

Title (en)

DEVICE AND METHOD FOR IMPROVED COOLING OF A METALLIC ALLOY IN A SAND MOLD

Title (de)

VORRICHTUNG UND VERFAHREN ZUR VERBESSERTEN KÜHLUNG EINER METALLISCHEN LEGIERUNG IN EINER SANDFORM

Title (fr)

DISPOSITIF ET PROCÉDÉ POUR AMÉLIORER LE REFROIDISSEMENT D'UN ALLIAGE MÉTALLIQUE DANS UN MOULE EN SABLE

Publication

EP 3539687 A1 20190918 (EN)

Application

EP 17382911 A 20171227

Priority

EP 17382911 A 20171227

Abstract (en)

The device comprises a sand mold (1) with an inner cavity (2) fillable with a metallic alloy to be solidified inside the inner cavity, thermal energy extracting means (3) embedded at least partially in the sand mold (1) and comprising at least a conduct (32) and a coolant inside the conduct (32), movable in the conducts for extracting heat from the metallic alloy. A method is proposed comprising the steps of providing a sand mold comprising an inner cavity (2), providing thermal energy extracting means (3), the thermal energy extracting means (3) comprising at least a conduct (32), placing the thermal energy extracting means at least partially embedded in the sand mold (1), filling the inner cavity (2) with a metallic alloy to be solidified inside the inner cavity and circulating a coolant inside the conduct (32) for extracting heat from the metallic alloy.

IPC 8 full level

B22C 9/02 (2006.01); **B22D 27/04** (2006.01)

CPC (source: EP)

B22C 9/02 (2013.01); **B22D 27/04** (2013.01)

Citation (applicant)

- US 2005056395 A1 20050317 - NOGUCHI HIROYUKI [JP], et al
- US 2005103407 A1 20050519 - MASUDA TSUTOMU [JP], et al
- DE 102014101609 A1 20150813 - ERTL AUTOMATION GMBH & CO KG [DE]
- JP 2002307158 A 20021022 - SINTOKOGIO LTD

Citation (search report)

- [X] EP 2158987 A1 20100303 - PEUGEOT CITROEN AUTOMOBILES SA [FR]
- [X] US 4729419 A 19880308 - NAKAMURA SHIRO [JP], et al
- [X] JP H01157758 A 19890621 - MITSUBISHI HEAVY IND LTD
- [X] JP S62220241 A 19870928 - TOYOTA MOTOR CORP
- [X] JP S61176465 A 19860808 - MITSUBISHI HEAVY IND LTD

Cited by

CN114012071A; CN114951548A; CN115945638A

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 3539687 A1 20190918

DOCDB simple family (application)

EP 17382911 A 20171227