

Title (en)

HYBRID COOLING NOZZLE APPARATUS, AND METHOD FOR CONTROLLING COOLING NOZZLE OF CONTINUOUS CASTING EQUIPMENT USING SAME

Title (de)

HYBRIDKÜHLUNGSDÜSENVORRICHTUNG UND VERFAHREN ZUR STEUERUNG EINER KÜHLDÜSE FÜR EINE STRANGGUSSVORRICHTUNG DAMIT

Title (fr)

APPAREIL DE BUSE DE REFROIDISSEMENT HYBRIDE ET PROCÉDÉ PERMETTANT DE COMMANDER UNE BUSE DE REFROIDISSEMENT D'UN ÉQUIPEMENT DE COULÉE CONTINUE QUI UTILISE CE DERNIER

Publication

EP 2937162 B1 20200304 (EN)

Application

EP 13864279 A 20131219

Priority

- KR 20120151257 A 20121221
- KR 2013011854 W 20131219

Abstract (en)

[origin: EP2937162A1] A hybrid cooling nozzle apparatus is provided. The apparatus includes hybrid nozzles provided in a segment of a continuous casting machine to spray cooling water in a mist-spraying mode or a water-jet spraying mode onto a metal strip passing through the segment. At least one speed sensor is installed in the segment to detect the speed of the metal strip passing through the segment. A controller is configured to select the spraying mode of the hybrid nozzles depending on the received speed of the metal strip, and control a pressure and a flow rate of the cooling water and air, respectively, to be supplied to the hybrid nozzles by controlling a cooling water supply and an air supply.

IPC 8 full level

B22D 11/124 (2006.01); **B22D 11/22** (2006.01)

CPC (source: EP KR)

B22D 11/124 (2013.01 - KR); **B22D 11/1246** (2013.01 - EP); **B22D 11/22** (2013.01 - KR); **B22D 11/225** (2013.01 - EP)

Cited by

CN105642854A; CN113165060A; US11577306B2

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 2937162 A1 20151028; EP 2937162 A4 20160824; EP 2937162 B1 20200304; CN 104884189 A 20150902; CN 104884189 B 20170728; KR 101421841 B1 20140722; KR 20140081471 A 20140701; WO 2014098490 A1 20140626

DOCDB simple family (application)

EP 13864279 A 20131219; CN 201380066963 A 20131219; KR 20120151257 A 20121221; KR 2013011854 W 20131219