

Title (en)

METHOD FOR WARM SWAGING AL-MG ALLOY PARTS

Title (de)

VERFAHREN ZUM TIEFZIEHEN VON TEILEN AUS AL-MG-LEGIERUNGEN UNTER WARMER TEMPERATUR

Title (fr)

PROCEDE D'EMBOUTISSAGE A TIEDE DE PIECES EN ALLIAGE Al-Mg

Publication

EP 1601478 B1 20071017 (FR)

Application

EP 04713927 A 20040224

Priority

- FR 2004000407 W 20040224
- FR 0302335 A 20030226

Abstract (en)

[origin: US2006130941A1] A method for the production of swaged aluminum alloy parts, by production of a 0.5 mm-5 mm thick alloy strip made of 1-6 wt. % Mg, <1.2 wt. % Mn, <1 wt. % Cu, <1 wt. % Zn, <3 wt. % Si, <2 wt. % Fe, <0.4 wt. % Cr, Zr<0.3, other elements <0.1 each, total of <0.5, the remainder being Al, cutting a blank from the strip, locally or totally heating the blank at a temperature of 150-350° C. for <30 secs, and swaging the heated blank with the aid of heated tools, at least partially, at a temperature of 150-350° C. in the presence of a lubricant which is compatible with later operations. The swaged parts are automotive body work parts.

IPC 8 full level

B21D 22/20 (2006.01); **C22C 21/06** (2006.01); **C22F 1/047** (2006.01)

CPC (source: EP KR NO US)

B21D 22/20 (2013.01 - KR); **B21D 22/201** (2013.01 - EP NO US); **C22C 21/06** (2013.01 - KR); **C22F 1/047** (2013.01 - EP NO US)

Cited by

WO2018011069A1; FR3053979A1; EP2548670A1; DE102011051943A1; WO2018185425A1; US11649536B2; WO2015004340A1; EP3199655A2; US11939655B2; EP3839085A1; WO2021122621A1

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PT RO SE SI SK TR

DOCDB simple family (publication)

US 2006130941 A1 20060622; US 8486206 B2 20130716; AR 043213 A1 20050720; AT E375828 T1 20071115; AU 2004216425 A1 20040910; BR PI0407807 A 20060214; CA 2516636 A1 20040910; CN 100354056 C 20071212; CN 1753740 A 20060329; CZ 2005583 A3 20051214; DE 602004009545 D1 20071129; DE 602004009545 T2 20080807; EP 1601478 A1 20051207; EP 1601478 B1 20071017; ES 2295824 T3 20080416; FR 2851579 A1 20040827; FR 2851579 B1 20050401; JP 2006519105 A 20060824; JP 4829774 B2 20111207; KR 101084409 B1 20111118; KR 20050106452 A 20051109; MX PA05008819 A 20051018; NO 20053989 D0 20050826; NO 20053989 L 20051128; NO 343790 B1 20190611; PL 377565 A1 20060206; WO 2004076092 A1 20040910

DOCDB simple family (application)

US 54500304 A 20040224; AR P040100498 A 20040218; AT 04713927 T 20040224; AU 2004216425 A 20040224; BR PI0407807 A 20040224; CA 2516636 A 20040224; CN 200480005247 A 20040224; CZ 2005583 A 20040224; DE 602004009545 T 20040224; EP 04713927 A 20040224; ES 04713927 T 20040224; FR 0302335 A 20030226; FR 2004000407 W 20040224; JP 2006502161 A 20040224; KR 20057015651 A 20040224; MX PA05008819 A 20040224; NO 20053989 A 20050826; PL 37756504 A 20040224