

Title (en)

METHOD AND FURNACE FOR THERMAL TREATMENT OF A HIGH-RESISTANCE STEEL STRIP INCLUDING A TEMPERATURE HOMOGENISATION CHAMBER

Title (de)

VERFAHREN UND OFEN FÜR DIE WÄRMEBEHANDLUNG EINES HOCHWIDERSTANDSFÄHIGEN STAHLBANDES, DER EINE TEMPERATUR-HOMOGENISIERUNGSKAMMER UMFASST

Title (fr)

PROCÉDÉ ET FOUR POUR LE TRAITEMENT THERMIQUE D'UNE BANDE D'ACIER DE HAUTE RÉSISTANCE COMPRENANT UNE CHAMBRE D'HOMOGENÉISATION EN TEMPÉRATURE

Publication

**EP 3686534 B1 20210310 (FR)**

Application

**EP 19218200 A 20191219**

Priority

BE 201905038 A 20190123

Abstract (en)

[origin: US2020232063A1] Method for thermally treating a scrolling steel strip (5), said method comprising the following steps: heating the strip (5) in a zone for heating with a direct flame (10); temperature homogenisation of the strip (5) in a homogenisation chamber (20) comprising at least one radiant heating tube (25), so as to homogenise the strip (5) in temperature after the passing thereof into the zone for heating with a direct flame (10) of the preceding step; oxidation of the strip (5) in an oxidation chamber (30) with an oxidising atmosphere having an oxygen volume concentration greater than 1%; reduction of the strip (5) in a reduction zone (40).

IPC 8 full level

**C21D 1/34** (2006.01); **C21D 1/52** (2006.01); **C21D 9/46** (2006.01); **C21D 9/56** (2006.01); **C23C 8/10** (2006.01); **C23C 8/18** (2006.01); **C23C 8/80** (2006.01); **F27B 9/28** (2006.01)

CPC (source: CN EP KR RU US)

**C21D 1/26** (2013.01 - CN); **C21D 1/34** (2013.01 - EP RU); **C21D 1/52** (2013.01 - CN EP RU US); **C21D 1/74** (2013.01 - CN); **C21D 1/76** (2013.01 - US); **C21D 1/773** (2013.01 - US); **C21D 9/46** (2013.01 - EP RU); **C21D 9/56** (2013.01 - RU); **C21D 9/561** (2013.01 - CN EP KR US); **C21D 9/562** (2013.01 - US); **C21D 9/563** (2013.01 - KR); **C23C 8/10** (2013.01 - EP RU); **C23C 8/18** (2013.01 - EP RU); **C23C 8/80** (2013.01 - EP RU); **F27B 9/28** (2013.01 - EP RU)

Citation (opposition)

Opponent : JOHN COCKERILL SA

- US 2017137906 A1 20170518 - FAN DONGWEI [US], et al
- US 2010173072 A1 20100708 - BORREL PIERRE-JEROME [FR]
- KR 20160085830 A 20160718 - ARCELORMITTAL [LU]
- WO 2016169918 A1 20161027 - COCKERILL MAINTENANCE & INGENIERIE SA [BE]
- EP 2458022 A1 20120530 - TATA STEEL UK LTD [GB]
- US 2009199931 A1 20090813 - LEUSCHNER RONNY [DE], et al
- "INDUSTRIAL COMBUSTION TESTING", article MICHAEL FLAMME: "24 Radiant 2011 Tube Burners", pages: 487 - 504, XP055893689

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EP4303516A1; WO2024008480A1

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DOCDB simple family (publication)

**EP 3686534 A1 20200729; EP 3686534 B1 20210310**; BE 1026986 A1 20200817; BE 1026986 B1 20200825; BR 102020001356 A2 20200804; CN 111471847 A 20200731; CN 111471847 B 20231031; ES 2874752 T3 20211105; KR 20200092253 A 20200803; MX 2019015493 A 20200728; RU 2019142708 A 20210621; RU 2019142708 A3 20211209; RU 2766264 C2 20220210; SI 3686534 T1 20210730; US 2020232063 A1 20200723; US 2024102124 A1 20240328

DOCDB simple family (application)

**EP 19218200 A 20191219**; BE 201905038 A 20190123; BR 102020001356 A 20200122; CN 201911325696 A 20191220; ES 19218200 T 20191219; KR 20190172013 A 20191220; MX 2019015493 A 20191218; RU 2019142708 A 20191220; SI 201930065 T 20191219; US 201916722637 A 20191220; US 202318532051 A 20231207