

Title (en)
TOOL

Title (de)
WERKZEUG

Title (fr)
OUTIL

Publication
EP 2470321 A1 20120704 (DE)

Application
EP 10730402 A 20100621

Priority

- DE 102009043850 A 20090825
- EP 2010058693 W 20100621

Abstract (en)
[origin: WO2011023428A1] The invention relates to a tool comprising a shaft (1) that has a central continuous inner duct (2), and an insert (3) that extends into the inner duct and is force-locked and/or form-locked to the shaft. The inner duct has one or more enlargements (4) that are used as cooling ducts during operation of the tool.

IPC 8 full level
B23B 31/117 (2006.01); **B23B 51/06** (2006.01)

CPC (source: EP US)
B23B 51/06 (2013.01 - EP US); **B23P 15/32** (2013.01 - EP US); **Y10T 407/14** (2015.01 - EP US); **Y10T 408/45** (2015.01 - EP US)

Citation (search report)
See references of WO 2011023428A1

Citation (examination)

- DE 4115992 A1 19921119 - BILZ OTTO WERKZEUG [DE]
- EP 0781616 A1 19970702 - DAISHOWA SEIKI [JP]

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 SE SI SK SM TR

DOCDB simple family (publication)
DE 102009043850 A1 20110303; EP 2470321 A1 20120704; JP 2013503046 A 20130131; US 2012163931 A1 20120628;
WO 2011023428 A1 20110303

DOCDB simple family (application)
DE 102009043850 A 20090825; EP 10730402 A 20100621; EP 2010058693 W 20100621; JP 2012525945 A 20100621;
US 201013389917 A 20100621