Title (en)
METHOD FOR REFINING TEXTURE OF FERROUS MATERIAL, AND FERROUS MATERIAL AND BLADE HAVING MICROSCOPIC TEXTURE

Title (de)
VERFAHREN ZUR VERFEINERUNG DER TEXTUR VON EISENMATERIAL UND EISENMATERIAL UND KLINGE MIT MIKROSKOPISCHER TEXTUR

Title (fr)
PROCÉDÉ D'AFFINAGE DE LA TEXTURE D'UN MATÉRIAU FERREUX, ET MATÉRIAU FERREUX ET LAME À TEXTURE MICROSCOPIQUE

Publication
**EP 2241642 A1 20101020 (EN)**

Application
**EP 08833284 A 20080926**

Priority
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• JP 2007250587 A 20070927

Abstract (en)
[PROBLEMS] To provide a method for refining the texture of a surface layer part in a ferrous material, to provide a ferrous material having a microscopic texture which can realize improved properties and prolonged service life of cutting tools, blades, and the like, and to provide a blade with a cutting edge formed by fabricating a microscopic texture region, wherein the expression "refining a texture" means the refinement of base metal crystal grains and the refinement of carbides. [MEANS FOR SOLVING PROBLEMS] A method for refining the texture of a ferrous material, comprising a first step of forming a carbide refined region and a second step of forming a texture refined region. In the first step, the surface layer part in the ferrous material is locally and rapidly heated by a laser beam to form a melt reservoir which is then rapidly solidified to form a carbide refined region. In the second step, the carbide refined region formed in the first step is subjected to a friction agitation process to form a texture refined region.

IPC 8 full level
**C21D 1/09** (2006.01); **B23K 20/12** (2006.01); **C21D 9/18** (2006.01)

CPC (source: EP)
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DOCDB simple family (publication)
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