Title (en)

DIE CASTING DEVICE AND METHOD FOR AMORPHOUS ALLOY

Title (de)

DRUCKGIESSVORRICHTUNG UND VERFAHREN FÜR AMORPHE LEGIERUNG

Title (fr)

DISPOSITIF ET PROCÉDÉ DE MOULAGE EN COQUILLE POUR ALLIAGE AMORPHE

Publication

EP 2790853 A4 20150805 (EN)

Application

EP 12858511 A 20121213

Priority

- CN 201110421420 A 20111215
- CN 2012086494 W 20121213

Abstract (en)

[origin: WO2013086990A1] A die casting apparatus (100) for amorphous alloy comprises a stationary die (1) and a movable die (2); a sealed cabin (4) difining a sealing chamber (40); a protecting gas supplying device connected with the sealed cabin (4) for supplying the protecting gas into the sealing chamber (40); a melting device (5) for receiving and melting amorphous alloy; a feed sleeve (6) having a molten material inlet (60), with a plunger (7) positioned therein for injecting the molted amorphous alloy from the melting device (5) into a die chamber via the molten material inlet (60); a driving device (8) connected with the plunger (7) for driving the plunger (7) in the feed sleeve (6); and a gas purifying device (10) communicated with the sealed cabin (4) for purifying the gas from the sealed cabin (4). A method of die casting an amorphous alloy comprises the steps of purifying a sealing chamber (40) defined in a sealed cabin (4); supplying protecting gas into the sealing chamber (40) to maintain the protecting gas in the sealing chamber (40) to a positive pressure; feeding amorphous alloy into a melting device (5) to obtain the molten amorphous alloy; feeding the molten amorphous alloy into a die chamber (3); and opening the mated stationary and movable dies to extract at least a component. The apparatus and method use positive pressure protecting gas without the need to form high degree vacuum, thus reducing manufacturing and maintenance costs.

IPC 8 full level

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CPC (source: EP US)

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Citation (search report)

- [XY] CN 101596585 A 20091209 - CON JAMES [US]
- [XY] EP 1759781 A1 20070307 - NGK INSULATORS LTD [JP], et al
- [X] EP 0875318 A1 19981104 - YKK CORP [JP]
- [X] US 5860468 A 19990119 - COOK ARNOLD J [US]
- [X] EP 1731245 A2 20061213 - NGK INSULATORS LTD [JP], et al
- [X] US 2006254747 A1 20061116 - ISHIDA MAMORU [JP], et al
- [Y] CN 1418979 A 20030521 - UNIV HARBIN POLYTECHNIC [CN]
- [YD] US 6021840 A 20000208 - COLVIN GREGORY N [US]
- See references of WO 2013086990A1

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