

Title (en)

DIRECT DRILL BIT DRIVE FOR TOOLS ON THE BASIS OF A HEAT ENGINE

Title (de)

MEISSELDIREKTANTRIEB FÜR WERKZEUGE AUF BASIS EINER WÄRMEKRAFTMASCHINE

Title (fr)

ENTRAÎNEMENT DIRECT DE TRÉPAN POUR DES OUTILS SUR LA BASE D'UN MOTEUR THERMIQUE

Publication

**EP 2633147 B1 20160629 (DE)**

Application

**EP 11813758 A 20111021**

Priority

- DE 102010050244 A 20101030
- DE 2011001878 W 20111021

Abstract (en)

[origin: CA2816470A1] In a direct drill bit drive for tools for comminuting brittle materials and penetrating into brittle materials by percussive impact on the basis of a heat engine operated with a gaseous working medium, the heat engine is a hot gas engine operating in accordance with a real Stirling cycle process.

IPC 8 full level

**E21B 4/06** (2006.01); **F01B 11/00** (2006.01); **F25B 9/14** (2006.01)

CPC (source: EP RU US)

**E21B 4/06** (2013.01 - EP RU US); **E21B 4/14** (2013.01 - US); **F01B 11/00** (2013.01 - RU US); **F02G 1/0435** (2013.01 - EP RU US)

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)

**DE 102010050244 A1 20120503; DE 102010050244 B4 20131017**; AU 2011320466 A1 20130620; AU 2011320466 A2 20130801; AU 2011320466 B2 20170316; BR 112013010636 A2 20160809; CA 2816470 A1 20120503; CA 2816470 C 20180206; DK 2633147 T3 20161017; EP 2633147 A2 20130904; EP 2633147 B1 20160629; NZ 611240 A 20150327; RU 2013124966 A 20141210; RU 2601633 C2 20161110; US 2013220656 A1 20130829; US 9328559 B2 20160503; WO 2012055392 A2 20120503; WO 2012055392 A3 20130404; ZA 201303854 B 20140430

DOCDB simple family (application)

**DE 102010050244 A 20101030**; AU 2011320466 A 20111021; BR 112013010636 A 20111021; CA 2816470 A 20111021; DE 2011001878 W 20111021; DK 11813758 T 20111021; EP 11813758 A 20111021; NZ 61124011 A 20111021; RU 2013124966 A 20111021; US 201113882509 A 20111021; ZA 201303854 A 20130528