

Title (en)

Tools with a thermo-mechanically modified working region and methods of forming such tools

Title (de)

Werkzeuge mit thermomechanisch verändertem Arbeitsbereich und Verfahren zur Formung solcher Werkzeuge

Title (fr)

Outils dotés d'une région de travail thermo-mécaniquement modifiée et procédés pour la formation de tels outils

Publication

EP 1985390 B1 20110511 (EN)

Application

EP 08251055 A 20080325

Priority

- US 4753208 A 20080313
- US 89672907 P 20070323

Abstract (en)

[origin: EP1985390A1] Tools with a thermo-mechanically modified working region and methods of forming such tools. The tool (10) includes a working region containing steel altered by a thermomechanical process to contain modified carbide and/or alloy bands (24). In use, a surface (18) of the working region contacts a workpiece (25) when the tool (10) is used to perform a metal-forming operation.

IPC 8 full level

B21K 5/20 (2006.01); **B21D 37/20** (2006.01); **B21J 5/08** (2006.01); **B22F 3/17** (2006.01); **C21D 6/02** (2006.01); **C21D 7/13** (2006.01); **C21D 9/00** (2006.01); **C21D 9/18** (2006.01); **C22C 38/22** (2006.01); **C22C 38/24** (2006.01)

CPC (source: EP)

B21D 37/20 (2013.01); **B21D 37/205** (2013.01); **B21J 5/08** (2013.01); **B21K 5/20** (2013.01); **B22F 3/17** (2013.01); **C21D 6/02** (2013.01); **C21D 7/13** (2013.01); **C21D 9/0068** (2013.01); **C21D 9/18** (2013.01); **C22C 38/22** (2013.01); **C22C 38/24** (2013.01); **B22F 2003/175** (2013.01); **B22F 2005/002** (2013.01)

Cited by

EP2090383A1; US9132567B2

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MT NL NO PL PT RO SE SI SK TR

DOCDB simple family (publication)

EP 1985390 A1 20081029; **EP 1985390 B1 20110511**; PL 1985390 T3 20110930

DOCDB simple family (application)

EP 08251055 A 20080325; PL 08251055 T 20080325