

Title (en)

CASE-HARDENED STEEL, CARBURIZED COMPONENT, AND PROCESS FOR PRODUCING CASE-HARDENED STEEL

Title (de)

EINSATZGEHÄRTETER STAHL, AUFGEKOHLTE KOMPONENTE UND VERFAHREN ZUR HERSTELLUNG DES EINSATZGEHÄRTETEN STAHL

Title (fr)

ACIER CÉMENTÉ, ÉLÉMENT CÉMENTÉ ET PROCÉDÉ DESTINÉ À LA PRODUCTION D'ACIER CÉMENTÉ

Publication

**EP 3399063 A4 20190529 (EN)**

Application

**EP 16881816 A 20161228**

Priority

- JP 2015256254 A 20151228
- JP 2016089086 W 20161228

Abstract (en)

[origin: EP3399063A1] A case hardening steel includes, as a chemical composition, by mass%, C: 0.10% to 0.30%, Si: 0.02% to 1.50%, Mn: 0.30% to 1.80%, S: 0.003% to 0.020%, Cr: 0.40% to 2.00%, Al: 0.005% to 0.050%, Ti: 0.06% to 0.20%, Bi: 0.0001% to 0.0050%, Mo: 0% to 1.50%, Ni: 0% to 3.50%, V: 0% to 0.50%, B: 0% to 0.0050%, Nb: 0% or more and less than 0.040%, P: limited to 0.050% or less, N: limited to 0.0060% or less, O: limited to 0.0025% or less, and a remainder including an iron and impurities, and satisfies  $Ti/S \neq 6.0$ , in which, in a longitudinal section, a maximum diameter of Ti-based precipitates predicted by extreme value statistics under a condition that an inspection standard area is 100 mm<sup>2</sup>, a number of inspections is 16 visual fields, and an area where prediction is performed is 30,000 mm<sup>2</sup>, is 40 μm or less.

IPC 8 full level

**C22C 38/00** (2006.01); **C21D 1/06** (2006.01); **C21D 8/06** (2006.01); **C22C 38/02** (2006.01); **C22C 38/04** (2006.01); **C22C 38/06** (2006.01); **C22C 38/22** (2006.01); **C22C 38/24** (2006.01); **C22C 38/26** (2006.01); **C22C 38/28** (2006.01); **C22C 38/32** (2006.01); **C22C 38/50** (2006.01); **C22C 38/58** (2006.01)

CPC (source: EP US)

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Citation (search report)

- [A] JP 2010248630 A 20101104 - JFE STEEL CORP, et al
- [A] JP 2011219854 A 20111104 - JFE STEEL CORP, et al
- [A] JP 2005240175 A 20050908 - NIPPON STEEL CORP
- See references of WO 2017115842A1

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