

Title (en)
CRUCIBLE SKIMMING, STIRRING AND SAMPLE TAKING STATION

Title (de)
TIEGEL-ENTSCHLACKUNGS-, RÜHR- UND PROBENNAHMESTATION

Title (fr)
STATION POUR ÉCRÉMER, AGITER ET PRÉLÈVEMENT D'ÉCHANTILLON DANS UN CREUSET

Publication
EP 3165618 B1 20180801 (EN)

Application
EP 15382539 A 20151103

Priority
EP 15382539 A 20151103

Abstract (en)
[origin: EP3165618A1] Crucible skimming, stirring and sample taking station, for removing the dross from molten aluminum in a crucible (3), which has a robot (1) with an articulated arm (2), position detecting means (4) connected to the robot (1) for detection of the position of the crucible (3) on the horizontal plane X, Y, a skimming tool (6) for removing the bath from the molten aluminum in the crucible (3), a collecting box (8) in which the robot (1) throws away the bath removed from the crucible (3), a reactive dosifying system (12) which adds reactive components into the molten aluminum of the crucible (3), a stirring tool (7), a sample taking tool (10) and a control desk (11) for the control of the station. The articulated arm (2) of the robot (1) is configured to take and move in the three dimensions X, Y, Z the tools (6,7,10).

IPC 8 full level
B22D 43/00 (2006.01); **C22B 21/06** (2006.01)

CPC (source: EP)
B22D 43/007 (2013.01)

Citation (opposition)

Opponent : STAS, Inc.

- US 6375712 B1 20020423 - FORBERG HELGE O [US], et al
- US 5536295 A 19960716 - SLOVICH CHARLES M [US]
- EP 1623778 A1 20060208 - MECCANO SYSTEM S R L [IT]
- EP 2626685 A1 20130814 - SIEMENS VAI METALS TECH GMBH [AT]
- WO 2008124840 A1 20081016 - INDUCTOTHERM CORP [US], et al
- DE 102009051145 A1 20100506 - SMS SIEMAG AG [DE]
- JP 2011033315 A 20110217 - TOYOTA MOTOR CORP
- EP 1798007 B1 20080618 - ABB RESEARCH LTD [CH]
- WO 2010060475 A1 20100603 - ABB RESEARCH LTD [CH], et al
- "ARMS Systems", LNDUCTOTHERM CORP., 24 May 2015 (2015-05-24), pages 1 - 3, XP055589228, Retrieved from the Internet <URL:<https://web.archive.org/>>
- HAUGEN ET AL.: "Crucible fluxing with Hycast? RAM - effect on metal quality and operational cost.", MATERIALS SCIENCE FORUM, vol. 693, July 2011 (2011-07-01), pages 44 - 53, XP055589232
- "Smelter Trending & Handling - Simulation & Photos video and description", ROBOTIC AUTOMATION P/L, 18 February 2015 (2015-02-18), XP054979394, Retrieved from the Internet <URL:<https://www.youtube.com/watch?v=TqYUXpMWP2M>>
- "Operational experience with a large capacity integrated TAC (treatment of aluminium in a crucible) and a skimmer", LIGHT METALS 2009, 2009, pages 755 - 760, XP055589243

Cited by

US11473842B2; CN109648051A; CN111923062A; CN107868923A; CN112247648A; CN115479800A; CN108277363A; CN111923063A; JP2019105389A; CN111480046A; WO2022095239A1; WO2019116729A1; WO2022095238A1

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 3165618 A1 20170510; EP 3165618 B1 20180801; ES 2694161 T3 20181218

DOCDB simple family (application)

EP 15382539 A 20151103; ES 15382539 T 20151103