

Title (en)

APPARATUS AND METHOD FOR APPLYING A LAYER TO A FLAT STEEL PRODUCT

Title (de)

VORRICHTUNG UND VERFAHREN ZUM ZUM AUFBRINGEN EINER SCHICHT AUF EIN STAHLFLACHPRODUKT

Title (fr)

DISPOSITIF ET PROCÉDÉ D'APPLICATION D'UNE COUCHE SUR UN PRODUIT PLAT EN ACIER

Publication

EP 4299783 A1 20240103 (DE)

Application

EP 22182309 A 20220630

Priority

EP 22182309 A 20220630

Abstract (en)

[origin: WO2024002821A1] The invention relates to a device (150) for applying a layer (10) to a front and/or rear side of a flat steel product (100), comprising: a zinc-alloy melt pool (11) with an inlet side (E) and an outlet side (A); a stripping nozzle device (14) with at least one gas nozzle (15) for blowing off the front or rear side of the flat steel product (100) with gas (G), wherein the stripping nozzle device (14) is arranged in the region of the outlet side (A); a water vapour device (50) which is designed to output gaseous water vapour and to provide a controlled water vapour atmosphere in the proximity (NB) of the front and/or rear side of the flat steel product (100), wherein the controlled water vapour atmosphere has an absolute local humidity that is greater than 1 g/m³ and lower than 300 g/m³.

IPC 8 full level

C23C 2/06 (2006.01); **C23C 2/00** (2006.01); **C23C 2/14** (2006.01); **C23C 2/16** (2006.01); **C23C 2/18** (2006.01); **C23C 2/20** (2006.01)

CPC (source: EP)

C23C 2/003 (2013.01); **C23C 2/06** (2013.01); **C23C 2/14** (2013.01); **C23C 2/16** (2013.01); **C23C 2/18** (2013.01); **C23C 2/20** (2013.01); **C23C 2/50** (2022.08); **C23C 2/51** (2022.08); **C23C 2/52** (2022.08); **C23C 2/525** (2022.08)

Citation (applicant)

- WO 2014033153 A1 20140306 - VOESTALPINE STAHL GMBH [AT]
- EP 0172682 B1 19890201
- JP 2020100886 A 20200702 - NIPPON STEEL CORP
- EP 13826634 A 20131220
- JP 2008256208 A 20081023 - VOLVO CONSTR EQUIP AB
- C.V. TU ET AL.: "Experimental Thermal and Fluid Science", vol. 16, 1996, ELSEVIER SCIENCE INC., article "Wall Pressure and Shear Stress Measurements Beneath an Impinging Jet", pages: 364 - 373

Citation (search report)

- [XAI] EP 0172682 A1 19860226 - ARMCO INC [US]
- [XAI] DE 1521405 A1 19690821 - NAT STEEL CORP
- [XAI] DE 3933244 C1 19900613
- [A] DE 2709551 A1 19780907 - INLAND STEEL CO

Cited by

EP4299785A1; WO2024002824A1

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

Designated validation state (EPC)

KH MA MD TN

DOCDB simple family (publication)

EP 4299783 A1 20240103; WO 2024002821 A1 20240104

DOCDB simple family (application)

EP 22182309 A 20220630; EP 2023066811 W 20230621