVENT CODE : MM4A
EP2699369 B1	20170426	LSFE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : FR REF LEGAL EVENT CODE : PLFP YEAR OF FEE PAYMENT : 6
EP2699369 B1	20170531	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 : 20160418
EP2699369 B1	20170531	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : PL PAYMENT DATE : 20170331 YEAR OF FEE PAYMENT : 6
EP2699369 B1	20170630	LSFE	+PGFP	ANNUAL FEE PAID TO	COUNTRY OF REF DOCUMENT : NL

EP2699369 B1	20170731	LSFE	+PGFP	NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	PAYMENT DATE : 20170426 YEAR OF FEE PAYMENT : 6
EP2699369 B1	20170731	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : FR PAYMENT DATE : 20170426 YEAR OF FEE PAYMENT : 6
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EP2699369 B1	20170731	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DK PAYMENT DATE : 20170425 YEAR OF FEE PAYMENT : 6
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EP2699369 B1	20170731	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : RO PAYMENT DATE : 20170406 YEAR OF FEE PAYMENT : 6
EP2699369 B1	20170831	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : LU PAYMENT DATE : 20170426 YEAR OF FEE PAYMENT : 6
EP2699369 B1	20170831	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : SE PAYMENT DATE : 20170427 YEAR OF FEE PAYMENT : 6
EP2699369 B1	20170831	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : ES PAYMENT DATE : 20170503 YEAR OF FEE PAYMENT : 6
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EP2699369 B1	20180425	LSFE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : FR REF LEGAL EVENT CODE : PLFP YEAR OF FEE PAYMENT : 7
EP2699369 B1	20180531	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : CY NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20150812
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				NATIONAL OFFICE TO EPO]	PREScribed TIME-LIMIT Lapsed DATE : 20150812
EP2699369 B1	20180531	LSLE	-PG25	Lapsed IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : HU NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT; INVALID AB INITIO Lapsed DATE : 20120418
EP2699369 B1	20180629	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 FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT Lapsed DATE : 20150812
EP2699369 B1	20180629	LSLE	-PG25	Lapsed IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : TR NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT Lapsed DATE : 20150812
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EP2699369 B1	20180629	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : LU PAYMENT DATE : 20180427 YEAR OF FEE PAYMENT : 7
EP2699369 B1	20180629	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : NL PAYMENT DATE : 20180426 YEAR OF FEE PAYMENT : 7
EP2699369 B1	20180731	LSLE	-PG25	Lapsed IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : BG NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT Lapsed DATE : 20150812
EP2699369 B1	20180731	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : FI PAYMENT DATE : 20180427 YEAR OF FEE PAYMENT : 7
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EP2699369 B1	20180731	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DK PAYMENT DATE : 20180426 YEAR OF FEE PAYMENT : 7
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EP2699369 B1	20180731	LSFE	+PGFP	ANNUAL FEE PAID TO	COUNTRY OF REF DOCUMENT : ES

