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(54) A CASTING INSERT FABRICATION METHOD USING A COMPOSITION OF POWDERS, A CASTING INSERT AND METHOD OF OBTAINING LOCAL COMPOSITE ZONES IN CASTINGS

(57) The invention relates to a casting insert fabrication method using a composition of powders designed to produce local composite zones resistant to abrasive wear, wherein said composite zones are reinforced with carbides and borides or with mixtures thereof formed *in situ* in castings, and wherein said powder composition is characterized in that it comprises powder reactants of the formation of carbides and/or borides selected from the group of TiC, WC, , or mixtures thereof, said carbides and/or borides forming after crystallization particles reinforcing the composite zones in castings, and wherein said powder composition further comprises moderator powders in the form of a mixture of metal powders, which after crystallization form matrix of the composite zone in casting. Furthermore, the amount of powder reactants for the formation of TiC carbide is from 3 to 40wt% and the amount of moderator powders is from 60 to 97wt%, the amount of powder reactants for the formation of WC carbide is from 40 to 99wt% and the amount of moderator powders is from 1 to 60wt%, or the amount of the mixture of powders of the reactants of the coupled reaction of the synthesis of TiC and WC carbides is from 10 to 70wt% and the amount of moderator powders is from 30 to 90wt%.

The invention also relates to a casting insert for the fabrication in casting of local composite zones resistant to abrasive wear, and to a method for the fabrication of local composite zones in castings, using for this purpose the reaction of the self-propagating high temperature synthesis (SHS).

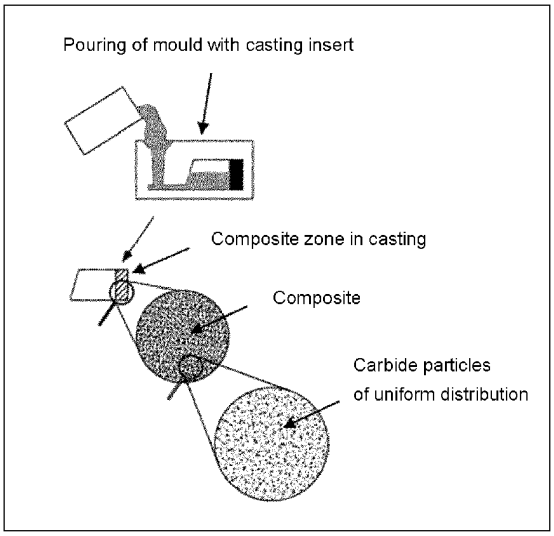

Fig. 10

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(52) Cooperative Patent Classification (CPC): (Cont.)

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B22F 2998/10, B22F 3/02, C22C 1/053

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EUROPEAN SEARCH REPORT

Application Number
EP 22 20 4377

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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TECHNICAL FIELDS SEARCHED (IPC)
B22D B22F C22C

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	10 July 2024	Rischard, Marc

CATEGORY OF CITED DOCUMENTS

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