

Title (en)
PREPARATION METHOD OF STEEL PRODUCT HAVING DIFFERENT STRENGTHS USING LASER HEAT TREATMENT

Title (de)
HERSTELLUNGSVERFAHREN FÜR EIN STAHLPRODUKT MIT UNTERSCHIEDLICHEN FESTIGKEITEN MITTELS LASERWÄRMEBEHANDLUNG

Title (fr)
MÉTHODE DE FABRICATION D'UN PRODUIT EN ACIER AVEC RÉSISTANCES DIFFÉRENTES PAR TRAITEMENT THERMIQUE AVEC LASER

Publication
EP 2762577 A1 20140806 (EN)

Application
EP 11873399 A 20111017

Priority

- KR 20110100174 A 20110930
- KR 2011007703 W 20111017

Abstract (en)
Disclosed are a preparation method of a steel product capable of local reinforcement using laser heat treatment, and a heat hardened steel used in the method. According to the present invention, the preparation method of a steel part comprises the following steps: (a) preparing a material comprising 0.1-0.5 wt% of C, 0.1-0.5 wt% of Si, 0.5-3.0 wt% of Mn, 0.1 wt% or less of P, 0.05 wt% or less of S, 0.01-1.0 wt% of Cr, 0.1 wt% or less of Al, 0.2 wt% or less of Ti, 0.0005-0.08 wt% of B, and the balance of Fe and inevitable impurities; (b) preparing a formed product by forming the material into a predetermined shape; and (c) locally reinforcing the high strength portion by carrying out laser heat treatment on a portion requiring high strength at the formed product.

IPC 8 full level
C21D 1/09 (2006.01); **C22C 38/38** (2006.01); **C23C 2/04** (2006.01)

CPC (source: EP KR US)
C21D 1/09 (2013.01 - EP KR US); **C21D 1/34** (2013.01 - EP US); **C21D 9/0068** (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 38/28** (2013.01 - EP US); **C22C 38/32** (2013.01 - EP US); **C22C 38/38** (2013.01 - EP KR US); **C23C 2/04** (2013.01 - KR); **C21D 2221/00** (2013.01 - EP US); **Y10T 428/12674** (2015.01 - EP US); **Y10T 428/12757** (2015.01 - EP US); **Y10T 428/12799** (2015.01 - EP US); **Y10T 428/12937** (2015.01 - EP US); **Y10T 428/31678** (2015.04 - EP US)

Cited by
US11131002B2; CN109414742A; WO2018065230A1

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 2762577 A1 20140806; **EP 2762577 A4 20140924**; **EP 2762577 B1 20160427**; CN 103842527 A 20140604; JP 2014534334 A 20141218; JP 5898772 B2 20160406; KR 101119173 B1 20120222; US 2014227553 A1 20140814; US 2015211086 A1 20150730; WO 2013047939 A1 20130404

DOCDB simple family (application)
EP 11873399 A 20111017; CN 201180073901 A 20111017; JP 2014533173 A 20111017; KR 2011007703 W 20111017; KR 20110100174 A 20110930; US 201114343955 A 20111017; US 201514683933 A 20150410