

Title (en)
TUNGSTEN-NICKEL-IRON HIGH-DENSITY ALLOYS WITH VERY HIGH MECHANICAL PROPERTIES, AND PROCESS FOR MANUFACTURING THESE ALLOYS

Publication
EP 0313484 B1 19920304 (FR)

Application
EP 88420358 A 19881020

Priority
FR 8715315 A 19871023

Abstract (en)
[origin: EP0313484A1] These alloys are characterised in that the alpha phase of tungsten is in the shape of butterfly wings with dislocation cells between 0.01 and 1 μm in size and the gamma phase of the binder has a mean free path of less than 15 μm . <??>The process consists in subjecting the sintered and annealed product to at least three cycles of operations consisting, in each case in following the puddling by a heat treatment. <??>The invention finds its application in the production of alloys which have a tensile strength of between 1300 and 2000 MPa and intended especially for use at very high stresses. <IMAGE>

IPC 1-7
C22C 1/04; **C22C 27/04**; **C22F 1/18**

IPC 8 full level
C22C 1/04 (2006.01); **C22C 27/04** (2006.01); **C22F 1/18** (2006.01)

CPC (source: EP KR US)
C22C 1/04 (2013.01 - KR); **C22C 1/045** (2013.01 - EP US); **C22C 27/04** (2013.01 - EP KR US); **C22F 1/18** (2013.01 - EP KR US)

Cited by
EP2372295A1; EP0396185A1; US5051139A; DE4318827A1; US5462576A; FR2958392A1; EP2372296A1

Designated contracting state (EPC)
AT BE CH DE ES GB GR IT LI LU NL SE

DOCDB simple family (publication)
EP 0313484 A1 19890426; **EP 0313484 B1 19920304**; AT E73174 T1 19920315; AU 2408888 A 19890427; AU 606759 B2 19910214; BR 8805467 A 19890704; CA 1340011 C 19980825; CN 1019318 B 19921202; CN 1033651 A 19890705; DE 3868843 D1 19920409; DK 587288 A 19890424; DK 587288 D0 19881021; EG 19412 A 19950131; ES 2032336 T3 19930201; FR 2622209 A1 19890428; FR 2622209 B1 19900126; GR 3003967 T3 19930316; IL 88062 A0 19890630; IL 88062 A 19920906; IN 171726 B 19921219; JP H01142048 A 19890602; JP H0468371 B2 19921102; KR 890006843 A 19890616; KR 950008693 B1 19950804; PT 88821 B 19930129; SG 73092 G 19921002; US 4938799 A 19900703; US 4960563 A 19901002; YU 197388 A 19900831; YU 47632 B 19951204; ZA 887893 B 19890726

DOCDB simple family (application)
EP 88420358 A 19881020; AT 88420358 T 19881020; AU 2408888 A 19881021; BR 8805467 A 19881021; CA 580392 A 19881017; CN 88107568 A 19881020; DE 3868843 T 19881020; DK 587288 A 19881021; EG 54888 A 19881024; ES 88420358 T 19881020; FR 8715315 A 19871023; GR 910401849 T 19920305; IL 8806288 A 19881017; IN 680MA1988 A 19880929; JP 26520288 A 19881020; KR 880013866 A 19881022; PT 8882188 A 19881021; SG 73092 A 19920716; US 25350688 A 19881005; US 48951090 A 19900307; YU 197388 A 19881021; ZA 887893 A 19881021