

Title (en)

A method of detaching a monolith from rock massif and a device for application of the method

Title (de)

Verfahren zur Ablösung eines Monolithen aus einem Felsenmassiv und Vorrichtung zur Anwendung des Verfahrens

Title (fr)

Procédé de détachement de monolithe d'un massif rocheux et dispositif pour l'application de ce procédé

Publication

EP 2660555 A3 20141008 (EN)

Application

EP 13460026 A 20130502

Priority

PL 39909712 A 20120504

Abstract (en)

[origin: EP2660555A2] A method of detaching a monolith from rock massif, consisting in that, depending on length and volume of the monolith (1) to be detached from rock massif (2) or concrete block (1) to be split, shot holes (3) are drilled in such massif or block with identical diameter $d = 25\text{--}75$ mm, identical distance between holes $c = 10\text{--}25$ cm, identical distance $e = 10\text{--}15$ cm of the outermost holes (4) from the edges (5 and 6) of the main massif (2) and identical distance $k = 10\text{--}20$ cm from lower plane (7) of the monolith (1) to be detached. Next, depending on the diameter (d) and number of holes (3), prepared is the same number of identical gas-generating devices (8) having casings, made preferably of polyethylene, adapted to diameter and height of the holes and equipped with initiating device (11) provided with pyrotechnic igniter (16) equipped with electric wires (17) that is surrounded with binary mixture (12) containing 88-105 parts by weight of sodium chlorate (NaClO_3) and 0.8-1.5 parts by weight of iron oxide, functioning as a catalyst of burning. Further, 7.8-13.5 parts by weight of fuel oil (19) for diesel engines is injected into the mixture by means of any commonly known method and the so prepared and tightly closed gas-generating devices (8') are placed, depending on height (H) of the shot holes (3), in at least one row on bottoms of the holes in such a way that their electric wires (17) protrude above the surface of the monolith to be detached, and further the commonly known operations are performed related to sealing the holes by means of clay, sand, or their mixture and igniting said ternary mixture initiated by initiating devices (11) and generating heat and gas with pressure amounting to 95-105 MPa resulting in detachment of monolith (1) from rock massif (2) or avalanche massif or splitting a concrete block (1).

IPC 8 full level

F42D 3/04 (2006.01); **C06B 29/06** (2006.01); **C06B 29/08** (2006.01); **F42B 3/00** (2006.01)

CPC (source: EP)

C06B 29/06 (2013.01); **C06B 29/08** (2013.01); **F42B 3/00** (2013.01); **F42D 3/04** (2013.01)

Citation (search report)

- [AD] UA 13372 U 20060315 - ZROBOK ROSTYSLAV BORYSOVYCH [UA]
- [AD] UA 13373 U 20060315 - ZROBOK ROSTYSLAV BORYSOVYCH [UA]
- [A] US 598096 A 18980201
- [A] DE 32911 C

Cited by

CN107144192A; CN109490055A; CN108506040A; CN105803891A

Designated contracting state (EPC)

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

DOCDB simple family (publication)

EP 2660555 A2 20131106; **EP 2660555 A3 20141008**; **EP 2660555 B1 20160217**; ES 2564515 T3 20160323; HR P20160277 T1 20160408; PL 222015 B1 20160630; PL 399097 A1 20131112; RS 54633 B1 20160831; SK 288386 B6 20160801; SK 500342012 A3 20140603

DOCDB simple family (application)

EP 13460026 A 20130502; ES 13460026 T 20130502; HR P20160277 T 20160317; PL 39909712 A 20120504; RS P20160191 A 20130502; SK 500342012 A 20120904