

Title (en)

NITRIDED COMPONENT AND METHOD FOR PRODUCING SAME

Title (de)

NITRIERTE KOMPONENTE UND VERFAHREN ZUR HERSTELLUNG DAVON

Title (fr)

COMPOSANT NITRURÉ ET PROCÉDÉ DE PRODUCTION DUDIT COMPOSANT NITRURÉ

Publication

EP 3524709 A4 20200219 (EN)

Application

EP 17858503 A 20171005

Priority

- JP 2016197267 A 20161005
- JP 2017036378 W 20171005

Abstract (en)

[origin: EP3524709A1] A nitrided part excellent in bending straightening ability plus rotating bending fatigue strength and a method of production of the same, the nitrided part having a steel material having a predetermined chemical composition as a material, wherein the nitrided part comprises a compound layer formed on the surface of the steel material, the compound layer containing iron, nitrogen, and carbon, and a thickness of the compound layer being 3 μm to less than 15 μm ; a phase structure in the compound layer in a range from the surface down to a depth of 5 μm contains γ' phases in an area ratio of 50% or more, a pore area ratio in a range from the surface down to a depth of 3 μm is less than 1%, and a compressive residual stress of the compound layer surface is 500 MPa or more.

IPC 8 full level

C23C 8/26 (2006.01); **C21D 1/06** (2006.01); **C21D 1/76** (2006.01); **C21D 9/32** (2006.01); **C22C 38/00** (2006.01); **C22C 38/18** (2006.01); **C22C 38/60** (2006.01)

CPC (source: EP KR US)

C21D 1/06 (2013.01 - EP KR US); **C21D 1/76** (2013.01 - EP KR US); **C21D 9/32** (2013.01 - EP KR 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 - US); **C22C 38/08** (2013.01 - US); **C22C 38/12** (2013.01 - US); **C22C 38/14** (2013.01 - US); **C22C 38/16** (2013.01 - US); **C22C 38/18** (2013.01 - EP); **C22C 38/20** (2013.01 - EP); **C22C 38/22** (2013.01 - EP); **C22C 38/24** (2013.01 - EP); **C22C 38/26** (2013.01 - EP); **C22C 38/28** (2013.01 - EP); **C22C 38/32** (2013.01 - EP US); **C22C 38/38** (2013.01 - EP KR); **C22C 38/40** (2013.01 - EP); **C22C 38/42** (2013.01 - EP); **C22C 38/60** (2013.01 - EP KR); **C23C 8/26** (2013.01 - EP KR US)

Citation (search report)

- [I] EP 2966189 A1 20160113 - NIPPON STEEL & SUMITOMO METAL CORP [JP]
- [I] JP 2015117412 A 20150625 - DAIDO STEEL CO LTD
- [A] WO 2015136917 A1 20150917 - NIPPON STEEL & SUMITOMO METAL CORP [JP]
- See also references of WO 2018066667A1

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

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EP 3524709 A1 20190814; **EP 3524709 A4 20200219**; BR 112019005781 A2 20190618; CN 109790614 A 20190521; JP 6766876 B2 20201014; JP WO2018066667 A1 20190815; KR 20190022801 A 20190306; US 2020024720 A1 20200123; WO 2018066667 A1 20180412

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EP 17858503 A 20171005; BR 112019005781 A 20171005; CN 201780058329 A 20171005; JP 2017036378 W 20171005; JP 2018543972 A 20171005; KR 20197002678 A 20171005; US 201716337675 A 20171005