

Title (en)
HIGH TEMPERATURE BOLT MATERIAL

Title (de)
HOCHTEMPERATURBOLZENMATERIAL

Title (fr)
MATERIAU DE BOULON HAUTE TEMPERATURE

Publication
EP 1681359 A1 20060719 (EN)

Application
EP 04772713 A 20040827

Priority
• JP 2004012764 W 20040827
• JP 2003306103 A 20030829

Abstract (en)
A high temperature bolt material, characterized in that it is a ferrite steel comprising 8 wt % or more of Cr and having a tempered martensite structure and can be used in a high temperature region of higher than 500°C; and a method for producing the high temperature bolt material which comprises subjecting the above-mentioned steel material to a heat treatment comprising a quenching or normalizing at a temperature of 1000°C or higher and then to a tempering at a temperature of 730°C or higher. The above ferrite steel high temperature bolt material is excellent in characteristics of the resistance to stress relaxation.

IPC 1-7
C21D 9/00; **C22C 38/00**; **C22C 38/18**; **C22C 38/54**; **F01D 25/24**; **F02C 7/00**

IPC 8 full level
C21D 9/00 (2006.01); **C22C 38/00** (2006.01); **C22C 38/02** (2006.01); **C22C 38/04** (2006.01); **C22C 38/18** (2006.01); **C22C 38/22** (2006.01); **C22C 38/24** (2006.01); **C22C 38/26** (2006.01); **C22C 38/30** (2006.01); **C22C 38/32** (2006.01); **C22C 38/54** (2006.01); **F01D 25/24** (2006.01); **F02C 7/00** (2006.01); **C21D 1/18** (2006.01); **C21D 1/28** (2006.01); **C21D 6/00** (2006.01)

CPC (source: EP US)
C21D 9/0093 (2013.01 - EP US); **C22C 38/02** (2013.01 - EP US); **C22C 38/04** (2013.01 - EP US); **C22C 38/22** (2013.01 - EP US); **C22C 38/24** (2013.01 - EP US); **C22C 38/26** (2013.01 - EP US); **C22C 38/30** (2013.01 - EP US); **C22C 38/32** (2013.01 - EP US); **F01D 25/243** (2013.01 - EP US); **C21D 1/18** (2013.01 - EP US); **C21D 1/28** (2013.01 - EP US); **C21D 6/002** (2013.01 - EP US)

Cited by
CN106555036A; EP3719163A1; EP1988182A4; CN106884074A; EP3719159A1; WO2020200634A1; WO2020200608A1

Designated contracting state (EPC)
DE FR GB

DOCDB simple family (publication)
EP 1681359 A1 20060719; **EP 1681359 A4 20090311**; JP 2005076062 A 20050324; US 2008216927 A1 20080911; WO 2005021806 A1 20050310

DOCDB simple family (application)
EP 04772713 A 20040827; JP 2003306103 A 20030829; JP 2004012764 W 20040827; US 56948504 A 20040827