

Title (en)

COOLING METHOD FOR A HOT-ROLLED PRODUCT AND A CORRESPONDING COOLING-SECTION MODEL

Title (de)

KÜHLVERFAHREN FÜR EIN WARMGEWALZTES WALZGUT UND HIERMIT KORRESPONDIERENDES KÜHLSTRECKENMODELL

Title (fr)

PROCEDE DE REFROIDISSEMENT D'UN PRODUIT LAMINE A CHAUD ET MODELE DE LIGNE DE REFROIDISSEMENT CORRESPONDANT

Publication

**EP 1397523 B1 20070808 (DE)**

Application

**EP 02748572 A 20020607**

Priority

- DE 0202077 W 20020607
- DE 10129565 A 20010620

Abstract (en)

[origin: WO03000940A1] To determine the temperature progression ( $T_m(t)$ ) of a hot-rolled product (1) in a cooling section (5), a thermal-conduction equation of formula (I) is solved in a cooling-section model (4). In said equation,  $e$  represents the enthalpy,  $\lambda$  represents the thermal conductivity,  $p$  stands for the degree of phase transition,  $\rho$  represents the density,  $T$  represents the temperature of the rolled product at the rolled-product location and  $t$  represents the time.

IPC 8 full level

**B21B 45/02** (2006.01); **C21D 11/00** (2006.01); **B21B 37/76** (2006.01); **C21D 9/573** (2006.01)

CPC (source: EP US)

**B21B 37/76** (2013.01 - EP US); **C21D 11/005** (2013.01 - EP US); **B21B 2273/20** (2013.01 - EP US); **C21D 9/573** (2013.01 - EP US)

Cited by

CN103619501A; US10413950B2; US9815100B2; EP4119247A1; WO2023285078A1; EP3099430B1

Designated contracting state (EPC)

AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR

DOCDB simple family (publication)

**WO 03000940 A1 20030103**; AT E369443 T1 20070815; CN 1243617 C 20060301; CN 1463293 A 20031224; DE 10129565 A1 20030109; DE 10129565 B4 20040129; DE 10129565 C5 20071227; DE 50210648 D1 20070920; EP 1397523 A1 20040317; EP 1397523 B1 20070808; EP 1397523 B2 20100811; ES 2289120 T3 20080201; ES 2289120 T5 20110127; JP 2004530793 A 20041007; JP 4287740 B2 20090701; NO 20030561 D0 20030204; NO 20030561 L 20030204; US 2004006998 A1 20040115; US 6860950 B2 20050301

DOCDB simple family (application)

**DE 0202077 W 20020607**; AT 02748572 T 20020607; CN 02802165 A 20020607; DE 10129565 A 20010620; DE 50210648 T 20020607; EP 02748572 A 20020607; ES 02748572 T 20020607; JP 2003507320 A 20020607; NO 20030561 A 20030204; US 36995103 A 20030220