

Title (en)

GAS BUBBLING DEVICE

Publication

**EP 0364723 B1 19930210 (DE)**

Application

**EP 89116617 A 19890908**

Priority

DE 3833504 A 19881001

Abstract (en)

[origin: EP0364723A1] In a gas bubbling device on a vessel for a metallurgical melt, a gas bubble brick (3) is inserted into a perforated brick (2) of the vessel. On the outside of the vessel, a fixing device (13) is arranged, to which a holding device (7) for the gas bubble brick (3) can be clamped. The installation and removal of the gas bubble brick (3) is to be simplified. For this purpose, the gas bubble brick (3) is held on the holding device (7). The holding device (7) can be released from the fixing device (13) by retracting means, taking along the gas bubble brick (3) from the operating position in the perforated brick (2) into a maintenance position outside the perforated brick (2). <IMAGE>

IPC 1-7

**C21C 5/48; C21C 7/072; C22B 9/05**

IPC 8 full level

**B22D 41/58** (2006.01); **B22D 1/00** (2006.01); **B22D 41/42** (2006.01); **C21C 5/48** (2006.01); **C21C 7/072** (2006.01); **C22B 9/05** (2006.01);  
**F27D 1/16** (2006.01); **F27D 3/16** (2006.01)

CPC (source: EP KR US)

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Citation (examination)

TECHNISCHE MITTEILUNGEN 69 Jahrgang, Heft 12, Dezember 1976, Seiten 620-628, DE; M. OBERBACH u.a.: "Feuerfeste Werkstoffe für den Einsatz von Spül- und Trägergasen in der Metallurgie"

Cited by

AU643544B2; TR26624A; EP1078702A1; DE19941639A1; DE19941639C2; WO9204998A1; WO9200392A1; EP2343386A1; DE102010004958A1

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ES 89116617 T 19890908; JP 24826789 A 19890926; KR 890013645 A 19890922; US 41367389 A 19890928; US 57305790 A 19900823;  
ZA 896853 A 19890907