

## Title (en)

HOT PRESS MOLDED ARTICLE AND METHOD FOR PRODUCING SAME.

## Title (de)

HEISSGEPRESSTER FORMARTIKEL UND, HERSTELLUNGSVERFAHREN DAFÜR.

## Title (fr)

ARTICLE MOULÉ PAR PRESSAGE À CHAUD ET PROCÉDÉ POUR PRODUIRE CELUI-CI.

## Publication

**EP 2719787 B1 20160413 (EN)**

## Application

**EP 12796568 A 20120608**

## Priority

- JP 2011130636 A 20110610
- JP 2012064850 W 20120608

## Abstract (en)

[origin: US2014056753A1] There is provided a hot press-formed product, including a steel sheet formed by a hot press-forming method, and having a metallic structure that contains ferrite at 30% to 80% by area, bainitic ferrite at lower than 30% by area (not including 0% by area), martensite at 30% by area or lower (not including 0% by area), and retained austenite at 3% to 20% by area, whereby balance between strength and elongation can be controlled in a proper range and high ductility can be achieved.

## IPC 8 full level

**B21D 22/20** (2006.01); **C21D 1/18** (2006.01); **C21D 9/00** (2006.01); **C22C 38/00** (2006.01); **C22C 38/60** (2006.01)

## CPC (source: EP US)

**B21D 22/022** (2013.01 - EP US); **B21D 22/22** (2013.01 - EP US); **B21D 37/16** (2013.01 - EP US); **C21D 1/673** (2013.01 - EP US); **C21D 9/46** (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 38/04** (2013.01 - EP US); **C22C 38/06** (2013.01 - EP US); **C22C 38/08** (2013.01 - US); **C22C 38/12** (2013.01 - EP US); **C22C 38/14** (2013.01 - EP US); **C22C 38/16** (2013.01 - EP US); **C22C 38/18** (2013.01 - EP US); **C22C 38/20** (2013.01 - US); **C22C 38/22** (2013.01 - US); **C22C 38/28** (2013.01 - US); **C22C 38/32** (2013.01 - US); **C21D 2211/002** (2013.01 - EP US); **C21D 2211/005** (2013.01 - EP US); **C21D 2211/008** (2013.01 - EP US)

## Citation (opposition)

Opponent : SSAB Technology AB

- US 2008308194 A1 20081218 - CORQUILLET JACQUES [FR], et al
- EP 1939308 A1 20080702 - THYSENKRUPP STEEL AG [DE]
- US 2011036465 A1 20110217 - KAWASAKI YOSHIYASU [JP], et al
- US 2008286603 A1 20081120 - OH JIN-KEUN [KR], et al
- WO 2012048841 A1 20120419 - TATA STEEL IJMUIDEN BV [NL], et al
- WO 2009145563 A2 20091203 - POSCO [KR], et al
- JP 2005126733 A 20050519 - NIPPON STEEL CORP
- JP 2007016296 A 20070125 - NIPPON STEEL CORP
- JP 2007211276 A 20070823 - SUMITOMO METAL IND
- JP 2006183138 A 20060713 - JFE STEEL KK
- EP 2557193 A1 20130213 - JFE STEEL CORP [JP]
- MALEK NADERI: "Hot Stamping of Ultra High Strength Steels", VON DER FAKULTÄT FÜR GEORESSOURCEN UND MATERIALTECHNIK DER RHEINISCH-WESTFÄLISCHEN TECHNISCHEN HOCHSCHULE AACHEN ZUR ERLANGUNG DES AKADEMISCHEN GRADES EINES DOKTORS DER INGENIEURWISSENSCHAFTEN GENEHMIGTE DISSERTATION, 2008, XP055340807
- "20Mn B5 Warmgewalztes Mittelband Datasheet", THYSENKRUPP, July 2013 (2013-07-01), XP055340812
- "22Mn B5 Warmgewalztes Mittelband Datasheet", THYSENKRUPP, August 2013 (2013-08-01), XP055340815
- "27Mn B5-2 Warmgewalztes Mittelband Datasheet", THYSENKRUPP, August 2013 (2013-08-01), XP055340819

## Cited by

EP3327152A1; US10544475B2; US11371110B2

## Designated contracting state (EPC)

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## DOCDB simple family (publication)

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## DOCDB simple family (application)

**US 201214113761 A 20120608**; CN 201280027597 A 20120608; EP 12796568 A 20120608; ES 12796568 T 20120608; JP 2012064850 W 20120608; JP 2012131417 A 20120608