

Title (en)

HIGH-HARDNESS, HIGHLY DUCTILE FERROUS ARTICLES

Title (de)

EISENGEGENDSTÄNDE MIT HOHER HÄRTE UND HOHER DUKTILITÄT

Title (fr)

ARTICLES FERREUX A HAUTE DURETE ET HAUTE DUCTILITE

Publication

**EP 1434889 A4 20050126 (EN)**

Application

**EP 02782137 A 20021010**

Priority

- US 0232267 W 20021010
- US 97716701 A 20011012

Abstract (en)

[origin: US2003070736A1] Ferrous articles are austenitized, then converted to at least 60% bainite, and the balance substantially converted to martensite; the articles are then cold worked, preferably by both compression and tensile deformation to at least 60% yield strength. The articles have improved serviceability, particularly fatigue life.

IPC 1-7

**C21D 8/00**; **C21D 1/20**; **C21D 7/06**

IPC 8 full level

**C21D 7/06** (2006.01); **B21L 15/00** (2006.01); **C21D 1/20** (2006.01); **C21D 1/56** (2006.01); **C21D 1/78** (2006.01); **C21D 9/00** (2006.01); **C21D 7/02** (2006.01)

CPC (source: EP KR US)

**B21L 15/00** (2013.01 - EP US); **B21L 15/005** (2013.01 - EP US); **C21D 1/20** (2013.01 - EP US); **C21D 8/00** (2013.01 - KR); **C21D 9/0087** (2013.01 - EP US); **C21D 7/02** (2013.01 - EP US); **C21D 9/0093** (2013.01 - EP US); **C21D 2211/002** (2013.01 - EP US); **C21D 2211/008** (2013.01 - EP US)

Citation (search report)

- [A] EP 0745696 A1 19961204 - BLOUNT INC [US]
- [A] US 3854363 A 19741217 - MERKELL K, et al
- [A] PATENT ABSTRACTS OF JAPAN vol. 0102, no. 52 (C - 369) 29 August 1986 (1986-08-29)
- See references of WO 03031660A1

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