

Title (en)  
STEEL WIRE FOR MECHANICAL STRUCTURAL PARTS

Title (de)  
STAHLDRAHT FÜR MECHANISCHE BAUTEILE

Title (fr)  
FIL D'ACIER POUR PIÈCES DE CONSTRUCTION MÉCANIQUE

Publication  
**EP 3279355 A4 20180905 (EN)**

Application  
**EP 16772311 A 20160316**

Priority  
• JP 2015073776 A 20150331  
• JP 2016058379 W 20160316

Abstract (en)  
[origin: EP3279355A1] An object of the present invention is to provide a steel wire for mechanical structural parts that is reduced in deformation resistance and improved in crack resistance during cold working, and thus exhibits excellent cold workability. The steel wire for mechanical structural parts of the present invention is a steel wire containing, in mass%, 0.3 to 0.6% of C, 0.05 to 0.5% of Si, 0.2 to 1.7% of Mn, more than 0% and 0.03% or less of P, 0.001 to 0.05% of S, 0.005 to 0.1% of Al, and 0 to 0.015% of N, the balance being iron and inevitable impurities, wherein steel of the steel wire has a metal structure formed of ferrite and cementite, and the number proportion of cementite particles present in ferrite grain boundaries is 40% or more based on the total number of cementite particles.

IPC 8 full level  
**C22C 38/00** (2006.01); **C21D 8/06** (2006.01); **C22C 38/60** (2006.01)

CPC (source: EP KR US)  
**C21D 1/32** (2013.01 - EP US); **C21D 6/002** (2013.01 - EP US); **C21D 6/004** (2013.01 - EP US); **C21D 6/005** (2013.01 - EP US); **C21D 6/008** (2013.01 - EP US); **C21D 8/06** (2013.01 - KR); **C21D 8/065** (2013.01 - EP US); **C21D 9/525** (2013.01 - EP US); **C22C 38/00** (2013.01 - EP US); **C22C 38/001** (2013.01 - EP US); **C22C 38/002** (2013.01 - EP US); **C22C 38/02** (2013.01 - EP US); **C22C 38/04** (2013.01 - EP KR US); **C22C 38/06** (2013.01 - EP US); **C22C 38/08** (2013.01 - EP US); **C22C 38/12** (2013.01 - EP KR US); **C22C 38/16** (2013.01 - KR); **C22C 38/18** (2013.01 - EP US); **C22C 38/20** (2013.01 - EP US); **C22C 38/32** (2013.01 - EP US); **C22C 38/40** (2013.01 - EP US); **C22C 38/60** (2013.01 - EP US); **C21D 8/06** (2013.01 - EP US); **C21D 2211/003** (2013.01 - EP KR US); **C21D 2211/005** (2013.01 - EP KR US)

Citation (search report)  
• [I] US 2014326369 A1 20141106 - YAMASHITA KOUJI [JP], et al  
• [A] JP 2013234349 A 20131121 - NIPPON STEEL & SUMITOMO METAL CORP  
• [A] WO 2014030327 A1 20140227 - NIPPON STEEL & SUMITOMO METAL CORP [JP]  
• [A] JP 2013007091 A 20130110 - KOBE STEEL LTD  
• [A] WO 2006088019 A1 20060824 - NIPPON STEEL CORP [JP], et al  
• See references of WO 2016158428A1

Designated contracting state (EPC)  
AL 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 RS SE SI SK SM TR

DOCDB simple family (publication)  
**EP 3279355 A1 20180207**; **EP 3279355 A4 20180905**; CN 107406949 A 20171128; CN 107406949 B 20200714; JP 2016194100 A 20161117; JP 6479538 B2 20190306; KR 20170118902 A 20171025; MX 2017012063 A 20180209; TW 201641709 A 20161201; TW I586814 B 20170611; US 2018105894 A1 20180419; WO 2016158428 A1 20161006

DOCDB simple family (application)  
**EP 16772311 A 20160316**; CN 201680019276 A 20160316; JP 2015073776 A 20150331; JP 2016058379 W 20160316; KR 20177026753 A 20160316; MX 2017012063 A 20160316; TW 105109031 A 20160323; US 201615562631 A 20160316