

Title (en)

METHOD FOR CASTING A CAST PART PROVIDED WITH AT LEAST ONE PASSAGE OPENING

Title (de)

VERFAHREN ZUM GIEßEN EINES MIT MINDESTENS EINER DURCHGANGSÖFFNUNG VERSEHENEN GUSSTEILS

Title (fr)

PROCÉDÉ DE COULÉE D'UNE PIÈCE COULÉE MUNIE D'AU MOINS UNE OUVERTURE DE PASSAGE

Publication

**EP 2844409 A1 20150311 (DE)**

Application

**EP 13719081 A 20130423**

Priority

- DE 102012103884 A 20120503
- EP 2013058396 W 20130423

Abstract (en)

[origin: CA2872082A1] According to the invention, in order to produce cast parts having passage openings and having optimized mechanical properties with low equipment expense, the following work steps are performed a) providing a casting mold (2), in which at least one casting core (8-19) for forming the passage opening (01, 02) is present, wherein the casting core (8-19) is made of a molding material comprising a binder, which molding material decomposes under the influence of force or temperature, b) pouring the metal melt (S) into the casting mold (2) to the cast part (Z1, Z2), c) cooling the cast part (Z1, Z2) in the casting mold (2) to a temperature that is below the liquidus temperature of the metal melt (S) but above a minimum temperature down to which a higher-strength microstructure is formed when accelerated cooling is performed, d) producing a passage channel (G1, G2), that leads through the passage opening (01, 02) of the cast part (Z1, Z2), which passage channel opens at an outside of the casting mold (2), in that the binder of the molding material, from which the casting core (8-19) forming the passage opening (01, 02) burns due to the heat input into the casting mold during the pouring of the metal melt into the casting mold, or in that the casting core (8-19) forming the particular passage opening (01, 02) and the areas of the casting mold (2) arranged in the extension (V1, V2) of the casting core are at least partially mechanically destroyed, e) cooling the cast part (Z1, Z2) in the casting mold (2) while a cooling medium (M1, M2) flows through the passage channel (G1, G2).

IPC 8 full level

**B22C 9/10** (2006.01); **B22C 5/08** (2006.01); **B22C 9/02** (2006.01); **B22D 27/04** (2006.01); **B22D 29/00** (2006.01); **B22D 30/00** (2006.01)

CPC (source: CN EP KR RU US)

**B22C 5/085** (2013.01 - CN EP US); **B22C 9/02** (2013.01 - CN EP US); **B22C 9/10** (2013.01 - RU); **B22C 9/103** (2013.01 - CN EP US); **B22D 15/02** (2013.01 - US); **B22D 27/04** (2013.01 - CN EP KR RU US); **B22D 29/00** (2013.01 - KR); **B22D 29/001** (2013.01 - CN EP US); **B22D 29/003** (2013.01 - CN US); **B22D 30/00** (2013.01 - CN EP KR US)

Citation (search report)

See references of WO 2013164225A1

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)

**DE 102012103884 A1 20131107**; BR 112014026332 A2 20170627; BR 112014026332 B1 20191008; CA 2872082 A1 20131107; CA 2872082 C 20160712; CN 104302423 A 20150121; CN 104302423 B 20170308; DK 2844409 T3 20160118; EP 2844409 A1 20150311; EP 2844409 B1 20151007; ES 2557031 T3 20160121; HU E027061 T2 20160829; IN 7844DEN2014 A 20150424; JP 2015515926 A 20150604; JP 5857360 B2 20160210; KR 101615709 B1 20160427; KR 20140139133 A 20141204; MX 2014012714 A 20150408; MX 362898 B 20190225; PL 2844409 T3 20160630; PT 2844409 E 20160122; RU 2584842 C1 20160520; US 2015122447 A1 20150507; US 9272328 B2 20160301; WO 2013164225 A1 20131107; ZA 201406842 B 20151223

DOCDB simple family (application)

**DE 102012103884 A 20120503**; BR 112014026332 A 20130423; CA 2872082 A 20130423; CN 201380023181 A 20130423; DK 13719081 T 20130423; EP 13719081 A 20130423; EP 2013058396 W 20130423; ES 13719081 T 20130423; HU E13719081 A 20130423; IN 7844DEN2014 A 20140919; JP 2015509370 A 20130423; KR 20147031569 A 20130423; MX 2014012714 A 20130423; PL 13719081 T 20130423; PT 13719081 T 20130423; RU 2014148594 A 20130423; US 201314397997 A 20130423; ZA 201406842 A 20140918