

Title (en)
RAIL HAVING EXCELLENT FATIGUE CRACK PROPAGATION RESISTANCE CHARACTERISTICS, AND METHOD FOR PRODUCING SAME

Title (de)
SCHIENE MIT HERVORRAGENDEN ERMÜDUNGSRISSAUSBREITUNGSBESTÄNDIGKEITSEIGENSCHAFTEN UND VERFAHREN ZUR HERSTELLUNG DAVON

Title (fr)
RAIL PRÉSENTANT D'EXCELLENTE CARACTÉRISTIQUES DE RÉSISTANCE À LA PROPAGATION DE FISSURES PAR FATIGUE, ET SON PROCÉDÉ DE PRODUCTION

Publication
EP 4174191 A1 20230503 (EN)

Application
EP 21834151 A 20210601

Priority
• JP 2020111354 A 20200629
• JP 2021020871 W 20210601

Abstract (en)
Proposed is a rail having excellent fatigue damage resistance, particularly excellent fatigue crack propagation resistance characteristics and a preferable method for producing the same. The rail has a component composition comprising, on a mass basis, C: 0.80 to 1.30%, Si: 0.10 to 1.20%, Mn: 0.20 to 1.80%, P#0.035%, S: 0.0005 to 0.012%, Cr: 0.20 to 2.50% and the remainder being Fe and inevitable impurities and has $CP = X/R_{sub>A</sub>}$ of not more than 2500 (where $X = \{(10 \times [\%C]) + ([\%Si]/12) + ([\%Mn]/24) + ([\%Cr]/21)\}^{sup>5</sup>}$, and $[Y]$ is a content of an element Y (mass%), and $R_{sub>A</sub>}$ is a prior austenite grain size (μm)). In the production method of the rail, a raw steel material is heated to not higher than 1350°C and then hot-rolled such that a finish temperature is not lower than 900°C.

IPC 8 full level
C21D 8/00 (2006.01); **C22C 38/00** (2006.01); **C22C 38/38** (2006.01); **C22C 38/60** (2006.01)

CPC (source: EP KR US)
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Citation (search report)
See references of WO 2022004247A1

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