

Title (en)
Direct current plasma torch.

Title (de)
Gleichstrom-Plasmabrenner.

Title (fr)
Chalumeau à plasma à courant continu.

Publication
EP 0017201 A1 19801015 (DE)

Application
EP 80101692 A 19800329

Priority
DE 2913464 A 19790404

Abstract (en)
1. Direct current plasma torch comprising a bar-shaped cathode and an anode symmetrical with respect to rotation and disposed concentrically to said cathode and an annular clearance between cathode and anode for introducing the gas to be heated, the cathode having at its free end an annular edge and the free end of the cathode being located in an axially parallel magnetic field constant in time, while a magnetic field constant in time but diverging in the direction of flow exists in the area located downstream of the free end of the cathode such that the plasma arc forming between cathode and anode is caused to rotate, characterized in that the cathode (5) has a continuous inner bore (6), through which part of the gas to be heated is introduced into the plasma torch at such a velocity of flow that the point at which the plasma arc connects to the cathode is localized at the annular edge (7) of the cathode (5).

Abstract (de)
Ein Gleichstrom-Plasmabrenner wird zur Erhöhung der Gleichmässigkeit des Plasmabogens und zur Erhöhung seiner Standfestigkeit mit einer rohrförmigen Kathode (5), die an ihrem freien Ende eine ringförmige Kante (7) aufweist, und einer konzentrisch dazu angeordneten, rotationssymmetrischen Anode (4) ausgestattet. Das zu erwärmende Gas wird sowohl durch den Ringspalt (8) zwischen Kathode und Anode (4) als auch durch die Innenbohrung (6) der Kathode eingeführt. Im Bereich des Plasmabogens herrscht ein zeitlich konstantes Magnetfeld, das im Bereich des freien Endes der Kathode achsparallel ist und stromabwärts divergiert.

IPC 1-7
H05H 1/34; **H05H 1/40**

IPC 8 full level
H05H 1/34 (2006.01); **H05H 1/40** (2006.01)

CPC (source: EP US)
H05H 1/34 (2013.01 - EP US); **H05H 1/3436** (2021.05 - EP); **H05H 1/40** (2013.01 - EP)

Citation (search report)
• GB 1112935 A 19680508 - NAT RES DEV
• DE 2236487 A1 19730215 - TECHNOLOGY APPLIC SERVICES COR
• DE 2609178 A1 19760916 - NAT RES DEV
• DE 1564333 B2 19720615
• DE 1933306 A1 19710204 - SIEMENS AG

Cited by
FR2514223A1; CN110519903A; WO2014040152A1; US9532440B2

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EP 0017201 A1 19801015; **EP 0017201 B1 19821027**; DE 2913464 A1 19801016; DE 2913464 B2 19810402; DE 2913464 C3 19831110; DE 3060990 D1 19821202

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