

Title (en)

Free cutting alloy

Title (de)

Automatenlegierung

Title (fr)

Alliage de décolletage

Publication

**EP 1431410 A1 20040623 (EN)**

Application

**EP 04004044 A 20000901**

Priority

- EP 00118990 A 20000901
- JP 25090299 A 19990903
- JP 2000070257 A 20000314
- JP 2000221433 A 20000721
- JP 2000251602 A 20000822
- JP 2000251626 A 20000822

Abstract (en)

Provided is free cutting alloy excellent in machinability, preserving various characteristics as alloy. The free cutting alloy contains: one or more of Ti and Zr as a metal element component; and C being an indispensable element as a bonding component with the metal element component, wherein a (Ti,Zr) based compound including one or more of S, Se and Te is formed in a matrix metal phase. The free cutting alloy is more excellent in machinability, preserving various characteristics as alloy at similar levels to a conventional case. The effect is especially conspicuous, for example, when a compound expressed in a chemical form of (Ti,Zr)<sub>4</sub>C<sub>2</sub>(S,Se,Te)<sub>2</sub> as the (Ti,Zr) based compound is formed at least in a dispersed state in the alloy structure. <IMAGE>

IPC 1-7

**C22C 38/60; C22C 38/40; C22C 38/28; C22C 38/18; C22C 19/05; C22C 27/06**

IPC 8 full level

**C22C 19/05** (2006.01); **C22C 27/06** (2006.01); **C22C 38/00** (2006.01); **C22C 38/06** (2006.01); **C22C 38/10** (2006.01); **C22C 38/18** (2006.01); **C22C 38/28** (2006.01); **C22C 38/40** (2006.01); **C22C 38/42** (2006.01); **C22C 38/44** (2006.01); **C22C 38/50** (2006.01); **C22C 38/52** (2006.01); **C22C 38/60** (2006.01)

CPC (source: EP)

**C22C 19/05** (2013.01); **C22C 19/055** (2013.01); **C22C 19/057** (2013.01); **C22C 19/058** (2013.01); **C22C 38/004** (2013.01); **C22C 38/06** (2013.01); **C22C 38/105** (2013.01); **C22C 38/28** (2013.01); **C22C 38/40** (2013.01); **C22C 38/42** (2013.01); **C22C 38/44** (2013.01); **C22C 38/50** (2013.01); **C22C 38/52** (2013.01); **C22C 38/60** (2013.01)

Citation (search report)

- [A] US 4705581 A 19871110 - HONKURA YOSHINOBU [JP], et al & US 6033625 A 20000307 - NAGASHIMA TOMOTAKA [JP], et al
- [A] R.KIESSLING ET AL: "Non-metallic inclusions in steel", 1978, THE INSTITUTE OF MATERIALS, LONDON, GB, XP002155733
- [A] PATENT ABSTRACTS OF JAPAN vol. 1998, no. 10 31 August 1998 (1998-08-31)
- [A] PATENT ABSTRACTS OF JAPAN vol. 012, no. 333 (C - 526) 8 September 1988 (1988-09-08)
- [A] PATENT ABSTRACTS OF JAPAN vol. 014, no. 439 (C - 0761) 19 September 1990 (1990-09-19)
- [A] PATENT ABSTRACTS OF JAPAN vol. 1999, no. 10 31 August 1999 (1999-08-31)

Designated contracting state (EPC)

DE FR GB SE

DOCDB simple family (publication)

**EP 1085105 A2 20010321; EP 1085105 A3 20010516; EP 1085105 B1 20060628**; DE 60029063 D1 20060810; DE 60029063 T2 20070628; DE 60029260 D1 20060817; DE 60029260 T2 20070830; DE 60029261 D1 20060817; DE 60029261 T2 20070201; DE 60029364 D1 20060824; DE 60029364 T2 20070809; DE 60030175 D1 20060928; DE 60030175 T2 20070830; EP 1431409 A1 20040623; EP 1431409 B1 20060705; EP 1431410 A1 20040623; EP 1431410 B1 20060712; EP 1431411 A1 20040623; EP 1431411 B1 20060705; EP 1431412 A1 20040623; EP 1431412 B1 20060816

DOCDB simple family (application)

**EP 00118990 A 20000901**; DE 60029063 T 20000901; DE 60029260 T 20000901; DE 60029261 T 20000901; DE 60029364 T 20000901; DE 60030175 T 20000901; EP 04004043 A 20000901; EP 04004044 A 20000901; EP 04004045 A 20000901; EP 04004046 A 20000901