

Title (en)  
HOT PRESS MEMBER AND METHOD FOR PRODUCING SAME

Title (de)  
HEISSPRESSELEMENT UND VERFAHREN ZUR HERSTELLUNG DAVON

Title (fr)  
ÉLÉMENT DE PRESSE À CHAUD ET SON PROCÉDÉ DE PRODUCTION

Publication  
**EP 3366798 A4 20180829 (EN)**

Application  
**EP 16857080 A 20161003**

Priority

- JP 2015205752 A 20151019
- JP 2016004459 W 20161003

Abstract (en)  
[origin: EP3366798A1] A hot pressed member including: a first region having a tensile property of 1500 MPa or more in tensile strength TS and 6.0 % or more in uniform elongation uEl; and a second region having a tensile property of 780 MPa or more in tensile strength TS and 15.0 % or more in uniform elongation uEl is provided. The hot pressed member comprises: a predetermined chemical composition (in particular, low C of 0.090 % or more and less than 0.30 % and high Mn of 3.5 % or more and less than 11.0 %); a first region having: a microstructure including a martensite phase of 80.0 % or more in volume fraction and a retained austenite phase of 3.0 % or more and 20.0 % or less in volume fraction; and a dislocation density of  $1.0 \times 10^{16}$  /m<sup>2</sup> or more; and a second region having a microstructure including a ferrite phase of 30.0 % or more and 60.0 % or less in volume fraction, a retained austenite phase of 10.0 % or more and 70.0 % or less in volume fraction, and a martensite phase of 30.0 % or less in volume fraction.

IPC 8 full level  
**C22C 38/00** (2006.01); **B21D 22/02** (2006.01); **B21D 22/20** (2006.01); **B21D 24/00** (2006.01); **C21D 1/18** (2006.01); **C21D 9/00** (2006.01); **C21D 9/46** (2006.01); **C22C 38/60** (2006.01)

CPC (source: EP KR US)  
**B21D 22/02** (2013.01 - EP KR US); **B21D 22/022** (2013.01 - US); **B21D 22/20** (2013.01 - EP KR US); **B21D 24/00** (2013.01 - EP KR US); **C21D 1/18** (2013.01 - EP KR US); **C21D 6/005** (2013.01 - EP US); **C21D 8/021** (2013.01 - EP US); **C21D 9/46** (2013.01 - EP KR US); **C22C 38/00** (2013.01 - EP US); **C22C 38/02** (2013.01 - KR); **C22C 38/04** (2013.01 - KR); **C22C 38/06** (2013.01 - KR); **C22C 38/58** (2013.01 - EP US); **C22C 38/60** (2013.01 - EP US); **B21D 53/88** (2013.01 - US); **C21D 2211/001** (2013.01 - EP KR US); **C21D 2211/005** (2013.01 - EP US); **C21D 2211/008** (2013.01 - EP KR US); **C22C 38/004** (2013.01 - EP US)

Citation (search report)

- [Y] US 2015000802 A1 20150101 - NAITOU JUNYA [JP], et al
- [Y] US 2014083574 A1 20140327 - NAM SEUNG-MAN [KR], et al
- [Y] US 2014103684 A1 20140417 - TAKAGI SHUSAKU [JP], et al
- [A] DE 20014361 U1 20001012 - BENTELER WERKE AG [DE]
- [A] MERWIN M J: "Microstructure and Properties of Cold Rolled and Annealed Low-Carbon Manganese TRIP Steels", IRON & STEEL TECHNOLOGY, AIST, WARRENDALE, PA, US, vol. 5, no. 10, 1 October 2008 (2008-10-01), pages 66 - 84, XP001516367, ISSN: 1547-0423
- [A] DE MOOR E ET AL: "Austenite stabilization through manganese enrichment", SCRIPTA MATERIALIA, ELSEVIER, AMSTERDAM, NL, vol. 64, no. 2, 1 January 2011 (2011-01-01), pages 185 - 188, XP027473295, ISSN: 1359-6462, [retrieved on 20100929], DOI: 10.1016/J.SCRIPTAMAT.2010.09.040
- See references of WO 2017068757A1

Cited by  
EP4116003A4; EP3492618A4; EP3438316A4; US11293075B2; US10858718B2; EP3564401B1

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

Designated extension state (EPC)  
BA ME

DOCDB simple family (publication)  
**EP 3366798 A1 20180829; EP 3366798 A4 20180829; EP 3366798 B1 20201125**; CN 108138290 A 20180608; JP 2017078189 A 20170427; JP 6168118 B2 20170726; KR 20180063304 A 20180611; MX 2018004771 A 20180530; US 2018305785 A1 20181025; WO 2017068757 A1 20170427

DOCDB simple family (application)  
**EP 16857080 A 20161003**; CN 201680061023 A 20161003; JP 2015205752 A 20151019; JP 2016004459 W 20161003; KR 20187013033 A 20161003; MX 2018004771 A 20161003; US 201615768905 A 20161003