

Title (en)

Process for continuous casting of metals using a hot top, and method used therefor.

Title (de)

Stranggiessverfahren mit Kokillen-Aufsatz und Kokille zur Anwendung.

Title (fr)

Procédé de coulée continue en charge des métaux et lingotière pour sa mise en oeuvre.

Publication

**EP 0620062 A1 19941019 (FR)**

Application

**EP 94470007 A 19940328**

Priority

FR 9303871 A 19930330

Abstract (en)

The (ingot) mould according to the invention is provided with a thermo-insulating hot top (2) made from rigid refractory material implanted on the tube element made from chilled copper (1) and means (8, 18, 12, 12, 13, 10) are provided for injecting, through the wall, a pressurised gas which emerges in the casting space 3 in the form of anular jets (streams) which cut through any solidification skin (crust) already formed by the cast metal (4) in contact with the refractory hot top (2). The invention makes it possible to distance the meniscus (7) from the solidification front of the cast metal in the copper element by eliminating the risks of incipient solidification between the two. <IMAGE>

Abstract (fr)

La lingotière selon l'invention est pourvue d'une rehausse thermoisolante (2) en matériau réfractaire rigide implantée sur l'élément tubulaire en cuivre refroidi (1) et des moyens (8, 18, 12, 12, 13, 10) sont prévus pour injecter au travers de la paroi un gaz sous pression qui débouche dans l'espace de coulée 3 sous forme de jets annulaires cisaillant l'éventuelle croûte de solidification déjà formée par le métal coulé (4) au contact de la rehausse réfractaire (2). L'invention permet d'éloigner le ménisque (7) du début de la solidification du métal coulé dans l'élément en cuivre, en supprimant les risques de solidification débutante entre les deux. <IMAGE>

IPC 1-7

**B22D 11/10**; **B22D 11/04**

IPC 8 full level

**B22D 11/04** (2006.01); **B22D 11/11** (2006.01)

CPC (source: EP)

**B22D 11/0401** (2013.01); **B22D 11/11** (2013.01)

Citation (search report)

- [X] US 4930566 A 19900605 - YANAGIMOTO SHIGERU [JP], et al
- [X] FR 2667002 A1 19920327 - NORSK HYDRO AS [NO]
- [X] FR 2422464 A1 19791109 - INST ELEKTROSWARKI PATONA [SU]
- [A] CH 665575 A5 19880531 - LATHION JEAN

Cited by

KR100734793B1; FR2747059A1; FR2787359A1; US6102100A; FR2747063A1; US6109335A; FR2764533A1; CN1086613C; FR2747062A1; US6050324A; EP1120180A1; US2011100582A1; US9561539B2; EP0743114A1; FR2734186A1; US5682942A; FR2766394A1; US6311762B1; FR2765126A1; US6016940A; EP1097762A1; FR2800654A1; FR2747060A1; US6318449B1; US6354363B1; WO2013021221A2; WO9737794A1; WO9737792A1; WO9737793A1; WO9856521A1; WO9904918A1; WO0037197A1; WO9737795A1; US6419004B1; US6260605B1; KR100449675B1

Designated contracting state (EPC)

AT BE CH DE DK ES FR GB IT LI LU NL SE

DOCDB simple family (publication)

**EP 0620062 A1 19941019**; **EP 0620062 B1 19980603**; AT E166812 T1 19980615; DE 69410688 D1 19980709; DE 69410688 T2 19990225; DK 0620062 T3 19990322; ES 2117238 T3 19980801; FR 2703609 A3 19941014; FR 2703609 B3 19950210

DOCDB simple family (application)

**EP 94470007 A 19940328**; AT 94470007 T 19940328; DE 69410688 T 19940328; DK 94470007 T 19940328; ES 94470007 T 19940328; FR 9303871 A 19930330