

Title (en)
Method to produce metal parts

Title (de)
Verfahren zur Herstellung von Formteilen aus Metallegierungen

Title (fr)
Procédé de fabrication des pièces métalliques

Publication
EP 0554808 B1 19970502 (DE)

Application
EP 93101454 A 19930129

Priority
DE 4202562 A 19920130

Abstract (en)
[origin: EP0554808A1] The invention relates to a process for producing shaped parts made of metal alloys, in which the metal alloys are brought into the molten state and according to conventional casting methods are cast to produce geometrically simple shapes, which is followed by heating to a temperature between the solidus and the liquidus line to form a thixotropic slip, which consists of a solid-liquid mixture of rounded primary particles homogeneously distributed in a melt matrix and which after a holding time is passed to a shaping system. The object of the invention is to simplify and make more economical the preparation of rheo-alloy blanks having a close-grained and homogeneous microstructure. To this end it is provided that the metal alloys are admixed in the molten state with an amount of grain refiner which is increased compared to conventional grain refining, said increased amount being determined from a curve of a diagram in which the particle size in μm is plotted against the addition of grain refiner in per cent by weight, said curve being known for the individual alloys and grain refiners and having a steeply descending first branch and a second branch proceeding asymptotically towards a final value of the particle size, the determination being carried out in such a way that the addition of grain refiner is selected as a value on the second branch of the curve; that the metal alloys are then cooled down to any desired temperature below the solidus line and are then heated to a holding temperature between the solidus and the liquidus line and in the process are held for a holding time of less than 15 minutes. <IMAGE>

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B22D 1/00; **C22C 1/00**

IPC 8 full level
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B22D 1/00 (2013.01); **C22C 1/12** (2023.01)

Cited by
EP1628793A4; US5968292A; US5911843A; EP0701002A1; US5701942A; US5846350A; EP0822994A4; DE102005022506A1; DE102005022506B4; EP0692328A1; US6200396B1; DE19518127A1; US5849115A; DE19518127C2; US7299854B2; US6813547B2; WO2004061140A1; WO0109401A1; US7025113B2; US6808004B2; US6901991B2; US6547896B2; WO9638593A1; WO03064075A1; WO2004099455A3

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