

Title (en)  
METHOD FOR PRODUCING A SHAPED AND AT LEAST REGIONALLY HARDENED SHEET METAL COMPONENT AND QUENCH PRESS DIE FOR PRODUCING SUCH A COMPONENT

Title (de)  
VERFAHREN ZUM HERSTELLEN EINES UMGEGFORMTEN UND ZUMINDEST BEREICHSWEISE GEHÄRTETEN METALLBLECHBAUTEILS SOWIE PRESSHÄRTWERKZEUG ZUM HERSTELLEN EINES SOLCHEN BAUTEILES

Title (fr)  
PROCÉDÉ DE FABRICATION D'UN ÉLÉMENT EN TÔLE MÉTALLIQUE FORMÉ ET TREMPÉ AU MOINS PAR ENDROITS, ET MOULE DE TREMPÉ SOUS PRESSE PERMETTANT DE FABRIQUER UN TEL ÉLÉMENT

Publication  
**EP 2874765 B1 20170712 (DE)**

Application  
**EP 13737586 A 20130710**

Priority  
• DE 102012106405 A 20120717  
• EP 2013064596 W 20130710

Abstract (en)  
[origin: WO2014012831A1] The invention relates to a method for producing a shaped and at least regionally hardened sheet metal component, particularly a sheet steel component (15), with at least one perforation (16) produced in it, in which method a preform (13) is heated to forming temperature, subsequently shaped and then at least regionally hardened by corresponding cooling, wherein the at least one perforation (16) in the preform (13) is produced during the course of a punching process before the preform (13) is hardened. According to the invention, the metal piece (14) separated from the preform (13) by punching is fed back to its original position or a corresponding position in the perforation (16), remains there for the duration of the quenching process and is only pressed out during or after removal of the sheet steel component (13) from the die (1), in which it is held during quenching. The invention also describes a quench press die (1) for producing a shaped and at least regionally hardened sheet metal component, particularly a sheet steel component (15), with at least two die parts (2, 3) adjustable against one another for opening and closing the die (1) and with a punching device (7) comprising a punching die (8) for producing a perforation (16) in a preform (13) located between the die parts (2, 3). The die part (2), against which the punching die (8) for producing the perforation (16) works, has a return punch (11), the actuation side of which points towards the punching die (8) and the axis of motion of which corresponds to the axis of motion of the punching die (8), such that a metal piece (14) separated from a preform (13) by means of said punching die (8) can be returned to the correct position, or approximately to the correct position in the perforation (16) produced in the preform (13) by the punching process to fill said perforation.

IPC 8 full level  
**B21D 22/02** (2006.01); **B21D 28/26** (2006.01); **B21D 35/00** (2006.01); **C21D 1/18** (2006.01); **C21D 8/02** (2006.01); **C21D 9/00** (2006.01); **C21D 9/46** (2006.01); **C22C 38/00** (2006.01)

CPC (source: EP US)  
**B21D 22/022** (2013.01 - EP US); **B21D 28/26** (2013.01 - EP US); **B21D 35/001** (2013.01 - EP US); **C21D 1/18** (2013.01 - EP US); **C21D 8/0221** (2013.01 - EP US); **C21D 8/0247** (2013.01 - EP US); **C21D 8/0294** (2013.01 - EP US); **C21D 9/0062** (2013.01 - EP US); **C21D 9/46** (2013.01 - EP US); **C22C 38/00** (2013.01 - EP US)

Designated contracting state (EPC)  
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

DOCDB simple family (publication)  
**WO 2014012831 A1 20140123**; DE 102012106405 A1 20140123; DE 102012106405 B4 20160616; EP 2874765 A1 20150527; EP 2874765 B1 20170712; ES 2640920 T3 20171107; HU E034381 T2 20180228; PL 2874765 T3 20171130; US 2015144232 A1 20150528; US 9708678 B2 20170718

DOCDB simple family (application)  
**EP 2013064596 W 20130710**; DE 102012106405 A 20120717; EP 13737586 A 20130710; ES 13737586 T 20130710; HU E13737586 A 20130710; PL 13737586 T 20130710; US 201314404927 A 20130710