

Title (en)  
HIGH-STRENGTH ULTRA-FINE STEEL WIRE AND MANUFACTURING METHOD THEREFOR

Title (de)  
HOCHFESTER UND ULTRAFEINER STAHL DRAHT SOWIE HERSTELLUNGSVERFAHREN DAFÜR

Title (fr)  
FIL D'ACIER ULTRA-FIN À HAUTE RÉSISTANCE ET PROCÉDÉ DE FABRICATION ASSOCIÉ

Publication  
**EP 2447382 B1 20190306 (EN)**

Application  
**EP 10778818 A 20100421**

Priority  
• JP 2010002859 W 20100421  
• JP 2009148051 A 20090622

Abstract (en)  
[origin: US2011168302A1] The present invention provides a steel wire, including chemical components of: C: 0.7-1.2 mass %; Si: 0.05-2.0 mass %; and Mn: 0.2-2.0 mass %, with a balance including Fe and inevitable impurities, in which the steel wire has a pearlite structure, the average C concentration at a center portion of a ferrite phase in an outermost layer of the steel wire is 0.2 mass % or lower, and a residual compressive stress in the longitudinal direction of the steel wire in the outermost layer is 600 MPa or more.

IPC 8 full level  
**C22C 38/00** (2006.01); **C21D 7/02** (2006.01); **C21D 7/06** (2006.01); **C21D 8/06** (2006.01); **C21D 9/52** (2006.01); **C22C 38/02** (2006.01); **C22C 38/04** (2006.01); **C22C 38/12** (2006.01); **C22C 38/18** (2006.01); **C22C 38/24** (2006.01); **C22C 38/32** (2006.01); **C22C 38/40** (2006.01); **C22C 38/48** (2006.01); **C22C 38/58** (2006.01)

CPC (source: EP KR US)  
**C21D 7/02** (2013.01 - KR); **C21D 8/065** (2013.01 - EP KR US); **C21D 9/525** (2013.01 - EP KR US); **C22C 38/02** (2013.01 - EP KR US); **C22C 38/04** (2013.01 - EP KR US); **C22C 38/12** (2013.01 - EP US); **C22C 38/18** (2013.01 - EP US); **C22C 38/24** (2013.01 - EP US); **C22C 38/32** (2013.01 - EP US); **C22C 38/40** (2013.01 - EP US); **C22C 38/44** (2013.01 - KR); **C22C 38/46** (2013.01 - KR); **C22C 38/48** (2013.01 - EP KR US); **C22C 38/54** (2013.01 - KR); **C22C 38/58** (2013.01 - EP US); **C21D 7/02** (2013.01 - EP US); **C21D 2211/005** (2013.01 - EP KR US); **C21D 2211/009** (2013.01 - EP KR US)

Designated contracting state (EPC)  
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK SM TR

DOCDB simple family (publication)  
**US 2011168302 A1 20110714**; CN 102066599 A 20110518; CN 102066599 B 20131106; EP 2447382 A1 20120502; EP 2447382 A4 20170802; EP 2447382 B1 20190306; JP 4719320 B2 20110706; JP WO2010150450 A1 20121206; KR 101260598 B1 20130503; KR 20110020256 A 20110302; TW 201102443 A 20110116; TW I412608 B 20131021; WO 2010150450 A1 20101229

DOCDB simple family (application)  
**US 99416910 A 20100421**; CN 201080001860 A 20100421; EP 10778818 A 20100421; JP 2010002859 W 20100421; JP 2010540974 A 20100421; KR 20107028271 A 20100421; TW 99112013 A 20100416