

Title (en)

A METHOD OF CONTROLLING THE SOLIDIFICATION PROCESS OF CONTINUOUSLY CAST METALS AND ALLOYS AND A DEVICE FOR IMPLEMENTING THE METHOD

Title (de)

VERFAHREN ZUR STEUERUNG DES ERSTARRUNGSVORGANGS VON STRANGGEGOSSENEN METALLEN UND LEGIERUNGEN SOWIE VORRICHTUNG ZUR DURCHFÜHRUNG DES VERFAHRENS

Title (fr)

PROCÉDÉ PERMETTANT DE COMMANDER LE PROCESSUS DE SOLIDIFICATION DE MÉTAUX ET D'ALLIAGES COULÉS EN CONTINU ET DISPOSITIF PERMETTANT DE METTRE EN UVRE LE PROCÉDÉ

Publication

EP 3238856 B1 20190612 (EN)

Application

EP 17168423 A 20170427

Priority

SK 500522016 U 20160429

Abstract (en)

[origin: EP3238856A1] It regards alloys, in particular steel, that are paramagnetic around the liquidus temperature with an aim to support formation of columnar grains, suppression of forming polyhedral grains, refining a primary structure and targeted intervention into formation and distribution of primary and accompanying structural components. The process control is applied in the entire molten metal volume that solidifies under the effect of linear magnetic field having induction of 0.04 to 03 T. The process control of the solidification of continuously cast steel is applied in the entire molten metal volume, magnetically treated molten metal is transported into from the active zone of an electromagnet generating linear magnetic field having induction of 0.04 to 03 T by transportation motion during 5 to 10 seconds with velocity of 0.1 to 0.6 m.s⁻¹, wherein motion of the magnetically treated molten metal may be produced in any manner, in particular by a linear motor or conductively, by interaction of magnetic field of the electromagnet and direct current of 500 to 2200 A separately conducted into a billet by rollers closely below a crystalliser and by rollers below the electromagnet.

IPC 8 full level

B22D 11/115 (2006.01); **B22D 11/12** (2006.01)

CPC (source: EP)

B22D 11/115 (2013.01); **B22D 11/122** (2013.01)

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)

EP 3238856 A1 20171101; **EP 3238856 B1 20190612**; MA 44396 A 20190123; SK 500522016 U1 20170602; SK 7957 Y1 20171204

DOCDB simple family (application)

EP 17168423 A 20170427; MA 44396 A 20170427; SK 500522016 U 20160429