

Title (en)

QUENCHING DEVICE AND METAL SHEET MANUFACTURING METHOD

Title (de)

ABSCHRECKVORRICHTUNG UND METALLBLECHHERSTELLUNGSVERFAHREN

Title (fr)

DISPOSITIF DE TREMPER ET PROCÉDÉ DE FABRICATION DE FEUILLE MÉTALLIQUE

Publication

EP 3943619 A4 20220504 (EN)

Application

EP 20784745 A 20200317

Priority

- JP 2019067348 A 20190329
- JP 2020011751 W 20200317

Abstract (en)

[origin: EP3943619A1] Provided are a quenching apparatus for a metal sheet with which it is possible to achieve sufficient cooling rate of the metal sheet when the metal sheet passes through a water-blowing device and to prevent a cooling rate from varying in accordance with the position in the metal sheet and a method for manufacturing a metal sheet by using the quenching apparatus for a metal sheet. The quenching apparatus according to the present invention is a quenching apparatus for dipping a high-temperature metal sheet in a liquid and for thereby cooling the metal sheet, the apparatus including a dipping tank for containing the liquid in which the metal sheet is dipped, a liquid-blowing device having plural nozzles for blowing a cooling liquid onto the metal sheet from both sides of the metal sheet, at least part of the liquid-blowing device being placed in the liquid contained in the dipping tank, and pairs of restraining rolls for restraining the metal sheet, each of the pairs of the restraining rolls being placed on a corresponding one of an upstream side and a downstream side in a traveling direction of the liquid-blowing device.

IPC 8 full level

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CPC (source: EP KR)

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Citation (search report)

- [X] EP 3399056 A1 20181107 - JFE STEEL CORP [JP]
- [A] EP 0117083 A1 19840829 - NIPPON STEEL CORP [JP]
- [A] JP S59136427 A 19840806 - SUMITOMO METAL IND
- [A] WO 2017115742 A1 20170706 - JFE STEEL CORP [JP]
- [A] EP 0418166 A1 19910320 - LORRAINE LAMINAGE [FR]
- See references of WO 2020203261A1

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

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BA ME

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DOCDB simple family (application)

EP 20784745 A 20200317; CN 202080026372 A 20200317; JP 2020011751 W 20200317; JP 2021511403 A 20200317; KR 20217030796 A 20200317; KR 20247018813 A 20200317