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EP2699369 B1	20180831	LSFE	+PGFP		ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : IT PAYMENT DATE : 20180423 YEAR OF FEE PAYMENT : 7
EP2699369 B1	20180831	LSFE	+PGFP		ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : RO PAYMENT DATE : 20180403 YEAR OF FEE PAYMENT : 7
EP2699369 B1	20180831	LSFE	+PGFP		ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : BE PAYMENT DATE : 20180427 YEAR OF FEE PAYMENT : 7
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EP2699369 B1	20181031	LSFE	+PGFP		ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : GB PAYMENT DATE : 20180427 YEAR OF FEE PAYMENT : 7
EP2699369 B1	20320418	PEXP			Calculated Patent Term Expiry	
ES2550947 T3	20151113	LSGT	+		granted / extensions (spc, cpc, pte)	
ES2550947 T3	20320418	PEXP			Calculated Patent Term Expiry	
FR2974316 A1	20121026	LSPB	+		published / reissued	
FR2974316 B1	20151009	LSGT	+		granted / extensions (spc, cpc, pte)	
FR2974316 B1	20160314	LSFE	+PLFP		FEE PAYMENT	YEAR OF FEE PAYMENT : 6
FR2974316 B1	20170426	LSFE	+PLFP		FEE PAYMENT	YEAR OF FEE PAYMENT : 7
FR2974316 B1	20180425	LSFE	+PLFP		FEE PAYMENT	YEAR OF FEE PAYMENT : 8
FR2974316 B1	20310419	PEXP			Calculated Patent Term Expiry	
JP2014516387 T2	20150318	LSSES	+A621		WRITTEN REQUEST FOR APPLICATION EXAMINATION	TEXT : JAPANESE INTERMEDIATE CODE: A621 EFFECTIVE DATE : 20150318
JP2014516387 T2	20150512	LSRE	A521		WRITTEN AMENDMENT	TEXT : JAPANESE INTERMEDIATE CODE: A523 EFFECTIVE DATE : 20150512
JP2014516387 T2	20160210	LSSES	-A131		NOTIFICATION OF REASONS FOR REFUSAL	TEXT : JAPANESE INTERMEDIATE CODE: A131 EFFECTIVE DATE : 20160209
JP2014516387 T2	20160517	LSRE	A521		WRITTEN AMENDMENT	TEXT : JAPANESE INTERMEDIATE CODE: A523 EFFECTIVE DATE : 20160517

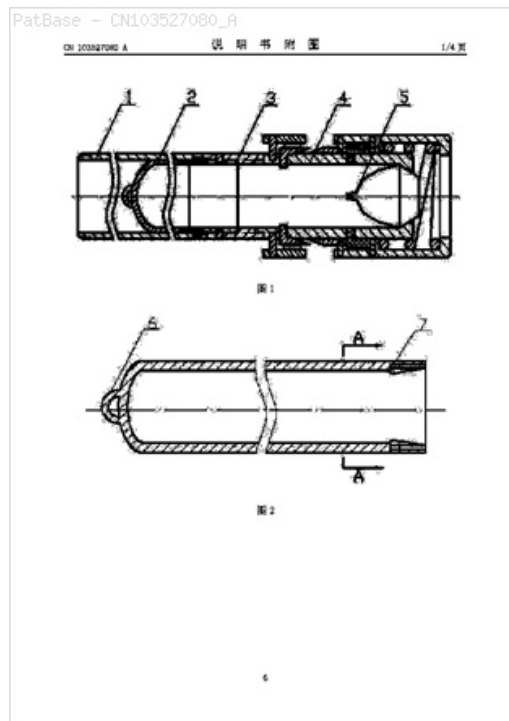
JP2014516387 T2	20160906	LSRV	-A02	DECISION OF REFUSAL	TEXT : JAPANESE INTERMEDIATE CODE: A02 EFFECTIVE DATE : 20160906
JP2017106116 A2	20171128	LSSES	-A131	NOTIFICATION OF REASONS FOR REFUSAL	TEXT : JAPANESE INTERMEDIATE CODE: A131 EFFECTIVE DATE : 20171128
JP2017106116 A2	20180227	LSRE	A521	WRITTEN AMENDMENT	TEXT : JAPANESE INTERMEDIATE CODE: A523 EFFECTIVE DATE : 20180227
JP2017106116 A2	20180404	LSGT	+TRDD	DECISION OF GRANT OR REJECTION WRITTEN	
JP2017106116 A2	20180410	LSGT	+A01	WRITTEN DECISION TO GRANT A PATENT OR TO GRANT A REGISTRATION (UTILITY MODEL)	TEXT : JAPANESE INTERMEDIATE CODE: A01 EFFECTIVE DATE : 20180410
JP2017106116 A2	20180517	LSFE	+A61	FIRST PAYMENT OF ANNUAL FEES (DURING GRANT PROCEDURE)	TEXT : JAPANESE INTERMEDIATE CODE: A61 EFFECTIVE DATE : 20180510
JP2017106116 A2	20180518	LSGT	+R150	CERTIFICATE OF PATENT OR REGISTRATION OF UTILITY MODEL	TEXT : JAPANESE INTERMEDIATE CODE: R150 REF DOCUMENT NUMBER : 6339704 COUNTRY OF REF DOCUMENT : JP
JP6339704 B2	20180606	LSGT	+	granted / extensions (spc, cpc, pte)	
JP6339704 B2	20180412	LSGT	+A01	特許査定書 Decision of patent grant	
JP6339704 B2	20180515	LSFE	R100	特許料納付書 Patent fee payment form	
JP6339704 B2	20180518	LSGT	+R150	特許証 Patent certificate	
JP6339704 B2	20370104	PEXP		Calculated Patent Term Expiry	
US2013277891 AA	20131024	LSPB	+	published / reissued	
US2013277891 AA	20160413	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US9327451 BB	20160503	LSGT	+	granted / extensions (spc, cpc, pte)	
US9327451 BB	20130612	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : PHENIX SYSTEMS, FRANCE OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:TEULET, PATRICK; REEL/FRAME:030593/0596 EFFECTIVE DATE : 20130330
US9327451 BB	20160113	LSSES	+NAM1	Notice of Allowance Mailed -- Application Received in Office of Publications	
US9327451 BB	20160413	LSGT	PAT1	Patented Case	
US9327451 BB	20330404	PEXP		Calculated Patent Term Expiry (PTA 351 days)	
WO12143365 A2	20121026	LSPB	+	published / reissued	
WO12143365 A3	20130612	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 13824444 COUNTRY OF REF DOCUMENT : US
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WO12143365 A3	20131021	LSNE	NENP	NON-ENTRY INTO THE NATIONAL PHASE IN:	REF COUNTRY CODE : DE
WO12143365 A3	20131021	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 2012715975 COUNTRY OF REF DOCUMENT : EP

