

Title (en)
NITRIDED COMPONENT AND METHOD FOR PRODUCING SAME

Title (de)
NITRIDIERTE KOMPONENTE UND VERFAHREN ZUR HERSTELLUNG DAVON

Title (fr)
COMPOSANT NITRURÉ ET SON PROCÉDÉ DE PRODUCTION

Publication
EP 3524708 A4 20200219 (EN)

Application
EP 17858502 A 20171005

Priority
• JP 2016197262 A 20161005
• JP 2017036373 W 20171005

Abstract (en)
[origin: EP3524708A1] A nitrided part excellent in contact fatigue strength plus rotating bending fatigue strength, 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, a thickness of the compound layer being 3 μm to less than 20 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 9/30** (2006.01); **C21D 9/32** (2006.01); **C22C 38/00** (2006.01); **C22C 38/18** (2006.01); **C22C 38/38** (2006.01); **C22C 38/60** (2006.01)

CPC (source: EP KR US)
C21D 1/06 (2013.01 - EP); **C21D 1/76** (2013.01 - EP); **C21D 9/30** (2013.01 - EP); **C21D 9/32** (2013.01 - EP); **C22C 38/00** (2013.01 - EP); **C22C 38/001** (2013.01 - EP US); **C22C 38/002** (2013.01 - US); **C22C 38/02** (2013.01 - EP US); **C22C 38/04** (2013.01 - US); **C22C 38/06** (2013.01 - EP US); **C22C 38/18** (2013.01 - EP KR); **C22C 38/20** (2013.01 - EP); **C22C 38/22** (2013.01 - EP); **C22C 38/24** (2013.01 - EP); **C22C 38/38** (2013.01 - EP); **C22C 38/42** (2013.01 - EP US); **C22C 38/44** (2013.01 - EP US); **C22C 38/46** (2013.01 - EP US); **C22C 38/48** (2013.01 - EP US); **C22C 38/50** (2013.01 - EP US); **C22C 38/54** (2013.01 - EP US); **C22C 38/60** (2013.01 - EP KR); **C23C 8/26** (2013.01 - EP KR US)

Citation (search report)
• [I] US 2015053311 A1 20150226 - SHIMIZU YUICHIRO [JP], et al
• [A] WO 2015136917 A1 20150917 - NIPPON STEEL & SUMITOMO METAL CORP [JP]
• [A] EP 2679701 A1 20140101 - DOWA THERMOTECH CO LTD [JP], et al
• See also references of WO 2018066666A1

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 3524708 A1 20190814; **EP 3524708 A4 20200219**; BR 112019006046 A2 20190625; CN 109715845 A 20190503; JP 6769491 B2 20201014; JP WO2018066666 A1 20190808; KR 20190028520 A 20190318; US 2020040439 A1 20200206; WO 2018066666 A1 20180412

DOCDB simple family (application)
EP 17858502 A 20171005; BR 112019006046 A 20171005; CN 201780058243 A 20171005; JP 2017036373 W 20171005; JP 2018543971 A 20171005; KR 20197004429 A 20171005; US 201716338383 A 20171005