

Title (en)
METHOD FOR PRODUCING FIBRE REINFORCED METALLIC COMPONENTS

Title (de)
VERFAHREN ZUR HERSTELLUNG VON FASERVERSTÄRKTEN METALLISCHEN BAUTEILEN

Title (fr)
PROCEDE DE FABRICATION DE COMPOSANTS METALLIQUES RENFORCES PAR DES FIBRES

Publication
EP 1071831 A1 20010131 (DE)

Application
EP 00904850 A 20000208

Priority
• DE 0000246 W 20000208
• DE 19905100 A 19990209

Abstract (en)
[origin: DE10005250A1] Fiber-reinforced metal component production comprises plastic shaping and then diffusion welding of an assembly of loose metal-coated SiC fibers (5) between metal pieces (2, 8). Production of a fiber-reinforced metallic component with a complicated spatial geometry comprises: (a) application of a desired number, distribution and orientation of metal-coated SiC fibers (5) onto a metallic profile piece (2) of simple geometry and fixing of the fibers by a metallic counter-piece (8); (b) plastic shaping of the assembly (10) under pressure between shaping tools (12,13) at elevated temperature and under vacuum to achieve the desired complicated geometry without significant bonding of the fibers (5) to one another or to the metallic pieces (2, 8); and (c) pressure and/or temperature increase for further compaction of the assembly between the tools and for consolidation by diffusion welding to produce a monolithic part which is then cooled and removed from the tools and which, alone or in combination with other parts, forms the component.

IPC 1-7
C22C 47/20

IPC 8 full level
C22C 47/02 (2006.01); **C22C 47/04** (2006.01); **C22C 47/06** (2006.01); **C22C 47/20** (2006.01); **C22C 49/08** (2006.01); **C22C 49/11** (2006.01); **C22C 49/14** (2006.01); **F01D 5/28** (2006.01); **F02C 7/00** (2006.01); **C22C 101/14** (2006.01); **C22C 121/02** (2006.01)

CPC (source: EP US)
B22F 5/04 (2013.01 - EP US); **C22C 47/025** (2013.01 - EP US); **C22C 47/064** (2013.01 - EP US); **C22C 47/068** (2013.01 - EP US); **C22C 47/20** (2013.01 - EP US); **B22F 2998/00** (2013.01 - EP US)

Citation (search report)
See references of WO 0047792A1

Designated contracting state (EPC)
DE FR GB

DOCDB simple family (publication)
DE 10005250 A1 20000810; **DE 10005250 B4 20041028**; DE 50007966 D1 20041104; EP 1071831 A1 20010131; EP 1071831 B1 20040929; JP 2002541319 A 20021203; US 6698645 B1 20040302; WO 0047792 A1 20000817

DOCDB simple family (application)
DE 10005250 A 20000206; DE 0000246 W 20000208; DE 50007966 T 20000208; EP 00904850 A 20000208; JP 2000598684 A 20000208; US 67306101 A 20010202