Title: DRILLING TOOL FOR DIRECTIONAL-**BLASTING WELL** DRILLING

Abstract: The invention relates to a method and drilling tool for directional-**blasting well** drilling in petroleum and natural gas well drilling. The method comprises the steps that rocks are melted and divided in an extruding mode through high-energy jet flows generated through explosion of perforating bullets, a large-aperture jet hole similar to a hole after explosive blasting is formed, perforating bullets can explode one by one at intervals in proper positions in the jet hole through a mechanism, and therefore the purpose of circulative directional **blasting well** drilling is achieved. The drilling tool mainly comprises a bullet bin, perforating bullets and a gun head. The bullet bin is a hollow steel pipe with one side sealed, a hanging ring is arranged at the sealed position of the bullet bin, and four bullet bin wedge slide keys are arranged at the position, not sealed, of the bullet bin. When the bullet bin is fully filled, the bullet bin wedge slide keys stretch out to prevent the perforating bullets from falling down, and when the bullet bin reaches the connector, the bullet bin wedge slide keys retreat in a sliding mode, and the perforating bullets can fall down to the automatic bullet sending position of the gun head. According to the method and drilling tool, cost is saved, the well drilling speed is improved, the accident rate of well drilling can be reduced, and operation is simple and convenient.

Classifications:

International (IPC 8-9): E21B7/00 E21B7/04 (Advanced/Invention)



Family:

Publication number	Publication date	Application number	Application date
CN103527080 A	20140122	CN201310547786	20131107
CN103527080 B	20150715	CN201310547786	20131107

Priority:

CN201310547786 20131107

Probable Assignee: UNIV SOUTHWEST PETROLEUM

Assignee(s): (std): SOUTHWEST PETROLEUM UNIV ; UNIV SOUTHWEST PETROLEUM

Inventor(s): (std): ZHOU XIAOMIN ; XIONG WEILING ; QIU YALING ; LI BO ; HU YUMAO ; HE WEI

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
CN103527080 A	20140122	LSPB	+	published / reissued	
CN103527080 A	20140122	LSPB	+C06	PUBLICATION	
CN103527080 A	20150715	LSGT	+C14	GRANT OF PATENT OR UTILITY MODEL	
CN103527080 A	20161221	LSRV	-EXPY	TERMINATION OF PATENT RIGHT OR UTILITY MODEL	
CN103527080 B	20150715	LSGT	+	granted / extensions (spc, cpc, pte)	
CN103527080 B	20331107	PEXP		Calculated Patent Term Expiry	