

Title (en)  
SPACECRAFT THRUSTER

Title (de)  
ANTRIEBSSYSTEM FÜR RAUMFAHRZEUG

Title (fr)  
PROPULSEUR D'ENGIN SPATIAL

Publication  
**EP 1604111 A4 20060118 (EN)**

Application  
**EP 04809320 A 20040317**

Priority  
• US 2004008054 W 20040317  
• EP 03290712 A 20030320  
• EP 04809320 A 20040317

Abstract (en)  
[origin: EP1460267A1] A thruster has a chamber (6) defined within a tube (2). The tube has a longitudinal axis which defines an axis (4) of thrust; an injector (8) injects ionizable gas within the tube, at one end of the chamber. A magnetic field generator with two coils (12, 14) generates a magnetic field parallel to the axis; the magnetic field has two maxima along the axis (4); an electromagnetic field generator has a first resonant cavity (16) between the two coils generating a microwave ionizing field at the electron cyclotron resonance in the chamber (6), between the two maxima of the magnetic field. The electromagnetic field generator has a second resonant cavity (18) on the other side of the second coil (14). The second resonant cavity (18) generates a ponderomotive accelerating field accelerating the ionized gas. <??>The thruster ionizes the gas by electron cyclotron resonance, and subsequently accelerates both electrons and ions by the magnetized ponderomotive force. <IMAGE>

IPC 1-7  
**F03H 1/00**

IPC 8 full level  
**F03H 1/00** (2006.01)

CPC (source: EP KR)  
**B64G 1/40** (2013.01 - KR); **F03H 1/0081** (2013.01 - EP KR)

Citation (search report)  
• [XA] US 4893470 A 19900116 - CHANG FRANKLIN R [US]  
• [XA] US 6193194 B1 20010227 - MINOVITCH MICHAEL A [US]  
• [A] EP 0359732 A2 19900321 - HARRIS BLAKE CORP [US]  
• [A] US 3279175 A 19661018 - HENDEL HANS W, et al  
• [A] US 6293090 B1 20010925 - OLSON LYNN B [US]  
• [A] US 4663932 A 19870512 - COX JAMES E [US]

Designated contracting state (EPC)  
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DOCDB simple family (publication)  
**EP 1460267 A1 20040922; EP 1460267 B1 20060809**; AT E335928 T1 20060915; AU 2004274389 A1 20050331; AU 2004274389 B2 20110317; BR PI0409043 A 20060328; CA 2519701 A1 20050331; CA 2519701 C 20081230; CN 1761816 A 20060419; CN 1761816 B 20100623; DE 60307418 D1 20060921; DE 60307418 T2 20070329; EP 1604111 A2 20051214; EP 1604111 A4 20060118; ES 2272909 T3 20070501; IL 170820 A 20100429; JP 2007524784 A 20070830; JP 4977459 B2 20120718; KR 101075218 B1 20111019; KR 20050120762 A 20051223; MX PA05009982 A 20060309; RU 2005132306 A 20060210; RU 2330181 C2 20080727; WO 2005028310 A2 20050331; WO 2005028310 A3 20050811

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