

Title (en)

Ion thruster with a DEVICE FOR CONCENTRATING ION BEAMS

Title (de)

PLASMATRIEBWERK mit einer IONENSTRAHLFOKUSIERUNGSVORRICHTUNG

Title (fr)

PROPULSEUR A PLASMA avec DISPOSITIF DE CONCENTRATION DE FAISCEAU D'IONS

Publication

EP 0914560 B1 20050824 (FR)

Application

EP 97925125 A 19970523

Priority

FR 9700906 W 19970523

Abstract (en)

[origin: WO9853201A1] The invention concerns a device for concentrating ion beams for a hydromagnetic propulsion means with closed electron drift comprising: a) a flared magnetic polar part (63) substantially truncated, open at its two ends and designed to be located downstream of the hydromagnetic propulsion means output plane, comprising a ring-shaped ionisation and acceleration channel (1) and peripheral (3) and central (4) polar parts arranged on either side of the ring-shaped channel (1) to generate a substantially radial magnetic field in an output plane perpendicular to the ring-shaped channel (1) axis; and b) a supplementary peripheral magnetic circuit (60) connecting the flared magnetic polar part (63) downstream end with the peripheral polar part (3), the flared magnetic polar part (63) co-operating with the supplementary peripheral magnetic circuit (60) and the peripheral (3) and central (4) polar parts to define the shape of the magnetic field downstream of the ring-shaped channel (1) so as to force the ion beams emitted by the ring-shaped channel (1) to remain inside a substantially conical zone whereof the predetermined top angle is defined by the flared magnetic polar part (63) top angle.

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IPC 8 full level

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CPC (source: EP US)

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Citation (examination)

Artsimovich L.A. et al: 'Development of a steady plasma engine (SPE) and its use on a 'Meteor' artificial satellite', Kosmicheske Issledovaniya (USSR), vol. 12(3) May-June 1974, pages 451-468; cité dans la demande

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