

Title (en)  
TOOL, MACHINE TOOL, AND METHOD FOR MACHINING PLANAR WORKPIECES

Title (de)  
WERKZEUG UND WERKZEUGMASCHINE SOWIE VERFAHREN ZUR BEARBEITUNG VON PLATTENFÖRMIGEN WERKSTÜCKEN

Title (fr)  
OUTIL ET MACHINE-OUTIL ET PROCÉDÉ DE TRAITEMENT DE PIÈCES EN FORME DE PLAQUES

Publication  
**EP 3515621 A1 20190731 (DE)**

Application  
**EP 17772696 A 20170926**

Priority  
• DE 102016118175 A 20160926  
• DE 102016119464 A 20161012  
• EP 2017074298 W 20170926

Abstract (en)  
[origin: WO2018055183A1] The invention relates to a tool, to a machine tool, and to a method for machining planar workpieces (10), in particular metal sheets, having an upper tool (11), which has a clamping shaft (34) and a main body (33), which lie along a common position axis (35), and having at least one tool body (39), which is arranged opposite the clamping shaft (34) on the main body and which comprises a cutting edge (38), having a lower tool (9), which has a main body (41) having a support surface (47) for the workpiece (10), and having at least one counter tool body (93), which is provided on the main body (41) and which comprises a counter cutting edge (51), the main body (41) having a position axis (48), which is oriented perpendicularly to the support surface (47), the counter cutting edge (51) of the at least one counter tool body (93) being designed as a closed contour and the cutting edge (38) of the at least one tool body (39) having a cutting contour that corresponds to the closed contour of the counter tool body (93), at least one group (411, 412, 418) of at least two counter tool bodies (93) being provided on the lower tool (9), which counter tool bodies can be associated with the at least one tool body (39) with respect to the closed contour exclusively by means of a travel motion perpendicular or at an angle to the position axis (35, 48) of the upper tool (11) and/or lower tool (9) or by means of a combination of the travel motion perpendicular or at angle to the position axis (35, 48) and by means of a rotational motion about the position axis (35, 48) of the upper tool (11) and/or lower tool (9), in the at least one group (411, 412, 418) the contour of the first counter tool body (93) corresponding to the cutting contour of the tool body (39) having a first cutting gap width and the contour of the second or further counter tool body (93) corresponding to the cutting contour of the tool body (39) having a second or further cutting gap width.

IPC 8 full level  
**B21D 28/12** (2006.01); **B21D 28/34** (2006.01)

CPC (source: EP US)  
**B21D 28/125** (2013.01 - EP US); **B21D 28/34** (2013.01 - EP US); **B26F 2001/4427** (2013.01 - EP US); **Y10T 83/8732** (2015.04 - US); **Y10T 83/8733** (2015.04 - US)

Citation (search report)  
See references of WO 2018055183A1

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

Designated extension state (EPC)  
BA ME

DOCDB simple family (publication)  
**WO 2018055183 A1 20180329**; CN 109789470 A 20190521; CN 109789470 B 20220225; EP 3515621 A1 20190731; US 11376647 B2 20220705; US 2019217367 A1 20190718

DOCDB simple family (application)  
**EP 2017074298 W 20170926**; CN 201780059069 A 20170926; EP 17772696 A 20170926; US 201916363516 A 20190325