

Title (en)

METHOD AND SPRAYING APPARATUS FOR THERMAL SURFACE TREATMENT OF A METAL PRODUCT

Title (de)

VERFAHREN UND SPRÜHEINRICHTUNG ZUR THERMISCHEN OBERFLÄCHENBEHANDLUNG EINES METALLISCHEN PRODUKTS

Title (fr)

PROCÉDÉ ET APPAREIL DE PULVÉRISATION POUR LE TRAITEMENT THERMIQUE DE SURFACE D'UN PRODUIT MÉTALLIQUE

Publication

EP 4214010 B1 20240228 (DE)

Application

EP 21772737 A 20210831

Priority

- DE 102020211720 A 20200918
- EP 2021073941 W 20210831

Abstract (en)

[origin: WO2022058152A1] The invention relates to a method and a spraying apparatus (10) for the thermal surface treatment of a metal product (1). Here, the metal product (1) is moved in a transport direction (T) through a treatment section (12) of the spraying apparatus (10) equipped with cooling nozzles (16) and at the same time cooling fluid is applied through the cooling nozzles (16) of the spraying apparatus (10) to the surfaces of the metal product (1), the metal product (1) - as viewed in the transport direction (T) of the metal product (1) - having a front portion (4) and a following, rear portion (5). The surfaces of the metal product (1) are cooled within the spraying apparatus (10) in such a way that the rear portion (5) of the metal product (1) is cooled to a greater degree than the front portion (4) of the product. As a result, a substantially uniform ferrite content is produced in the material of the metal product (1) in a predetermined depth hereof over a length region extending between the front portion (4) and the rear portion (5).

IPC 8 full level

B22D 11/124 (2006.01); **B21B 37/74** (2006.01); **B22D 11/22** (2006.01)

CPC (source: EP US)

B22D 11/124 (2013.01 - EP); **B22D 11/1243** (2013.01 - EP); **B22D 11/1246** (2013.01 - EP US); **B22D 11/225** (2013.01 - EP US)

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)

DE 102020211720 A1 20220324; EP 4214010 A1 20230726; EP 4214010 B1 20240228; US 2023330743 A1 20231019; WO 2022058152 A1 20220324

DOCDB simple family (application)

DE 102020211720 A 20200918; EP 2021073941 W 20210831; EP 21772737 A 20210831; US 202118025308 A 20210831