

Title (en)  
METHOD AND APPARATUS FOR SIMPLIFIED PRODUCTION OF HEAT TREATABLE ALUMINUM ALLOY CASTINGS WITH ARTIFICIAL SELF-AGING

Title (de)  
VERFAHREN UND VORRICHTUNG ZUR VEREINFACHTEN HERSTELLUNG VON WÄRMEBEHANDELBAREN ALUMINIUMLEGIERUNGSGUSSTEILEN MIT KÜNSTLICHER SELBSTALTERUNG

Title (fr)  
PROCEDE ET APPAREIL DE FABRICATION SIMPLIFIEE DE PIECES MOULEES EN ALLIAGE D'ALUMINIUM APTES AU TRAITEMENT THERMIQUE A AUTOVIEILLISSEMENT ARTIFICIEL

Publication  
**EP 1530651 B1 20101124 (EN)**

Application  
**EP 00987590 A 20001214**

Priority  
IB 0001993 W 20001214

Abstract (en)  
[origin: CA2398600A1] Simplified heat-treatment in making aluminum alloys castings of the type improved by aging, especially for automotive engine cylinder heads and motor blocks. The castings, after solidification and extraction from their molds, each have an end product (workpiece) portion and a riser portion (the latter being ultimately cut off as waste). The workpiece portion of the casting is selectively quenched from solution temperatures down to about 120 °C by spraying water or other appropriate liquid preferably as a gas driven mist onto the surfaces of the workpiece while maintaining the riser portion of the casting essentially unsprayed at relatively significantly higher temperatures. After the quench, the residual reservoir of heat thus retained by said riser portion, by internal heat conduction, reheats the workpiece portion and maintains such workpiece portion for an effective time period within the temperature range for artificial aging, thus obviating any need for the aging furnace used by the prior art. Preferably, the quench is immediately after the casting mold extraction (without the standard natural cooling, reheating, and solution heat-treatment, all prior to quenching), thus obviating also the need for a solution heat-treatment furnace, required by the conventional prior art.

IPC 8 full level  
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