

Title (en)
DEVICE FOR SHELL-MOULDING A METAL ALLOY

Title (de)
VORRICHTUNG ZUR SCHALENFORMUNG EINER METALLLEGIERUNG

Title (fr)
DISPOSITIF POUR LE MOULAGE EN COQUILLE D'UN ALLIAGE MÉTALLIQUE

Publication
EP 3448599 A1 20190306 (FR)

Application
EP 17720104 A 20170426

Priority
• FR 1670196 A 20160426
• EP 2017059998 W 20170426

Abstract (en)
[origin: CA3021395A1] A method for shell-moulding a metal in a cavity, implementing a mould comprising: a. two dies (210, 220) each comprising a block (311) carrying a moulding surface (211, 221), such that said moulding surfaces delimit a moulding cavity; b. in at least one of the dies, an inductor (341, 441) running through a pipe (340) provided in the block (311) carrying the moulding surface; c. a generator for powering said inductor (341, 441) with a high-frequency current so as to heat the walls of the pipe (340); d. the inductor (341, 41) being positioned at a distance d from the moulding surface such that the conduction of heat from the wall of the pipe (340) comprising the inductor to the moulding surface, through the thickness of said block (311), produces a uniform distribution of the temperature over the moulding surface; the method comprising the steps of: i. filling (110) the moulding cavity by injecting metal into said cavity, said cavity being preheated to a nominal preheating temperature T_I (105) by circulating a high-frequency electric current through the inductor (341); ii. solidifying the metal in the moulding cavity; iii. opening (120) the mould and ejecting (130) the part; v. spraying (140) the moulding surfaces of the moulding cavity, the mould being open, with a demoulding agent; vi. closing the mould and heating (150) the cavity to the temperature T_I (105); characterised in that it comprises, after the step iii) of opening the mould and before the step v) of spraying the moulding surfaces, a step consisting of: iv. heating the moulding surfaces of the cavity by induction when the part is no longer in contact with said surfaces, and continuing said heating during the spraying step v).

IPC 8 full level
B22C 9/06 (2006.01); **B22D 17/00** (2006.01); **B22D 17/02** (2006.01); **B22D 17/22** (2006.01); **B22D 21/00** (2006.01)

CPC (source: EP KR US)
B22C 9/061 (2013.01 - EP US); **B22C 9/065** (2013.01 - EP US); **B22D 17/007** (2013.01 - EP KR US); **B22D 17/2007** (2013.01 - KR); **B22D 17/2209** (2013.01 - EP US); **B22D 17/2218** (2013.01 - EP KR US); **B22D 17/32** (2013.01 - KR); **B22D 21/007** (2013.01 - EP US)

Citation (search report)
See references of WO 2017186824A1

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)
FR 3050390 A1 20171027; **FR 3050390 B1 20200124**; CA 3021395 A1 20171102; CA 3021395 C 20230926; CN 109195728 A 20190111; CN 109195728 B 20210122; EP 3448599 A1 20190306; EP 3448599 B1 20200617; JP 2019522566 A 20190815; JP 6957512 B2 20211102; KR 102352445 B1 20220117; KR 20180137007 A 20181226; US 10773299 B2 20200915; US 2019118250 A1 20190425; WO 2017186824 A1 20171102

DOCDB simple family (application)
FR 1670196 A 20160426; CA 3021395 A 20170426; CN 201780026186 A 20170426; EP 17720104 A 20170426; EP 2017059998 W 20170426; JP 2018556878 A 20170426; KR 20187033964 A 20170426; US 201716094597 A 20170426