

Title (en)  
METHOD AND APPARATUS FOR PRODUCING HIGH RESISTANT RAILS

Publication  
**EP 0252895 B1 19921021 (FR)**

Application  
**EP 87870094 A 19870707**

Priority  
LU 86510 A 19860710

Abstract (en)  
[origin: US4810311A] Starting from a temperature at or above the A3 transformation point of the steel of the rail, the head of the rail is cooled to a temperature not lower than the Ms point at a rate lower than the critical quenching rate so that the head acquires a fine perlitic structure. Simultaneously the web is superficially cooled to the Ms point or below, at a rate greater than the head, so as to obtain a surface layer of martensite and/or bainite, and the surface cooling is controlled so that, at the end of controlled cooling, internal portions of the web not transformed to martensite and/or bainite retain sufficient heat to temper the surface layer during subsequent cooling to ambient temperature. At the same time the flange of the rail is cooled at a rate ensuring straightness of the rail.

IPC 1-7  
**C21D 9/04**

IPC 8 full level  
**C21D 1/19** (2006.01); **C21D 9/04** (2006.01)

CPC (source: EP US)  
**C21D 1/19** (2013.01 - EP US); **C21D 9/04** (2013.01 - EP US)

Citation (examination)  
PATENT ABSTRACTS OF JAPAN vol. 11, no. 315 (C-451)(2762) 14 octobre 1987; & JP-A-6299438 NIPPON KOKAN) 08.05.1987; & US-A-47 67475

Designated contracting state (EPC)  
AT BE DE ES FR GB IT

DOCDB simple family (publication)  
**EP 0252895 A2 19880113; EP 0252895 A3 19900718; EP 0252895 B1 19921021**; AT E81676 T1 19921115; CA 1307723 C 19920922; DE 3782280 D1 19921126; JP 2716127 B2 19980218; JP S6328824 A 19880206; LU 86510 A1 19880202; US 4810311 A 19890307

DOCDB simple family (application)  
**EP 87870094 A 19870707**; AT 87870094 T 19870707; CA 541732 A 19870709; DE 3782280 T 19870707; JP 17271387 A 19870710; LU 86510 A 19860710; US 7168987 A 19870709