

Title (en)  
DYNAMIC BONDING OF POWDER METALLURGY MATERIALS

Title (de)  
DYNAMISCHE VERBINDUNG VON PULVERMETALLURGIEMATERIALIEN

Title (fr)  
LIAISON DYNAMIQUE DE MATÉRIAUX DE LA MÉTALLURGIE DES POUDRES

Publication  
**EP 3187283 A1 20170705 (EN)**

Application  
**EP 16206377 A 20161222**

Priority  
US 201514982627 A 20151229

Abstract (en)  
A dynamic compaction process comprising providing a preform (20; 112) including forming a first container (28) having an interior and an exterior. Filling the interior of the first container (28) with a first powder material (22); sealing the first container (28); subjecting the exterior of the first container (28) to an instantaneous dynamic compaction, forming a solid powder metallurgy billet (210) encased by the first container (28). The process includes attaching a second container (116) to a portion of the preform (20; 112), filling the second container (116) with a second powder material (110, 118); subjecting the exterior of the second container (116) to an instantaneous dynamic compaction. The process includes forming a second solid powder metallurgy material (24; 110, 118) from the second powder material (24; 110, 118) encased by the second container (116). The process includes bonding the second solid powder metallurgy material (24; 110, 118) to the portion of the preform (20; 112); and removing the second container (116) from the component precursor (10; 100).

IPC 8 full level  
**B22F 3/08** (2006.01); **B22F 3/087** (2006.01); **B22F 3/12** (2006.01); **B22F 5/00** (2006.01); **B22F 7/06** (2006.01)

CPC (source: EP)  
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Citation (search report)

- [XAI] US 2009317653 A1 20091224 - WAKADE SHEKHAR G [US], et al
- [A] US 3220103 A 19651130 - SIMONS CHARLES C
- [IJ] GB 2228217 A 19900822 - MTU MUENCHEN GMBH [DE]
- [X] US 2014093384 A1 20140403 - MIRONETS SERGEY [US], et al
- [A] "EXPLOSIVE WELDING, FORMING AND COMPACTION", 27 April 2012, APPLIED SCIENCE PUBLISHERS, ISBN: 978-94-011-9751-9, article R PRÜMMER: "Chapter 10 - Powder Compaction", pages: 369 - 395, XP055366027, DOI: 10.1007/978-94-011-9751-9
- [A] "EXPLOSIVE WELDING, FORMING AND COMPACTION", 1 January 1983, APPLIED SCIENCE PUBLISHERS, ISBN: 978-94-011-9751-9, article T Z BLAZYNSKI: "Chapter 8 - Welding of tubular, rod and special assemblies", pages: 289 - 345, XP055368793, DOI: 10.1007/978-94-011-9751-9

Cited by  
CN114829062A; CN115070044A; CN115070041A; CN115070040A; CN115070039A; CN115070043A

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