

Title (en)

Arrangement and Method in Rock Breaking

Title (de)

Anordnung und Verfahren beim Aufbrechen von Gestein

Title (fr)

Dispositif et procédé dans un système d'abattage de roche

Publication

**EP 2811110 A1 20141210 (EN)**

Application

**EP 13171043 A 20130607**

Priority

EP 13171043 A 20130607

Abstract (en)

An arrangement and method for measuring rock breaking dynamics. The arrangement comprises at least one component of a rock breaking system, the component being subjected to stress during rock breaking, at least one element at least part of which is arranged into a state of persistent magnetization, and at least one measuring member for measuring at least one parameter of rock breaking dynamics on the basis of a change in a magnetic property of the component.

IPC 8 full level

**E21B 44/00** (2006.01); **E21B 7/02** (2006.01)

CPC (source: EP)

**E21B 7/025** (2013.01); **E21B 44/00** (2013.01)

Citation (applicant)

- US 4671366 A 19870609 - UITTO VESA [FI], et al
- DE 19932838 A1 20010118 - HILTI AG [LI]
- US 6356077 B1 20020312 - SCHAER ROLAND [CH], et al

Citation (search report)

- [XDY] US 4671366 A 19870609 - UITTO VESA [FI], et al
- [Y] DE 19932838 A1 20010118 - HILTI AG [LI]

Cited by

EP3266975A1; CN107587839A; EP4276438A1; CN109312617A; EP3472427A1; AU2017285884B2; WO2023218013A1; WO2022139654A1; US11459872B2; WO2017217905A1; KR20180006283A; US10550685B2; WO2022139655A1; EP3472427B1

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

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

**EP 2811110 A1 20141210; EP 2811110 B1 20170920**; AU 2014202974 A1 20150115; AU 2014202974 B2 20160623; CN 104236762 A 20141224; JP 2014237217 A 20141218; JP 5767368 B2 20150819

DOCDB simple family (application)

**EP 13171043 A 20130607**; AU 2014202974 A 20140602; CN 201410250032 A 20140606; JP 2014117892 A 20140606