Title (en)

Method and apparatus for heat treating metal castings

Title (de)

Verfahren und Vorrichtung zur Wärmebehandlung von Gussstücken

Title (fr)

Procédé et dispositif pour le traitement thermique de pièces coulées

Publication

EP 0546210 B1 19971001 (EN)

Application

EP 91121229 A 19911211

Priority

US 70562691 A 19910524

Abstract (en)

[origin: EP0546210A1] An improved method and apparatus for heat treating metal castings with sand cores provides for removal of the sand core and recovery of the sand core material for reuse. The method and apparatus eliminate the need for removing the sand core from the casting prior to heat treatment and thus eliminate the labor, expense, and possible damage to the casting incidental to conventional core removal techniques such as chiseling and shaking. The method involves heating the casting with sand core therein to a temperature sufficient to burn off the binder component of the sand core. The sand comprising the sand core is then blown out of the casting by directing a flow of air over the workpiece. The sand thus dislodged is then collected for reuse. According to the disclosed apparatus, the castings are heated in a furnace (11) having fans (44) for directing a flow of air over the workpieces. The sand dislodged from the castings falls into a trough (50) in the lower portion of the furnace, where it is collected and conveyed to a central collection (60) bin for reuse. In another aspect of the disclosed apparatus, the castings are subsequently immersed in a quench tank. The quench tank includes agitation means for agitating water over the castings to dislodge remaining sand. The sand falls to the bottom of the tank, where the sand and a portion of the water are removed from the tank. A major portion of the water is then removed from the sand so that the sand can be reused.

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