

Title (en)

HIGH-CARBON STEEL WIRE ROD EXCELLENT IN DRAWABILITY AND FATIGUE CHARACTERISTICS AFTER WIRE DRAWING

Title (de)

STAHLWALZDRAHT MIT HOHEM KOHLENSTOFFGEHALT MIT HERVORRAGENDEN ZIEHEIGENSCHAFTEN UND ERMÜDUNGSEIGENSCHAFTEN NACH EINEM DRAHTZIEHEN

Title (fr)

TIGE DE FILE D'ACIER À FORTE TENEUR EN CARBONE AYANT D' EXCELLENTES CARACTÉRISTIQUES D'APTITUDE À L'ÉTIRAGE ET DE FATIGUE APRÈS ÉTIRAGE

Publication

EP 2682489 B1 20210113 (EN)

Application

EP 12751796 A 20120228

Priority

- JP 2011043811 A 20110301
- JP 2012054971 W 20120228

Abstract (en)

[origin: US2013302204A1] High performance high carbon wire with refined inclusions after wire rolling, extremely low wire breakage rates at the time of drawing even in tough applications, and excellent in fatigue characteristics after wire drawing, characterized by having a predetermined composition of ingredients and in that the number ratio of inclusions satisfying (% SiO₂)=40 to 95%, (% CaO)=0.5 to 30%, (% Al₂O₃)=0.5 to 30%, (% MgO)=0.5 to 20%, and (% MnO)=0.5 to 10% and further satisfying (% Na)=0.2 to 7% and (% F)=0.17 to 8% (below, referred to as "inclusions covered due to composition") in the oxide-based nonmetallic inclusions of a short axis of 0.5 μm or more, a long axis of 1.0 μm or more, and a circle equivalent diameter (area converted to diameter) of 1 μm or more which are seen in the L direction cross-section of the wire (below, referred to as "inclusions covered due to size"), that is, the number of inclusions covered due to composition/number of inclusions covered due to size×100, is 80% or more.

IPC 8 full level

B21C 1/00 (2006.01); **C21C 7/04** (2006.01); **C21C 7/06** (2006.01); **C22C 1/02** (2006.01); **C22C 38/02** (2006.01); **C22C 38/04** (2006.01); **C22C 38/06** (2006.01); **C22C 38/08** (2006.01); **C22C 38/10** (2006.01); **C22C 38/12** (2006.01); **C22C 38/16** (2006.01); **C22C 38/18** (2006.01); **C22C 38/20** (2006.01); **C22C 38/22** (2006.01); **C22C 38/24** (2006.01); **C22C 38/26** (2006.01); **C22C 38/28** (2006.01); **C22C 38/30** (2006.01); **C22C 38/32** (2006.01); **C22C 38/34** (2006.01)

CPC (source: EP KR US)

B21C 1/003 (2013.01 - EP KR US); **C21C 7/06** (2013.01 - EP US); **C22C 1/02** (2013.01 - EP US); **C22C 38/002** (2013.01 - EP KR US); **C22C 38/005** (2013.01 - EP KR US); **C22C 38/02** (2013.01 - EP US); **C22C 38/04** (2013.01 - EP US); **C22C 38/06** (2013.01 - EP US); **C22C 38/08** (2013.01 - EP US); **C22C 38/10** (2013.01 - EP KR US); **C22C 38/12** (2013.01 - EP US); **C22C 38/16** (2013.01 - EP US); **C22C 38/18** (2013.01 - EP US); **C22C 38/20** (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 38/28** (2013.01 - EP US); **C22C 38/30** (2013.01 - EP US); **C22C 38/32** (2013.01 - EP US); **C22C 38/34** (2013.01 - EP US); **C22C 38/40** (2013.01 - EP US); **C22C 38/42** (2013.01 - EP KR US); **C22C 38/44** (2013.01 - EP KR US); **C22C 38/46** (2013.01 - EP KR US); **C22C 38/48** (2013.01 - EP KR US); **C22C 38/50** (2013.01 - EP KR US); **C22C 38/52** (2013.01 - EP KR US); **C22C 38/54** (2013.01 - EP KR US)

Cited by

CN109680121A

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)

US 2013302204 A1 20131114; CN 103415637 A 20131127; CN 103415637 B 20140806; EP 2682489 A1 20140108; EP 2682489 A4 20140820; EP 2682489 B1 20210113; JP 5310961 B2 20131009; JP WO2012118093 A1 20140707; KR 101357846 B1 20140205; KR 20130087618 A 20130806; WO 2012118093 A1 20120907

DOCDB simple family (application)

US 201213980217 A 20120228; CN 201280011034 A 20120228; EP 12751796 A 20120228; JP 2012054971 W 20120228; JP 2013502376 A 20120228; KR 20137018180 A 20120228