

Title (en)  
HIGH-STRENGTH STEEL WIRE

Title (de)  
HOCHFESTER STAHL DRAHT

Title (fr)  
FIL D'ACIER À HAUTE RÉSISTANCE

Publication  
**EP 3647446 A4 20210217 (EN)**

Application  
**EP 18824446 A 20180629**

Priority  
• JP 2017128871 A 20170630  
• JP 2018024904 W 20180629

Abstract (en)  
[origin: EP3647446A1] The present invention provides a high strength drawn steel wire having a predetermined chemical composition, in which, in a cross section which includes the central axis of the drawn steel wire and which is in parallel with the central axis, the area ratio of a pearlite structure in the interior of the drawn steel wire is 90% or more, and the area ratio of the pearlite structure in a surface layer portion of the drawn steel wire is 80% or more; in which, in the entire structure of the drawn steel wire, the area ratio of a lamellar pearlite structure in which cementite has an average length of 1.0  $\mu\text{m}$  or more is from 30% to 65%, and the area ratio of a fragmented pearlite structure in which cementite has an average length of 0.30  $\mu\text{m}$  or less is from 20% to 50%; and in which the drawn steel wire has a tensile strength of 1,960 MPa or more.

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 38/08** (2006.01); **C22C 38/12** (2006.01); **C22C 38/14** (2006.01); **C22C 38/18** (2006.01); **C22C 38/54** (2006.01); **C23C 2/06** (2006.01)

CPC (source: EP KR US)  
**C21D 8/06** (2013.01 - KR); **C21D 8/065** (2013.01 - EP); **C21D 9/525** (2013.01 - EP); **C22C 38/001** (2013.01 - EP KR); **C22C 38/02** (2013.01 - EP); **C22C 38/04** (2013.01 - EP); **C22C 38/06** (2013.01 - EP); **C22C 38/08** (2013.01 - EP); **C22C 38/12** (2013.01 - EP); **C22C 38/14** (2013.01 - EP); **C22C 38/18** (2013.01 - EP); **C22C 38/48** (2013.01 - KR); **C22C 38/50** (2013.01 - KR); **C22C 38/54** (2013.01 - KR); **C23C 2/02** (2013.01 - EP KR US); **C23C 2/0224** (2022.08 - EP KR US); **C23C 2/06** (2013.01 - EP); **C23C 2/26** (2013.01 - EP KR US); **C23C 2/38** (2013.01 - EP); **C21D 2211/009** (2013.01 - EP)

Citation (search report)  
• [X] EP 2447389 A1 20120502 - NIPPON STEEL CORP [JP]  
• [A] EP 2062991 A1 20090527 - NIPPON STEEL CORP [JP]  
• [A] EP 3015563 A1 20160504 - NIPPON STEEL & SUMITOMO METAL CORP [JP]  
• See references of WO 2019004454A1

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 3647446 A1 20200506**; **EP 3647446 A4 20210217**; CN 110832096 A 20200221; JP 6485612 B1 20190320; JP WO2019004454 A1 20190627; KR 20200016289 A 20200214; WO 2019004454 A1 20190103

DOCDB simple family (application)  
**EP 18824446 A 20180629**; CN 201880042600 A 20180629; JP 2018024904 W 20180629; JP 2018565078 A 20180629; KR 20197038563 A 20180629