

Title (en)  
METHOD FOR PRODUCING HALF-FINISHED PRODUCTS MADE OF ALUMINIUM ALLOYS AND AN ARTICLE MANUFACTURED WITH THE AID OF SAID METHOD

Title (de)  
HERSTELLUNGSVERFAHREN FÜR HALBFERTIGE PRODUKTE AUS ALUMINIUMLEGIERUNGEN UND EIN UNTER ZUHLFFENAHME DIESES VERFAHRENS HERGESTELLTER ARTIKEL

Title (fr)  
PROCEDE DE FABRICATION D'UN DEMI-PRODUIT A PARTIR D'UN ALLIAGE D'ALUMINIUM ET ARTICLE OBTENU PAR CE PROCEDE

Publication  
**EP 1306461 A4 20071010 (EN)**

Application  
**EP 01957048 A 20010730**

Priority  
• RU 0100319 W 20010730  
• RU 2000120275 A 20000801

Abstract (en)  
[origin: WO0210482A2] The invention relates to a method for producing shaped half-finished products and articles made of high-strength aluminium alloys in the form of ribs, fittings, beams etc. used for the aircraft and space engineering and for vehicle building. The inventive method consists in the following operations: ingot casting, homogenisation and forging thereof; compressing a forged billet, hardening and cold shaping thereof in two stages: 1) stretch flatter with a residual deformation ranging from 1 % to 5 %; 2) three-dimensional bending of the billet simultaneously with local plastic deformation by compression ranging from 1 % to 20 % in coupling zones of elements of the billet which are arranged at an angle ranging from 45 DEG to 135 DEG in relation to each other. Ageing is carried out in two steps: in the first step, the billet is heated to a temperature ranging between 90 DEG C and 120 DEG C during 5-24 hours, in the second step the billet is heated to a temperature ranging between 160 DEG C and 190 DEG C during 5-20 hours. The inventive method makes it possible to produce long half-finished products having an irregular shape and made of deformable aluminium alloys having high strength characteristics and crack resistance and a low level of residual deformations thereby ensuring the production of articles devoid of shrinkage and buckling during mechanical operations.

IPC 1-7  
**C22F 1/04**

IPC 8 full level  
**C22F 1/04** (2006.01); **C22F 1/053** (2006.01)

IPC 8 main group level  
**C25D** (2006.01)

CPC (source: EP US)  
**C22F 1/04** (2013.01 - EP US); **C22F 1/053** (2013.01 - EP US)

Citation (search report)  
• [X] US 3392568 A 19680716 - GARRITY GEORGE L  
• See references of WO 0210482A2

Cited by  
CN106086734A

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DE FR

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**WO 0210482 A2 20020207; WO 0210482 A3 20020926**; CA 2417998 A1 20030203; CA 2417998 C 20090421; DE 60135853 D1 20081030; EP 1306461 A2 20030502; EP 1306461 A4 20071010; EP 1306461 B1 20080917; RU 2184174 C2 20020627; US 2005028899 A1 20050210

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