

Title (en)
METHOD AND FURNACE FOR HEAT TREATMENT

Title (de)
VERFAHREN UND OFEN FÜR WÄRMEBEHANDLUNG

Title (fr)
PROCEDE ET FOUR POUR TRAITEMENT THERMIQUE

Publication
EP 1589120 A4 20060222 (EN)

Application
EP 03812311 A 20031127

Priority
• JP 0315120 W 20031127
• JP 2002348639 A 20021129

Abstract (en)
[origin: EP1589120A1] A linear furnace body of a heat treating furnace (1) houses in its inside a preheating chamber (3), a heat treating chamber (4) and a soaking chamber (5) with partitioning doors (1 and 2) arranged between them, respectively. Series of independently-driven hearth rollers (6, 7 and 8) are arranged in the chambers, respectively. Upon preheating and soaking of a work W, the series of hearth rollers (6 and 8) in the preheating chamber (3) and the soaking chamber (5) are rotated forward and backward to vibrate the work W. Upon heating of the work W, the series of hearth rollers (7) in the heat treating chamber (4) is stopped. <IMAGE>

IPC 8 full level
C21D 1/00 (2006.01); **C21D 9/00** (2006.01); **F27B 9/02** (2006.01); **F27B 9/04** (2006.01); **F27B 9/24** (2006.01); **F27B 9/34** (2006.01); **F27B 9/40** (2006.01); **F27D 1/00** (2006.01); **F27D 19/00** (2006.01)

CPC (source: EP)
C21D 9/0018 (2013.01); **C21D 9/0056** (2013.01); **C21D 9/0062** (2013.01); **F27B 9/028** (2013.01); **F27B 9/045** (2013.01); **F27B 9/40** (2013.01); **F27D 1/0006** (2013.01); **F27D 19/00** (2013.01)

Citation (search report)
• [XY] US 4627814 A 19861209 - HATTORI FUMIHIKO [JP], et al
• [Y] US 4966547 A 19901030 - OKUYAMA TAKASHI [JP], et al
• [A] US 4932864 A 19900612 - MIYABE YOSHINAGA [JP]
• [PA] WO 03068997 A1 20030821 - DOWA MINING CO [JP], et al & EP 1475446 A1 20041110 - DOWA MINING CO [JP]
• See references of WO 2004050922A1

Cited by
CN104593577A; EP3196320A4; CN112775388A; WO2022218830A1; WO2022218829A1; US10900113B2; US11761074B2; WO2022218831A1

Designated contracting state (EPC)
DE ES FR GB IT

DOCDB simple family (publication)
EP 1589120 A1 20051026; EP 1589120 A4 20060222; EP 1589120 B1 20120606; JP 2004183013 A 20040702; JP 4330111 B2 20090916; WO 2004050922 A1 20040617

DOCDB simple family (application)
EP 03812311 A 20031127; JP 0315120 W 20031127; JP 2002348639 A 20021129