

Title (en)
ULTRASONICALLY VIBRATED DIE RINGS

Title (de)
DÜSENRINGE MIT ULTRASCHALLVIBRATION

Title (fr)
ANNEAUX D'UNE MATRICE AMENÉE À VIBRER PAR DES ULTRASON

Publication
EP 3341146 B1 20190828 (EN)

Application
EP 15770586 A 20150827

Priority
GB 2015052486 W 20150827

Abstract (en)
[origin: WO2017032959A1] An ultrasonically vibrated die (1) comprises a generally cylindrical die ring (2) supported by a coaxial resonant mounting tube (4). The die ring (2) is vibrated in a radial bending (RB0) mode of vibration, in which an end surface (5) of the die ring (2) oscillates between a concave and a convex state. The mounting tube (4) joins the end surface (5) of the die ring (2) at a radius R where the amplitude of the oscillation of the end surface (5) is at a minimum, in order to reduce transmission of the vibration into the mounting tube (4).

IPC 8 full level
B21D 35/00 (2006.01); **B06B 3/00** (2006.01); **B21C 1/00** (2006.01); **B21D 22/20** (2006.01); **B21D 51/26** (2006.01)

CPC (source: EP US)
B06B 3/00 (2013.01 - EP US); **B21C 1/006** (2013.01 - EP US); **B21C 3/04** (2013.01 - EP US); **B21D 22/20** (2013.01 - EP US); **B21D 35/008** (2013.01 - EP US); **B21D 51/2615** (2013.01 - EP US); **B21D 51/2638** (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 2017032959 A1 20170302; BR 112018003915 A2 20180925; EP 3341146 A1 20180704; EP 3341146 B1 20190828; EP 3341146 B8 20191002; ES 2759350 T3 20200508; MX 2018002475 A 20190110; PL 3341146 T3 20200615; US 2018326468 A1 20181115

DOCDB simple family (application)
GB 2015052486 W 20150827; BR 112018003915 A 20150827; EP 15770586 A 20150827; ES 15770586 T 20150827; MX 2018002475 A 20150827; PL 15770586 T 20150827; US 201515755802 A 20150827