Title (en)
UPPER NOZZLE-INTEGRATED PLATE AND METHOD OF SEPARATING THEM

Title (de)
OBERE DÜSENINTEGRIERTE PLATTE UND TRENNVERFAHREN DAFÜR

Title (fr)
PLAQUE INTEGRE DANS UNE BUSE SUPERIEURE ET LEUR PROCEDE DE SEPARATION

Publication
EP 2022581 A1 20090211 (EN)

Application
EP 07743806 A 20070521

Priority
- JP 2007060372 W 20070521
- JP 2006140310 A 20060519

Abstract (en)
Disclosed is an upper nozzle/plate integral unit comprising an upper nozzle and an upper plate integrated together, which is capable of being easily split into the upper nozzle and the upper plate after use, while adequately maintaining a thickness of a joint between the upper nozzle and the upper plate during use. A metal casing 4 is bent inwardly along an outer peripheral surface of a lower end portion of an alumina carbon-based refractory body of the upper nozzle 1 to form a metal member. The metal member formed by bending the metal casing 4 inwardly has a length of 15 mm. A gap between the metal casing and the refractory body is filled with mortar having a thickness of about 0.5 mm. A recess 11 of the lower end portion of the upper nozzle 1 is fitted onto a raised portion 21 of the upper plate 2 through mortar, and the metal casing 4 of the upper nozzle 1 is in contact with a metal casing of the upper plate 2. A peripheral edge of the metal casing of the upper plate 2 is fixedly joined to the metal casing 4 of the upper nozzle 1 through a plurality of welded portions 6.

IPC 8 full level
B22D 11/10 (2006.01); **B22D 41/34** (2006.01)

CPC (source: EP US)
B22D 41/28 (2013.01 - EP US); **B22D 41/34** (2013.01 - EP US)

Cited by
CN109570935A

Designated contracting state (EPC)
ES FR GB NL

Designated extension state (EPC)
AL BA HR MK RS

DOCDB simple family (publication)
EP 2022581 A1 20090211; **EP 2022581 A4 20100127**; **EP 2022581 B1 20141008**; AU 2007252534 A1 20071129; AU 2007252534 B2 20110421; BR PI0712712 A2 20120529; BR PI0712712 B1 20160712; CN 101448590 A 20090603; ES 2522292 T3 20141114; JP 5129745 B2 20130130; JP WO2007136034 A1 20091001; US 2010019420 A1 20100128; WO 2007136034 A1 20071129

DOCDB simple family (application)
EP 07743806 A 20070521; AU 2007252534 A 20070521; BR PI0712712 A 20070521; CN 200780018319 A 20070521; ES 07743806 T 20070521; JP 2007060372 W 20070521; JP 2008516683 A 20070521; US 29942007 A 20070521