

Title (en)  
WIRE ROD

Title (de)  
WALZDRAHT

Title (fr)  
FIL MACHINE

Publication  
**EP 3561100 A4 20200729 (EN)**

Application  
**EP 17884608 A 20171220**

Priority  
• JP 2016246866 A 20161220  
• JP 2017045740 W 20171220

Abstract (en)  
[origin: EP3561100A1] A wire rod according to an aspect of the present invention includes a chemical composition within a predetermined range; in which an average value of %Mn+2×%Cr over an entirety of the wire rod is 0.50% to 1.00%; 90% or more of a metallographic structure is pearlite by area fraction, and the area fraction of the cementite is less than 3%; a maximum grain size of TiN is less than 15 μm; a maximum value of %Mn+2×%Cr in a region where both a S content and an O content are less than 1% in a central portion is 2.0 times or less than the average value of %Mn+2×%Cr over the entirety of the wire rod, and a ratio of the maximum value to a minimum value of %Mn+2×%Cr in a region where both a S content and an O content are less than 1% in an outer circumferential portion is 2.0 or less.

IPC 8 full level  
**C22C 38/00** (2006.01); **C21D 8/06** (2006.01); **C21D 9/52** (2006.01); **C22C 38/02** (2006.01); **C22C 38/04** (2006.01); **C22C 38/06** (2006.01); **C22C 38/18** (2006.01); **C22C 38/22** (2006.01); **C22C 38/28** (2006.01); **C22C 38/32** (2006.01)

CPC (source: EP US)  
**C21D 8/065** (2013.01 - EP); **C21D 9/525** (2013.01 - EP); **C22C 38/001** (2013.01 - EP US); **C22C 38/002** (2013.01 - US); **C22C 38/02** (2013.01 - EP US); **C22C 38/04** (2013.01 - EP US); **C22C 38/06** (2013.01 - EP US); **C22C 38/18** (2013.01 - EP); **C22C 38/22** (2013.01 - EP US); **C22C 38/28** (2013.01 - EP US); **C22C 38/32** (2013.01 - EP US); **C21D 2211/002** (2013.01 - US); **C21D 2211/003** (2013.01 - US); **C21D 2211/009** (2013.01 - EP US)

Citation (search report)  
• [X] WO 2016024635 A1 20160218 - NIPPON STEEL & SUMITOMO METAL CORP [JP]  
• [A] US 6322641 B1 20011127 - MAKII KOICHI [JP], et al  
• [A] JP 2008261028 A 20081030 - NIPPON STEEL CORP  
• See references of WO 2018117157A1

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 3561100 A1 20191030**; **EP 3561100 A4 20200729**; CN 110088318 A 20190802; JP 6725007 B2 20200715; JP WO2018117157 A1 20191031; US 2020071791 A1 20200305; WO 2018117157 A1 20180628

DOCDB simple family (application)  
**EP 17884608 A 20171220**; CN 201780078216 A 20171220; JP 2017045740 W 20171220; JP 2018558035 A 20171220; US 201716467280 A 20171220