

Title (en)  
FORGING TOOL FOR THE MANUFACTURE OF A SHAPED ROLLED RING, NOTABLY FOR THE MANUFACTURE OF A TURBOMACHINE DISC

Title (de)  
SCHMIEDEWERKZEUG ZUR HERSTELLUNG EINES GEFORMTEN GEWALZTEN RINGS, INSBESONDERE ZUR HERSTELLUNG EINER TURBOMASCHINENSCHLEIBE

Title (fr)  
OUTILLAGE DE FORGEAGE POUR LA FABRICATION D'UNE COURONNE LAMINEE DE FORME, NOTAMMENT POUR LA FABRICATION D'UN DISQUE DE TURBOMACHINE

Publication  
**EP 3086891 B1 20171227 (FR)**

Application  
**EP 15705675 A 20150202**

Priority  
• FR 1450889 A 20140205  
• FR 2015050229 W 20150202

Abstract (en)  
[origin: CA2945500A1] Mandrels (1, 2) for the rolling of a ring (7) comprise impressions (5, 6) to accommodate the ring, which impressions have fillet radii where the various faces meet, so as to avoid the creation of sharp corners on the rolled ring (7) and the accidental formation of cracks.

IPC 8 full level  
**B21H 1/06** (2006.01)

CPC (source: EP RU US)  
**B21H 1/06** (2013.01 - EP RU US)

Citation (opposition)  
Opponent : SMS group GmbH  
• DE 29907807 U1 19990701 - SCHILLER WALZ UND WERKZEUGTECH [DE]  
• JP 2002086241 A 20020326 - TOYOTA MOTOR CORP, et al  
• JP H10277692 A 19981020 - SANYO SPECIAL STEEL CO LTD  
• JP H03268833 A 19911129 - DAIDO STEEL CO LTD  
• EP 1623792 A1 20060208 - SNECMA [FR]  
• DD 235577 A1 19860514 - WÄELZLAGER NORMTEILE VEB [DD]  
• FR 349947 A 19050727 - LOUIS GASNE [FR]  
• CN 202963336 U 20130605 - AVIC EXCELLENCE FORGING WUXI CO LTD  
• ALLWOOD, JULIAN M. ET AL.: "The Development of Ring Rolling Technology", STEEL RESEARCH INT., vol. 76, no. 2 / 3, 2005, pages 111 - 120, 491-507, XP055523170

Designated contracting state (EPC)  
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DOCDB simple family (publication)  
**FR 3017060 A1 20150807; FR 3017060 B1 20160826**; BR 112016017512 A2 20170808; BR 112016017512 B1 20221101;  
CA 2945500 A1 20150813; CA 2945500 C 20220906; CN 105934293 A 20160907; CN 105934293 B 20180202; EP 3086891 A1 20161102;  
EP 3086891 B1 20171227; RU 2687324 C1 20190513; US 10543523 B2 20200128; US 2016339504 A1 20161124;  
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FR 2015050229 W 20150202; RU 2016135654 A 20150202; US 201515114918 A 20150202