

Title (en)  
NOZZLE FOR COOLING VACUUM FURNACE

Title (de)  
DÜSE ZUM KÜHLEN EINES VAKUUMOFENS

Title (fr)  
BUSE POUR REFROIDIR UN FOUR À VIDE

Publication  
**EP 3034200 A4 20170412 (EN)**

Application  
**EP 15836621 A 20150507**

Priority  
• CN 201410437613 A 20140829  
• CN 2015078486 W 20150507

Abstract (en)  
[origin: EP3034200A1] A nozzle for cooling a vacuum furnace, comprising: a vacuum heating furnace, nozzles, extended nozzles, thermocouples and a deep cavity die casting mold; the vacuum heating furnace is provided with a plurality of rows of nozzles therein, each row of nozzles are equally distributed in the vacuum heating furnace, which is characterized in that the nozzle is installed with the extended nozzle thereon, a length of the extended nozzle is set as 50-250mm in accordance with a depth of the shape of the deep cavity die casting mold so that a distance between an end surface of the extended nozzle and a cavity surface of the mold is 450-600mm; the vacuum heating furnace is provided with a tray therein, the deep cavity die casting mold is placed on the tray and located at a central position of the vacuum heating furnace, a plurality of thermocouples are placed on the surface of the deep cavity die casting mold. The advantage of the present invention is to obviously improve the cooling speed of the deep cavity die casting mold, of which the surface cooling speed is accelerated, so that the problem of cooling speed of the deep cavity die casting mold recess is solved, which improves the heat processing performance and solves the problem of uneven cooling speed of the deep cavity die casting mold surface.

IPC 8 full level  
**B22D 17/22** (2006.01); **C21D 1/773** (2006.01); **F27D 9/00** (2006.01)

CPC (source: EP US)  
**B22D 17/22** (2013.01 - EP US); **C21D 1/773** (2013.01 - EP US); **C21D 9/0062** (2013.01 - EP US); **C21D 9/0068** (2013.01 - EP US); **F27D 9/00** (2013.01 - EP US)

Citation (search report)  
• [X] JP 2586480 B2 19970226  
• [X] EP 1167550 A2 20020102 - IPSEN INTERNATIONAL INC [US]  
• [X] US 2004007565 A1 20040115 - MOLLER CRAIG A [US]  
• [X] EP 2418447 A1 20120215 - IHI CORP [JP]  
• [A] DE 202012010241 U1 20121205 - SCHMETZ GMBH [DE]  
• See references of WO 2016029713A1

Cited by  
KR102314086B1

Designated contracting state (EPC)  
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)  
BA ME

DOCDB simple family (publication)  
**EP 3034200 A1 20160622; EP 3034200 A4 20170412**; CN 105364045 A 20160302; US 2016201156 A1 20160714;  
WO 2016029713 A1 20160303

DOCDB simple family (application)  
**EP 15836621 A 20150507**; CN 201410437613 A 20140829; CN 2015078486 W 20150507; US 201615073437 A 20160317