

Title (en)

Nozzle for a fluid-cooled plasma torch, nozzle cap for same and plasma torch head with same

Title (de)

Düse und Düsenkappe für einen flüssigkeitsgekühlten Plasmabrenner sowie Plasmabrennerkopf mit derselben/denselben

Title (fr)

Buse pour une torche à plasma refroidie par liquide, coiffe de tuyère pour une torche à plasma et tête de torche à plasma dotée de celle-ci

Publication

EP 2175702 B2 20170104 (DE)

Application

EP 09011322 A 20090903

Priority

- DE 102008050770 A 20081009
- DE 102009006132 A 20090126

Abstract (en)

[origin: EP2175702A1] The nozzle (4) has a nozzle bore (4.10) for exit of a plasma gas jet at a nozzle tip (4.11). A section includes a cylindrical outer surface, and another section includes an outer surface that conically tapers towards the nozzle tip. A liquid supply groove extends over a part of the former section and over the latter section in the outer surface of the latter section towards the nozzle tip. A liquid recirculation groove is separated from the liquid supply groove and extends over the latter section. A nozzle holder (5) is provided for holding the nozzle. An independent claim is also included for a plasma torch head comprising a nozzle cap.

IPC 8 full level

H05H 1/28 (2006.01); **H05H 1/34** (2006.01)

CPC (source: EP KR US)

H05H 1/28 (2013.01 - EP KR US); **H05H 1/34** (2013.01 - EP US); **H05H 1/3457** (2021.05 - EP KR); **H05H 1/3478** (2021.05 - EP KR); **H05H 1/3457** (2021.05 - US); **H05H 1/3478** (2021.05 - US)

Citation (opposition)

Opponent :

- DE 2651185 A1 19780511 - NUC WELD GMBH
- EP 0585977 A1 19940309 - HYPERTHERM INC [US]
- GB 1416783 A 19751210 - VYSOKA SKOLA BANSKA OSTRAVA

Cited by

JP2015167133A; CN112911779A; EP3054749A1; RU2707499C2; US9981335B2; US10456855B2; WO2016124463A1; US10321551B2; US10462891B2; US10582605B2; EP2449862A1

Designated contracting state (EPC)

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DOCDB simple family (publication)

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DOCDB simple family (application)

EP 09011322 A 20090903; BR PI0920511 A 20090814; CA 2734986 A 20090814; CN 200980100778 A 20090814; DE 102009006132 A 20090126; DE 2009001169 W 20090814; DK 09011322 T 20090903; EP 12006772 A 20090903; ES 09011322 T 20090903; HR P20130559 T 20130618; KR 20117007954 A 20090814; KR 20127025842 A 20090814; MX 2011002912 A 20090814; PL 09011322 T 20090903; PT 09011322 T 20090903; RU 2011117304 A 20090814; SI 200930633 A 20090903; SI 200930633 T 20090903; US 200913123592 A 20090814; ZA 201102989 A 20110420