

Title (en)
METHOD FOR THE MANUFACTURE OF OBJECTS FROM IRON-COBALT-MOLYBDENUM/TUNGSTEN-NITROGEN ALLOYS

Title (de)
VERFAHREN ZUR HERSTELLUNG VON GEGENSTÄNDEN AUS EISEN-COBALT-MOLYBDÄN/WOLFRAM-STICKSTOFF-LEGIERUNGEN

Title (fr)
PROCÉDÉ DE FABRICATION D'OBJETS EN ALLIAGES DE FER- COBALT - MOLYBDÈNE/TUNGSTÈNE - AZOTE INERTE

Publication
EP 2886673 A3 20150805 (DE)

Application
EP 14192704 A 20141111

Priority
AT 508202013 A 20131212

Abstract (en)
[origin: CA2873761A1] The disclosure relates to a production of a semi-finished product for a manufacturing of objects, particularly tools, from a precipitation-hardenable alloy having a composition in wt.% of Co = 15.0 to 30.0, Mo up to 20.0, W up to 25.0, Fe and manufacturing-specific impurities as a remainder. To achieve an economical, highly precise production of objects or tools of the above alloy with reduced effort, it is provided to prevent a formation of ordered structures of the Fe atoms and Co atoms in the matrix of the type (Fe+(29xCo)) + approximately 1 wt.% Mo of the semi-finished product by a thermal special treatment, to thus improve a workability of the material.

IPC 8 full level
C22C 33/02 (2006.01); **B22F 3/15** (2006.01); **B22F 3/24** (2006.01); **C21D 6/00** (2006.01); **C21D 6/02** (2006.01)

CPC (source: AT EP KR US)
B22F 3/16 (2013.01 - AT); **B22F 3/24** (2013.01 - AT US); **C21D 1/26** (2013.01 - EP KR US); **C21D 6/007** (2013.01 - EP KR US); **C21D 6/02** (2013.01 - KR); **C22C 33/0285** (2013.01 - EP KR US); **C22C 38/001** (2013.01 - EP KR US); **C22C 38/10** (2013.01 - AT EP KR US); **C22C 38/12** (2013.01 - KR); **C22C 38/22** (2013.01 - EP US); **B22F 2003/248** (2013.01 - US); **B22F 2998/10** (2013.01 - EP KR US); **C21D 6/02** (2013.01 - EP US)

Citation (search report)

- [A] EP 1990438 A1 20081112 - BOEHLER EDELSTAHL GMBH & CO KG [AT]
- [A] H. DANNINGER, F. ROUZBAHANI, CH. HAROLD, H. PONEMAYR, M. DAXELMÜLLER, F. SIMANÍK, K. IDINSKÝ: "POWDER METALLURGY CARBON FREE TOOL STEELS Fe-Co-Mo WITH VARYING Co AND Mo CONTENTS", POWDER METALLURGY PROGRESS, vol. 13, no. 2, July 2013 (2013-07-01), pages 47 - 56, XP002741147
- [A] DANNINGER H ET AL: "Heat treatment and properties of precipitation hardened carbon-free PM tool steels", PROGRESS IN POWDER METALLURGY, METAL POWDER INDUSTRIES FEDERATION, PRINCETON, US, vol. 5, no. 2, January 2005 (2005-01-01), pages 92 - 103, XP009104271, ISSN: 0079-6719
- [A] H. DANNINGER, CH. HAROLD, CH. GIERL, H. PONEMAYR, M. DAXELMUELLER, F. SIMANCIK AND K. IZDINSKY: "Powder Metallurgy Manufacturing of Carbon-Free Precipitation Hardened High Speed Steels", ACTA PHYSICA POLONICA A, vol. 117, no. 5, 2010, pages 825 - 830, XP002741148

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

Designated extension state (EPC)
BA ME

DOCDB simple family (publication)
EP 2886673 A2 20150624; EP 2886673 A3 20150805; EP 2886673 B1 20190612; AT 515148 A1 20150615; AT 515148 B1 20161115; CA 2873761 A1 20150612; CA 2873761 C 20190319; CN 104708005 A 20150617; CN 104708005 B 20171003; ES 2745380 T3 20200302; HK 1206681 A1 20160115; JP 2015113528 A 20150622; JP 6071984 B2 20170201; KR 101700680 B1 20170131; KR 20150068912 A 20150622; RU 2014150364 A 20160710; RU 2599926 C2 20161020; SI 2886673 T1 20200731; TW 201522662 A 20150616; TW I537399 B 20160611; UA 113548 C2 20170210; US 10066279 B2 20180904; US 2015167132 A1 20150618

DOCDB simple family (application)
EP 14192704 A 20141111; AT 508202013 A 20131212; CA 2873761 A 20141208; CN 201410769369 A 20141212; ES 14192704 T 20141111; HK 15107364 A 20150731; JP 2014245660 A 20141204; KR 20140177624 A 20141210; RU 2014150364 A 20141211; SI 201431345 T 20141111; TW 103138854 A 20141110; UA A201413262 A 20141210; US 201414557903 A 20141202