

Title (en)

METHOD FOR MANUFACTURING PRESS-MOLDED ARTICLE, AND PRESS-MOLDED ARTICLE

Title (de)

VERFAHREN ZUR HERSTELLUNG PRESSGEFORMTER ARTIKEL UND PRESSGEFORMTER ARTIKEL

Title (fr)

PROCÉDÉ POUR FABRIQUER UN ARTICLE MOULÉ À LA PRESSE, ET ARTICLE MOULÉ À LA PRESSE

Publication

**EP 3045550 A4 20170531 (EN)**

Application

**EP 13893522 A 20130910**

Priority

JP 2013074425 W 20130910

Abstract (en)

[origin: EP3045550A1] Provided is a manufacturing method useful for obtaining a press-molded article having excellent softening prevention characteristics in heat-affected zones (HAZ), the press-molded article being able to achieve a high level of balance between high strength and stretchability by the following steps being performed: heating a steel plate for hot-pressing to a temperature of 900-1100°C inclusive, the steel plate for hot-pressing having a prescribed chemical composition, Ti-containing deposits included in the steel plate having an equivalent circular diameter of 30nm or less and an average equivalent circular diameter of 6nm or less, the amount of deposited Ti and the total amount of Ti in the steel satisfying a prescribed relationship; commencing press-molding after the steel plate is heated; cooling the steel plate during press-molding or after press-molding is completed inside the mold such that the steel plate reaches a temperature of at or below 100°C less than the bainite transformation temperature (Bs) but at or above the martensite transformation temperature (Ms) while maintaining an average cooling rate of 20°C/s or more; and then cooling the steel plate at an average cooling rate of less than 20°C/s so as to cool the steel plate to 200°C or less.

IPC 8 full level

**C21D 9/00** (2006.01); **B21D 22/20** (2006.01); **C21D 1/18** (2006.01); **C21D 1/20** (2006.01); **C21D 8/00** (2006.01); **C22C 38/00** (2006.01); **C22C 38/02** (2006.01); **C22C 38/04** (2006.01); **C22C 38/06** (2006.01); **C22C 38/14** (2006.01); **C22C 38/20** (2006.01); **C22C 38/22** (2006.01); **C22C 38/26** (2006.01); **C22C 38/28** (2006.01); **C22C 38/32** (2006.01); **C22C 38/38** (2006.01); **C22C 38/50** (2006.01); **C22C 38/54** (2006.01); **C22C 38/60** (2006.01); **C21D 1/673** (2006.01); **C21D 9/46** (2006.01)

CPC (source: EP RU US)

**C21D 1/20** (2013.01 - EP US); **C21D 8/005** (2013.01 - EP US); **C21D 9/0068** (2013.01 - EP US); **C22C 38/001** (2013.01 - EP US); **C22C 38/002** (2013.01 - EP US); **C22C 38/005** (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 38/14** (2013.01 - EP US); **C22C 38/20** (2013.01 - EP US); **C22C 38/22** (2013.01 - EP US); **C22C 38/26** (2013.01 - EP US); **C22C 38/28** (2013.01 - EP US); **C22C 38/32** (2013.01 - EP US); **C22C 38/38** (2013.01 - EP US); **C22C 38/50** (2013.01 - EP US); **C22C 38/54** (2013.01 - EP US); **C21D 1/673** (2013.01 - EP US); **C21D 8/02** (2013.01 - RU); **C21D 9/46** (2013.01 - EP RU US); **C21D 2211/002** (2013.01 - EP US); **C22C 38/00** (2013.01 - RU)

Citation (search report)

- [X] JP 2013079441 A 20130502 - KOBE STEEL LTD
- [A] US 2013192726 A1 20130801 - CHEN SHANGPING [NL], et al
- [A] WO 2013012103 A1 20130124 - POSCO [KR], et al
- See references of WO 2015037059A1

Cited by

WO2018099819A1

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 3045550 A1 20160720**; **EP 3045550 A4 20170531**; CA 2923582 A1 20150319; CA 2923582 C 20170404; CN 105518162 A 20160420; CN 105518162 B 20170606; KR 101716624 B1 20170314; KR 20160042070 A 20160418; MX 2016003258 A 20160607; RU 2633416 C1 20171012; US 2016222483 A1 20160804; WO 2015037059 A1 20150319

DOCDB simple family (application)

**EP 13893522 A 20130910**; CA 2923582 A 20130910; CN 201380079440 A 20130910; JP 2013074425 W 20130910; KR 20167006199 A 20130910; MX 2016003258 A 20130910; RU 2016111916 A 20130910; US 201314917845 A 20130910