

Title (en)

Immersion discharge nozzle with bottom orifices for the introduction of molten metal in a mould for continuous casting of metallic products

Title (de)

Tauchausguss mit Bodenöffnungen zum Einbringen von Metallschmelze in eine Kokille für das Stranggiessen metallischer Produkte

Title (fr)

Busette pour l'introduction d'un métal liquide dans une lingotière de coulée continue de produits métalliques, dont le fond comporte des orifices

Publication

**EP 0771600 B1 19990915 (FR)**

Application

**EP 96402025 A 19960925**

Priority

FR 9512764 A 19951030

Abstract (en)

[origin: EP0771600A1] The nozzle (15) for the introduction of liquid metal (5) into a continuous casting mould for flat metal products comprises two larger sides (2, 2') and two smaller sides (3, 3'), of the type that incorporates at its lower end two holes (10, 10') cut in its lateral wall opposite each other and designed to feed the liquid metal (5) each in the direction of a smaller side (3, 3') of the mould and at least two orifices (16, 16') cut in the bottom of this lower end. A first group (16) of these orifices is arranged at one side of a plane of longitudinal symmetry of the nozzle including the axes of the holes (10, 10') and a second group (16') of these orifices is arranged on the other side of this plane of longitudinal symmetry. The configuration of the nozzle and its various outlets provokes a number of currents of circulation (12, 14, 15, 16, etc.) for the liquid metal in the casting space of the mould. The lower end of the nozzle may consist of a hollow element in the form of an inverted "T" and may incorporate a number of obstacles in its interior placed in the course of the flow of liquid metal.

IPC 1-7

**B22D 41/50**

IPC 8 full level

**B22D 11/103** (2006.01); **B22D 11/06** (2006.01); **B22D 11/10** (2006.01); **B22D 41/50** (2006.01)

CPC (source: EP US)

**B22D 11/0642** (2013.01 - EP US); **B22D 41/50** (2013.01 - EP US)

Cited by

FR2763524A1; FR2818567A1; EP0911096A1; FR2769862A1; EP2100676A1; EP0950451A1; FR2777485A1; US6092700A; CN1103255C; WO20251569A1

Designated contracting state (EPC)

AT BE CH DE DK ES FI FR GB GR IE IT LI LU NL PT SE

DOCDB simple family (publication)

**EP 0771600 A1 19970507; EP 0771600 B1 19990915;** AT E184526 T1 19991015; AU 6800396 A 19970508; AU 711242 B2 19991007; BR 9605365 A 19980728; CA 2188741 A1 19970501; CN 1068807 C 20010725; CN 1157197 A 19970820; CZ 286296 B6 20000315; CZ 312096 A3 19970514; DE 69604260 D1 19991021; DE 69604260 T2 20030213; DK 0771600 T3 20000403; ES 2137642 T3 19991216; FR 2740367 A1 19970430; FR 2740367 B1 19971128; GR 3032049 T3 20000331; JP H09122856 A 19970513; MX 9605211 A 19970628; PL 181293 B1 20010731; PL 316718 A1 19970512; RO 117158 B1 20011130; RU 2165825 C2 20010427; SK 138696 A3 19980204; SK 282201 B6 20011203; TR 199600839 A2 19980521; TW 316861 B 19971001; UA 41991 C2 20011015; US 5840206 A 19981124; ZA 969070 B 19970529

DOCDB simple family (application)

**EP 96402025 A 19960925;** AT 96402025 T 19960925; AU 6800396 A 19961007; BR 9605365 A 19961030; CA 2188741 A 19961024; CN 96122692 A 19961029; CZ 312096 A 19961024; DE 69604260 T 19960925; DK 96402025 T 19960925; ES 96402025 T 19960925; FR 9512764 A 19951030; GR 990403138 T 19991207; JP 30388196 A 19961030; MX 9605211 A 19961029; PL 31671896 A 19961028; RO 9602063 A 19961029; RU 96121470 A 19961029; SK 138696 A 19961025; TR 9600839 A 19961023; TW 85112690 A 19961017; UA 96104069 A 19961028; US 72590296 A 19961004; ZA 969070 A 19961029