

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
11 April 2019 (11.04.2019)



(10) International Publication Number
WO 2019/068148 A1

(51) International Patent Classification:

C22C 14/00 (2006.01) F16B 33/00 (2006.01)
C22F 1/18 (2006.01) B33Y 70/00 (2015.01)
F16B 31/00 (2006.01)

(21) International Application Number:

PCT/AU2018/051082

(22) International Filing Date:

08 October 2018 (08.10.2018)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

2017904043 06 October 2017 (06.10.2017) AU

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(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,

AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ,
CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO,
DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN,
HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP,
KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME,
MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ,
OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA,
SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN,
TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ,
UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ,
TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK,
EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV,
MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM,
TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
KM, ML, MR, NE, SN, TD, TG).

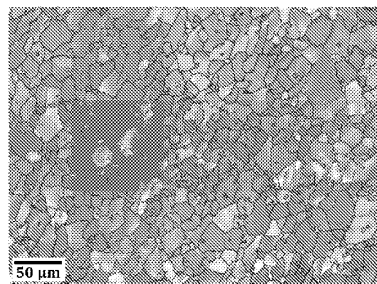
Published:

— with international search report (Art. 21(3))

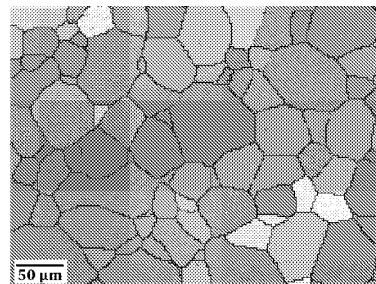
(54) Title: IMPROVED HEAT TREATABLE TITANIUM ALLOY

FIGURE 1

Comparison of β -Phase Grain Size for Invention Alloy & Standard Beta-C Alloy



(a) Alloy of the Invention



(b) Standard Beta-C Alloy

(57) Abstract: A "modified" meta-stable β titanium alloy that, apart from carbon content, corresponds to the composition range for standard Beta-C titanium alloy. The modified alloy comprises vanadium, chromium, molybdenum, zirconium, aluminium, with maxima for oxygen, iron, nitrogen, hydrogen, yttrium, and other elements (apart from carbon and titanium), with a balance (apart from carbon) of titanium. The modified alloy has carbon present at a stable total carbon level sufficiently in excess of 0.05 wt.% achieving an improvement in the mechanical properties of UTS, DSS and fatigue strength in threaded regions, relative to standard Beta-C alloy with a specified carbon level below 0.05 wt.%, with a maximum carbon content controlled so as to preclude carbide formation having a detrimental effect on the level of fatigue strength.



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