

Title (en)  
Method and apparatus for casting.

Title (de)  
Giessvorrichtung und Verfahren.

Title (fr)  
Procédé et dispositif de coulée.

Publication  
**EP 0388235 A2 19900919 (EN)**

Application  
**EP 90302880 A 19900316**

Priority  
US 32522189 A 19890317

Abstract (en)  
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.

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