

Title (en)

Smelting process of electrically-conductive materials in an induction smelting furnace with a cold crucible and furnace therefor

Title (de)

Schmelzverfahren von elektr leitenden Materialien in einem Induktionsschmelzofen mit kaltem Tiegel und Ofen dafür

Title (fr)

Procédé de fusion d'un matériau électroconducteur dans un four de fusion par induction en creuset froid et four de fusion pour la mise en oeuvre de ce procédé

Publication

EP 0636848 B1 19980930 (FR)

Application

EP 94401703 A 19940725

Priority

FR 9309366 A 19930729

Abstract (en)

[origin: EP0636848A1] The subject of the invention is a process for melting (smelting) an electrically conductive material (1) in a cold-crucible induction melting (smelting) furnace (10) in which a mass of the electrically conductive material (1) is electromagnetically confined, up to its melting point, the inclusionary particles contained in the liquid electrically conductive material (1) are separated off by creating at least one vortex in the said material by electromagnetic stirring, part of the mass of the liquid electrically conductive mass (1) is poured off into a pouring pipe (15) placed underneath the said melting furnace (10), the pouring stream of the liquid electrically conductive material (1) is subjected to radial electromagnetic confinement and there is provision for vertical coaxial alignment of the electromagnetic fields acting on the mass of liquid electrically conductive material (1) and on the pouring stream of the said mass. The subject of the invention is also a cold-crucible induction melting furnace for the implementation of this process. <IMAGE>

IPC 1-7

F27B 14/06; H05B 6/34; B22D 11/10; B22D 39/00

IPC 8 full level

C22B 9/02 (2006.01); **B22D 11/115** (2006.01); **B22D 39/00** (2006.01); **C22B 9/16** (2006.01); **F27B 14/06** (2006.01); **F27B 14/18** (2006.01); **F27B 14/20** (2006.01); **H05B 6/34** (2006.01)

CPC (source: EP KR US)

B22D 11/115 (2013.01 - EP US); **B22D 39/003** (2013.01 - EP US); **F27B 14/00** (2013.01 - KR); **F27B 14/061** (2013.01 - EP US); **H05B 6/34** (2013.01 - EP US); **H05B 2213/02** (2013.01 - EP US)

Cited by

CN109253622A; WO2013183031A1

Designated contracting state (EPC)

BE CH DE ES FR GB IT LI SE

DOCDB simple family (publication)

EP 0636848 A1 19950201; **EP 0636848 B1 19980930**; CA 2128936 A1 19950130; CA 2128936 C 20040622; DE 69413621 D1 19981105; DE 69413621 T2 19990429; FR 2708725 A1 19950210; FR 2708725 B1 19951110; JP 3696903 B2 20050921; JP H07207351 A 19950808; KR 950003779 A 19950217; US 5563904 A 19961008

DOCDB simple family (application)

EP 94401703 A 19940725; CA 2128936 A 19940727; DE 69413621 T 19940725; FR 9309366 A 19930729; JP 17865794 A 19940729; KR 19940018682 A 19940729; US 28170494 A 19940728