

Title (en)  
Hard metal part with graded structure

Title (de)  
Hartmetallbauteil mit gradiertem Aufbau

Title (fr)  
Élément en métal dur avec structure graduée

Publication  
**EP 1364732 B1 20080305 (DE)**

Application  
**EP 03008539 A 20030414**

Priority  
AT 2452002 U 20020417

Abstract (en)  
[origin: JP2003328067A] <P>PROBLEM TO BE SOLVED: To provide a structural member made of a cemented carbide and manufactured by a powder metallurgy process, in which at least one additive for controlling growth of crystals of V, Cr, Ti, Ta and Nb, shows a concentration transition in a step-by-step manner at least partially, and thereby the mechanical characteristics show the gradual change, and to provide a method for manufacturing the structural member. <P>SOLUTION: The manufacturing method is characterized by applying a dispersion liquid or a solution, which includes a finely dispersed or dissolved additive for inhibiting growth of the crystals, on the surface of a roughly processed workpiece. The dispersion liquid or the solution intrudes into the inside of the roughly processed workpiece along opening gaps, and thereby the additive for controlling growth of the crystals is dispersed into the roughly processed workpiece in a step-by-step manner. In addition, the additive uniformly dispersed in the state of the solution into the roughly processed workpiece, can be gradually removed from the vicinity of a perimeter of the roughly processed workpiece by heat treatment or with a solvent. <P>COPYRIGHT: (C)2004,JPO

IPC 8 full level  
**B22F 7/02** (2006.01); **B22F 3/10** (2006.01); **C22C 1/05** (2006.01); **C22C 29/02** (2006.01); **C22C 29/08** (2006.01)

CPC (source: EP US)  
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**B22F 2999/00** (2013.01 - EP US)

Cited by  
CN114698373A; DE102008040094A1; DE102008040093A1; WO2006005308A1; US8277959B2; US8475710B2

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