

Title (en)
METHOD FOR HARDENING SHEET METAL MATERIAL AND HARDENED METAL SHEET MATERIAL

Title (de)
VERFAHREN ZUM HÄRTEN EINES BLECHMATERIALS UND GEHÄRTETES METALLBLECHMATERIAL

Title (fr)
PROCÉDÉ DE TREMPÉ DE TÔLES ET TÔLES MÉTALLIQUES TREMPÉES

Publication
EP 3041963 B1 20210421 (DE)

Application
EP 14755656 A 20140822

Priority

- DE 102013217431 A 20130902
- EP 2014067924 W 20140822

Abstract (en)
[origin: WO2015028406A1] The invention relates to a method for hardening sheet metal material which has a particularly hard and scratch -resistant surface. Said method comprises the following: the sheet metal material is subjected to at least one reinforcing beam, a front side of the sheet metal material and/or a rear side of the sheet metal material are also subjected, respectively, to at least one reinforcing beam.

IPC 8 full level
C21D 7/06 (2006.01); **B24C 1/10** (2006.01); **E03C 1/18** (2006.01)

CPC (source: EP US)
B24C 1/10 (2013.01 - EP US); **B24C 3/10** (2013.01 - EP US); **C21D 7/06** (2013.01 - EP US); **C22C 38/001** (2013.01 - EP US); **C22C 38/002** (2013.01 - EP US); **C22C 38/02** (2013.01 - EP US); **C22C 38/04** (2013.01 - EP US); **C22C 38/34** (2013.01 - EP US); **C22C 38/58** (2013.01 - EP US); **C21D 9/48** (2013.01 - EP US); **Y10T 29/479** (2015.01 - EP US); **Y10T 428/12993** (2015.01 - 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 2015028406 A1 20150305; CA 2922443 A1 20150305; CA 2922443 C 20210511; DE 102013217431 A1 20150305; EP 3041963 A1 20160713; EP 3041963 B1 20210421; US 10000822 B2 20180619; US 10837070 B2 20201117; US 2016177409 A1 20160623; US 2018237873 A1 20180823

DOCDB simple family (application)
EP 2014067924 W 20140822; CA 2922443 A 20140822; DE 102013217431 A 20130902; EP 14755656 A 20140822; US 201615056396 A 20160229; US 201815958787 A 20180420