

Title (en)

TUNDISH NOZZLE STRUCTURE AND CONTINUOUS CASTING METHOD

Title (de)

VERTEILERDÜSENSTRUKTUR UND STRANGGUSSVERFAHREN

Title (fr)

STRUCTURE DE BUSE DE PANIER DE COULÉE ET PROCÉDÉ DE COULÉE EN CONTINU

Publication

**EP 4035795 A1 20220803 (EN)**

Application

**EP 20868567 A 20200917**

Priority

- JP 2019175256 A 20190926
- JP 2020035165 W 20200917

Abstract (en)

Provided are a tundish upper nozzle structure and a continuous casting method which make it possible to cause inclusions to float within a tundish. In the present invention, a flange-shaped member 12 having an outside dimension greater than that of an upper end of a tundish upper nozzle 11 is provided along a part or the entirety of the circumference of the upper end of the tundish upper nozzle, and one or more gas discharge holes 13a are provided in one or more surfaces selected from the group consisting of a lower surface, an outer peripheral surface and a top surface of the flange-shaped member 12, and a region of an outer peripheral surface of the tundish upper nozzle 11 below the flange-shaped member 12. A length L in the tundish upper nozzle structure is adjusted to cause the almost the entirety of gas to float upwardly, or to adjust the flow rate of gas flowing downwardly toward the inner bore of the tundish upper nozzle, and the flow rate of gas floating upwardly.

IPC 8 full level

**B22D 1/00** (2006.01); **B22D 11/10** (2006.01); **B22D 11/11** (2006.01); **B22D 41/16** (2006.01); **B22D 41/58** (2006.01)

CPC (source: CN EP US)

**B22D 1/00** (2013.01 - EP US); **B22D 11/10** (2013.01 - EP); **B22D 11/11** (2013.01 - CN EP US); **B22D 41/16** (2013.01 - CN US);  
**B22D 41/50** (2013.01 - EP); **B22D 41/58** (2013.01 - CN EP US)

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 4035795 A1 20220803; EP 4035795 A4 20230208;** BR 112022001629 A2 20220419; CN 114040823 A 20220211;  
JP 2021049564 A 20210401; TW 202128310 A 20210801; TW I770616 B 20220711; US 2022324017 A1 20221013;  
WO 2021060122 A1 20210401

DOCDB simple family (application)

**EP 20868567 A 20200917;** BR 112022001629 A 20200917; CN 202080046023 A 20200917; JP 2019175256 A 20190926;  
JP 2020035165 W 20200917; TW 109133031 A 20200924; US 202017639848 A 20200917