

Title (en)

PROCESS FOR PRODUCTION OF COLD-ROLLED STEEL SHEET HAVING EXCELLENT PRESS MOLDABILITY

Title (de)

VERFAHREN ZUR HERSTELLUNG EINES KALTGEWALZTEN STAHLBLECHS VON HERVORRAGENDER PRESSFORMBARKEIT

Title (fr)

PROCESSUS DE PRODUCTION D'UNE TÔLE D'ACIER LAMINÉE À FROID PRÉSENTANT UNE EXCELLENTE APTITUDE AU FORMAGE À LA PRESSE

Publication

EP 2455499 A1 20120523 (EN)

Application

EP 10796868 A 20100617

Priority

- JP 2010004062 W 20100617
- JP 2009162198 A 20090708

Abstract (en)

Provided are a cold-rolled steel sheet which undergoes a small load at the time of cold-rolling, has excellent press formability and high strength, and a method of manufacturing the cold-rolled steel sheet. A hot-rolled steel sheet which has the composition consisting of, by mass%, 0.10 to 0.30 C, 0.2 or more Mn, 0.01 or more Ni, 0.5 to 2.5 Mn+Ni, 1.2 to 9.0 Cr, and Fe and unavoidable impurities as a balance and has a tensile strength of 1000 MPa or less is subjected to pickling and, thereafter, is subjected to cold rolling at a total rolling reduction of 60 % or more thus forming a cold-rolled steel sheet, and final continuous annealing treatment is performed at a soaking temperature of 750 °C or above and at a cooling rate of 3 °C/s to 100 °C/s so that the cold-rolled steel sheet which has a tensile strength of 1280 MPa or more, breaking elongation of 3 % or more and a thickness of 0.05 to 0.60 mm is manufactured.

IPC 8 full level

C21D 9/46 (2006.01); **C21D 1/26** (2006.01); **C21D 8/02** (2006.01); **C21D 9/00** (2006.01); **C22C 38/00** (2006.01); **C22C 38/02** (2006.01); **C22C 38/04** (2006.01); **C22C 38/06** (2006.01); **C22C 38/42** (2006.01); **C22C 38/50** (2006.01); **C22C 38/58** (2006.01)

CPC (source: EP US)

C21D 1/26 (2013.01 - EP US); **C21D 8/0236** (2013.01 - EP US); **C21D 9/0006** (2013.01 - EP US); **C21D 9/0037** (2013.01 - EP US); **C21D 9/46** (2013.01 - EP US); **C22C 38/001** (2013.01 - EP US); **C22C 38/02** (2013.01 - EP US); **C22C 38/04** (2013.01 - EP US); **C22C 38/06** (2013.01 - EP US); **C22C 38/42** (2013.01 - EP US); **C22C 38/50** (2013.01 - EP US); **C22C 38/58** (2013.01 - EP US)

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 SE SI SK SM TR

DOCDB simple family (publication)

EP 2455499 A1 20120523; **EP 2455499 A4 20160210**; **EP 2455499 B1 20171213**; CN 102471821 A 20120523; CN 102471821 B 20140716; JP 5717631 B2 20150513; JP WO2011004554 A1 20121213; US 2012234438 A1 20120920; WO 2011004554 A1 20110113

DOCDB simple family (application)

EP 10796868 A 20100617; CN 201080028024 A 20100617; JP 2010004062 W 20100617; JP 2011521800 A 20100617; US 201013383193 A 20100617