



(11) **EP 2 623 628 A8**

(12) **CORRECTED EUROPEAN PATENT APPLICATION**
published in accordance with Art. 153(4) EPC

(15) Correction information:
Corrected version no 1 (W1 A1)
Corrections, see
Bibliography INID code(s) 54

(51) Int Cl.:
C22F 1/18 (2006.01)

(86) International application number:
PCT/RU2011/000730

(48) Corrigendum issued on:
30.10.2013 Bulletin 2013/44

(87) International publication number:
WO 2012/044204 (05.04.2012 Gazette 2012/14)

(43) Date of publication:
07.08.2013 Bulletin 2013/32

(21) Application number: **11829668.0**

(22) Date of filing: **23.09.2011**

(84) Designated Contracting States:
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

(30) Priority: **27.09.2010 RU 2010139738**

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(54) **METHOD FOR MANUFACTURING DEFORMED ARTICLES FROM PSEUDO- BETA-TITANIUM ALLOYS**

(57) This invention relates to nonferrous metallurgy, namely to thermomechanical processing of titanium alloys and can be used for manufacturing structural parts and assemblies of high-strength pseudo- β -titanium alloys in aerospace engineering, mainly for landing gear and airframe application.

The method for thermomechanical processing of titanium alloy items consisting of, in weight percentages, 4.0 - 6.0 aluminum, 4.5 - 6.0 vanadium, 4.5 - 6.0 molybdenum, 2.0 - 3.6 chromium, 0.2 - 0.5 iron, 2.0 max. zirconium, 0.2 max. oxygen and 0.05 max. nitrogen is proposed. The method consists of multiple heating operations to a temperature that is above or below beta transus

temperature (BTT), hot working with the specified strain and cooling.

A technical result of this method is manufacture of near-net shape forgings with stable properties having sections with thickness 100 mm and over and length over 6 m with the guaranteed level of the following mechanical properties:

1. Ultimate tensile strength over 1200 MPa with fracture toughness, K_{1C} , not less than 35MPa $\sqrt{m}$.
2. Fracture toughness, K_{1C} , over 70 MPa $\sqrt{m}$ with ultimate tensile strength not less than 1100 MPa.

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