

Title (en)
WIRE ROD FOR SPRINGS WITH EXCELLENT CORROSION FATIGUE RESISTANCE, STEEL WIRE, AND MANUFACTURING METHOD THEREOF

Title (de)
WALZDRAHT FÜR FEDERN MIT HERVORRAGENDER KORROSIONSERMÜDUNGSBESTÄNDIGKEIT, STAHLDRAHT UND HERSTELLUNGSVERFAHREN DAFÜR

Title (fr)
FIL MACHINE POUR RESSORTS À EXCELLENTE RÉSISTANCE À LA FATIGUE PAR CORROSION, FIL D'ACIER ET SON PROCÉDÉ DE FABRICATION

Publication
EP 3553198 A4 20191113 (EN)

Application
EP 17877467 A 20171206

Priority
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Abstract (en)
[origin: EP3553198A1] One aspect of the present invention relates to a wire rod for springs with high strength and excellent corrosion fatigue resistance, in which a combination of Cr, Cu, and Ni content is controlled to an appropriate level, the maximum depth of corrosion pits is set to be below a certain level, and fine carbides containing Mo are set to be at a certain level or greater.

IPC 8 full level
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CPC (source: EP KR US)
C21D 1/58 (2013.01 - US); **C21D 8/0226** (2013.01 - US); **C21D 8/06** (2013.01 - EP KR); **C21D 8/065** (2013.01 - EP US); **C21D 9/02** (2013.01 - EP US); **C21D 9/52** (2013.01 - EP); **C21D 9/525** (2013.01 - EP KR US); **C21D 9/5732** (2013.01 - US); **C22C 38/00** (2013.01 - EP); **C22C 38/001** (2013.01 - EP KR US); **C22C 38/02** (2013.01 - EP US); **C22C 38/04** (2013.01 - EP US); **C22C 38/34** (2013.01 - EP KR); **C22C 38/42** (2013.01 - EP KR US); **C22C 38/44** (2013.01 - EP KR US); **C22C 38/46** (2013.01 - EP); **C22C 38/48** (2013.01 - EP); **C22C 38/50** (2013.01 - EP); **C21D 2211/001** (2013.01 - US); **C21D 2211/004** (2013.01 - EP); **C21D 2211/005** (2013.01 - EP KR US); **C21D 2211/008** (2013.01 - KR); **C21D 2211/009** (2013.01 - EP KR US)

Citation (search report)
• [XY] EP 0657557 A1 19950614 - KOBE STEEL LTD [JP]
• [Y] EP 0943697 A1 19990922 - NIPPON STEEL CORP [JP]
• [A] US 2007125456 A1 20070607 - KOCHI TAKUYA [JP], et al
• [A] JP 2003105496 A 20030409 - DAIDO STEEL CO LTD
• [A] KR 20140122784 A 20141021 - POSCO [KR]
• See also references of WO 2018106016A1

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