

Title (en)
Refractory nozzle

Title (de)
Feuerfester Ausguss

Title (fr)
Buse réfractaire

Publication
EP 1275452 A3 20031210 (DE)

Application
EP 02007617 A 20020404

Priority
• DE 10133557 A 20010713
• DE 10150032 A 20011011

Abstract (en)
[origin: EP1275452A2] The fireproof nozzle for a crucible, especially for molten steel, has a flow tube with an upper (10) and a lower (6) section. The surface of the upper section which limits the outflow opening (2) is of a different material from that which defines the outflow opening at the lower section. The lower section is fixed in or at the upper section. The upper section has a material and a structure which gives a high thermal insulation at temperatures of 1,400-1,650 degrees C, it has a high purity, is chemically inert against steel and withstands high temperatures. The upper section uses aluminum oxide balls, hollow balls of fireproof oxides or a fiber material and the like. The lower section is of a fireproof ceramic material, aluminum oxide or zirconium oxide. The housing (4) is of a steel or ceramic material.

IPC 1-7
B22D 41/50

IPC 8 full level
B22D 41/50 (2006.01); **B22D 41/54** (2006.01); **B22D 41/60** (2006.01); **F27D 3/14** (2006.01)

CPC (source: EP KR US)
B22D 41/50 (2013.01 - EP KR US)

Citation (search report)
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• [X] US 4776502 A 19881011 - HAGENBURGER KLAUS [DE], et al
• [X] GB 1144725 A 19690305 - STEULER INDUSTRIEWERKE GMBH
• [X] DE 29603426 U1 19960502 - DIDIER WERKE AG [DE]
• [X] FR 1493389 A 19670825 - UNITED STATES STEEL CORP
• [X] US 4568007 A 19860204 - FISHLER MARK K [US]
• [X] GB 1083262 A 19670913 - UNITED STEEL COMPANIES LTD
• [A] EP 0379647 A2 19900801 - DIDIER WERKE AG [DE]
• [X] PATENT ABSTRACTS OF JAPAN vol. 1999, no. 11 30 September 1999 (1999-09-30)
• [X] PATENT ABSTRACTS OF JAPAN vol. 1998, no. 10 31 August 1998 (1998-08-31)
• [X] PATENT ABSTRACTS OF JAPAN vol. 1998, no. 04 31 March 1998 (1998-03-31)

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EP1820586A1

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EP 1275452 A2 20030115; EP 1275452 A3 20031210; BR 0202673 A 20030506; CA 2387375 A1 20030113; CA 2387375 C 20090721; CN 1262407 C 20060705; CN 1411934 A 20030423; JP 2003112257 A 20030415; KR 100599638 B1 20060712; KR 20030007126 A 20030123; US 2003011113 A1 20030116; US 2006076720 A1 20060413; US 7028868 B2 20060418

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