

Title (en)
METHOD FOR PRODUCING BLANKS HAVING A FINE-GRAIN STRUCTURE

Title (de)
VERFAHREN ZUR HERSTELLUNG VON ROHLINGEN MIT FEINKORNSTRUKTUR

Title (fr)
PROCEDE DE PRODUCTION D'EBAUCHES AYANT UNE STRUCTURE A GRAINS FINS

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Abstract (en)
The invention relates to plastic working of metals, in particular, to a method of fabricating workpieces of metals and alloys by plastic deformation, including fabrication of long-length workpieces with a conditioned fine-grained structure, in particular, with a submicrocrystalline and nanocrystalline structure. The method enables the production of longitudinally laminated and internally reinforced workpieces, and can be utilized for processing workpieces from powdered metal components to obtain a solid article. The plastic deformation is performed by extrusion in an extrusion container using a shaping tool arranged in an extrusion channel, which directs the flow of metal and creates a combined intensive upsetting/shear/torsional plastic deformation pattern with simultaneous recovery of the workpiece cross-section area without impairing the continuity. The method reduces expenditures for processing workpieces owing to the use of commercially available equipment, e.g. vertical and horizontal hydraulic presses, and allows processing of workpieces from hard-to-deform and low-plastic alloys, powdered metals, composite materials, as it increases the use factor of the workpiece metal. <IMAGE>

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