

Title (en)  
COLD-ROLLED STEEL SHEET HAVING EXCELLENT SPOT WELDABILITY, AND MANUFACTURING METHOD THEREFOR

Title (de)  
KALTGEWALZTES STAHLBLECH MIT EXZELLENTER PUNKTSCHWEISSBARKEIT UND HERSTELLUNGSVERFAHREN DAFÜR

Title (fr)  
TÔLE EN ACIER LAMINÉE À FROID DOTÉE D'EXCELLENTE PROPRIÉTÉS DE SOUDAGE PAR POINT, ET PROCÉDÉ DE FABRICATION DE CELLE-CI

Publication  
**EP 3178954 B1 20190306 (EN)**

Application  
**EP 15829208 A 20150731**

Priority  
• JP 2014162834 A 20140808  
• JP 2015003881 W 20150731

Abstract (en)  
[origin: EP3178954A1] A cold-rolled steel sheet having excellent spot weldability suitable for use in vehicles, electric appliances, etc. is provided. The cold-rolled steel sheet has a steel composition containing, in mass%: C: 0.05% to 0.13%; Si: 0.05% to 2.0%; Mn: 1.5% to 4.0%; P: 0.05% or less; S: 0.005% or less; Al: 0.01% to 0.10%; Cr: 0.05% to 1.0%; Nb: 0.010% to 0.070%; Ti: 0.005% to 0.040%; and N: 0.0005% to 0.0065%, with a mass ratio Ti/N of Ti and N being 2.5 or more and 7.5 or less, and a balance being Fe and incidental impurities, wherein 70 mass% or more of Ti in steel exists as a precipitate, and 15 mass% or more of Nb in the steel exists as solute Nb, and a tensile strength is 980 MPa or more.

IPC 8 full level  
**C22C 38/00** (2006.01); **C21D 1/26** (2006.01); **C21D 8/02** (2006.01); **C21D 9/46** (2006.01); **C22C 38/02** (2006.01); **C22C 38/06** (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 38/38** (2006.01); **C22C 38/42** (2006.01); **C22C 38/48** (2006.01); **C22C 38/50** (2006.01); **C22C 38/58** (2006.01)

CPC (source: EP US)  
**C21D 1/26** (2013.01 - EP US); **C21D 8/0205** (2013.01 - EP US); **C21D 8/0226** (2013.01 - EP US); **C21D 8/0236** (2013.01 - EP US); **C21D 8/0263** (2013.01 - EP US); **C21D 9/46** (2013.01 - EP US); **C22C 38/00** (2013.01 - EP US); **C22C 38/001** (2013.01 - EP US); **C22C 38/002** (2013.01 - EP US); **C22C 38/02** (2013.01 - EP US); **C22C 38/06** (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 38/38** (2013.01 - EP US); **C22C 38/42** (2013.01 - EP US); **C22C 38/48** (2013.01 - EP US); **C22C 38/50** (2013.01 - EP US); **C22C 38/58** (2013.01 - EP US)

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