

Title (en)  
Pipe forging method with cast hollow block

Title (de)  
Rohrschmiedeverfahren mit urgeformtem Hohlblock

Title (fr)  
Procédé de forgeage de tuyau avec bloc creux moulé

Publication  
**EP 2554293 A1 20130206 (DE)**

Application  
**EP 12005323 A 20120720**

Priority  
DE 102011109071 A 20110730

Abstract (en)  
The method comprises making a tubular billet (104) with a central cavity (104a) by a primary shaping operation, mechanically machining the billet, descaling the billet using a high pressure method, coating a portion of the billet that defines the cavity with a lubricant, feeding the billet to a radial forging machine, and forging the billet into a tube by decreasing an outer diameter of the billet and a radial thickness of a wall of the billet. The primary shaping operation is electro-slag conversion or rotary casting. The method comprises making a tubular billet (104) with a central cavity (104a) by a primary shaping operation, mechanically machining the billet, descaling the billet using a high pressure method, coating a portion of the billet that defines the cavity with a lubricant, feeding the billet to a radial forging machine, and forging the billet into a tube by decreasing an outer diameter of the billet and a radial thickness of a wall of the billet. The primary shaping operation is electro-slag conversion or rotary casting. The mechanical machining removes a surface skin from the billet. The step of forging the billet is carried out using a forging mandrel (1) as an inner mold. The forging mandrel comprises a coating such as a scale coating, a ceramic coating and/or a coating with metal alloy. A base body of the forging mandrel comprises a surface profiling, where the coating is applied on the surface profiling. The surface profiling forms an undercut in an axial direction of the forging mandrel, and comprises elevations and depressions on the surface of the base body. The coating is applied: as a layer on the forging mandrel for protecting the forging mandrel against thermal and mechanical stresses; and by a thermo-chemical coating method.

Abstract (de)  
Verfahren zum Schmieden eines Rohres, umfassend die Schritte: a. Zuführen eines Hohlblocks (104) mit einer zentralen Ausnehmung (104a) zu einer Radialschmiedevorrichtung, und b. Schmieden des Hohlblocks (104) zu einem Rohr unter Verringerung eines Au-<sup>2</sup>endurchmessers und einer Wandstärke des Hohlblocks (104), ferner umfassend den Schritt: a1. Herstellen des Hohlblocks (104) mit der zentralen Ausnehmung (104a) vor Schritt a. durch ein Urformverfahren.

IPC 8 full level  
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CPC (source: EP US)  
**B21J 5/002** (2013.01 - EP US); **B21J 7/14** (2013.01 - EP US)

Citation (applicant)  
EP 1814679 A1 20070808 - V&M DEUTSCHLAND GMBH [DE]

Citation (search report)  
• [X1] DE 102010012717 A1 20101216 - DAIMLER AG [DE]  
• [X1] CN 101722262 A 20100609 - BEIJING SHG TECHNOLOGY RES AND & DATABASE EPODOC [online] EUROPEAN PATENT OFFICE, THE HAGUE, NL; 9 June 2010 (2010-06-09), Database accession no. CN101722262

Designated contracting state (EPC)  
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Designated extension state (EPC)  
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**EP 2554293 A1 20130206**; CN 102896265 A 20130130; DE 102011109071 A1 20130131; US 2013025338 A1 20130131

DOCDB simple family (application)  
**EP 12005323 A 20120720**; CN 201210266573 A 20120730; DE 102011109071 A 20110730; US 201213560083 A 20120727