

Title (en)
METHOD AND APPARATUS FOR CASTING

Publication
EP 0388235 A3 19901024 (EN)

Application
EP 90302880 A 19900316

Priority
US 32522189 A 19890317

Abstract (en)
[origin: EP0388235A2] An apparatus (10) comprising a pressure vessel (12) and a device for evacuating and pressurizing the vessel (12). The evacuating and pressurizing device is in fluidic connection with the vessel (12). The apparatus (10) is also comprised of a crucible (14) disposed in the pressure vessel (12) within which material (16) is melted. There is a mold chamber (18) disposed in the pressure vessel (12) within which a mold (20) is held. The mold chamber (18) is in fluidic connection with the crucible (14). Additionally, the apparatus (10) is comprised of a device for heating material in the crucible (14) and the mold (20) in the mold chamber (18) such that material is melted in the crucible (14) and stays melted as it is drawn to the mold chamber (18) while the evacuating and pressurizing device acts on the vessel (12), and when it is forced into the mold (20) while the evacuating and pressurizing device pressurizes the vessel (12). The heating device is disposed in the vessel (12). Additionally, there is a method comprising the steps of placing in a mold chamber (18) of a pressure vessel (12) a fiber array mold (20); placing in a crucible (14) of the pressure vessel (12) a material; evacuating the vacuum vessel (12) through the mold chamber (18); melting the material in the crucible (14); placing the crucible (14) in fluidic connection with the mold chamber (18); and charging the vessel (12) while it is continually evacuated such that the melted material is drawn into the mold chamber (18) and forced into the mold (20). Additionally, there is a method for reducing the required mold (20) strength by controlling the pressure at the mold (20) wall by controlling the pressurization rate.

IPC 1-7
B22D 18/06; **B22D 18/04**; **B22D 19/14**

IPC 8 full level
B22D 41/005 (2006.01); **B22D 18/04** (2006.01); **B22D 18/06** (2006.01); **B22D 19/14** (2006.01); **B22D 21/00** (2006.01); **B22D 23/00** (2006.01)

CPC (source: EP)
B22D 18/04 (2013.01); **B22D 18/06** (2013.01); **B22D 19/14** (2013.01)

Citation (search report)

- [X] DE 3416132 A1 19851114 - SCHUESSLER BERND
- [AD] US 4573517 A 19860304 - BOOTH STUART E [GB], et al
- [Y] US 3900064 A 19750819 - CHANDLEY GEORGE D, et al
- [Y] US 3201836 A 19650824 - GUSTAV NYSELIUS
- [YD] PROCEEDINGS OF THE SIXTH INTERNATIONAL CONFERENCE ON COMPOSITE MATERIALS, 1987, pages 2320-2329, Elsevier Applied Science, London, GB; J.A. CORNIE et al.: "Pressure casting of fiber-reinforced metals"
- [Y] PATENT ABSTRACTS OF JAPAN, vol. 8, no. 158 (M-311)[1595], 21st July 1984; & JP-A-59 54 458 (HITACHI SEISAKUSHO K.K.) 29-03-1984
- [A] PATENT ABSTRACTS OF JAPAN, vol. 7, no. 102 (M-211)[1247], 30th April 1983; & JP-A-58 23 562 (UBE KOSAN K.K.) 12-02-1983

Cited by
US5255729A; EP0739667A1; FR2760984A1; ES2178912A1; GB2247636A; EP0706431A4; DE10030874A1; DE10030874C2; EP1166989A3; GB2287205A; GB2287205B; US5787960A; US6318442B1; WO9842463A1

Designated contracting state (EPC)
AT DE FR GB IT

DOCDB simple family (publication)
EP 0388235 A2 19900919; **EP 0388235 A3 19901024**; **EP 0388235 B1 19950726**; AT E125476 T1 19950815; DE 69021103 D1 19950831; DE 69021103 T2 19960411; JP H02284756 A 19901122

DOCDB simple family (application)
EP 90302880 A 19900316; AT 90302880 T 19900316; DE 69021103 T 19900316; JP 6799690 A 19900316