

Title (en)  
Spark plug with radial spark gap

Title (de)  
Zündkerze mit radialer Entladeweite

Title (fr)  
Bougie d'allumage à interval d'éclatement radial

Publication  
**EP 0701311 A1 19960313 (EN)**

Application  
**EP 95202208 A 19950814**

Priority  
US 30109594 A 19940906

Abstract (en)  
A spark plug is provided which is suitable for use in an internal combustion engine. The spark plug is configured to have a radial spark gap to promote flame propagation within the combustion chamber, and is also equipped with a ground electrode which is specially configured to enhance the performance and service life of the spark plug, and to enable the radial spark gap to be readily and accurately set in mass production. In particular, the ground electrode is radially spaced apart from the longitudinal axis of the center electrode, and is equipped with a firing tip attached to a radial surface of the ground electrode adjacent the distal end of the ground electrode. The ground electrode firing tip projects approximately radially from the ground electrode toward the firing tip of the center electrode, and is axially spaced from the insulator approximately the same distance as the firing tip of the center electrode, such that the firing tips are disposed proximate each other and define the radial spark gap of the spark plug. As a result, the length of the ground electrode is equal to or only slightly greater than the electrode projection of the spark plug. The benefits of the ground electrode configuration include a lower operating temperature which results in a longer service life for the ground electrode firing tip, a reduced tendency for quenching the flame kernel, and a firing location placed a maximum depth in the combustion chamber for a given electrode projection so as to improve combustion without promoting pre-ignition.

IPC 1-7  
**H01T 13/39**; **H01T 13/32**

IPC 8 full level  
**H01T 13/32** (2006.01); **H01T 13/39** (2006.01)

CPC (source: EP)  
**H01T 13/32** (2013.01); **H01T 13/39** (2013.01)

Citation (applicant)  
US 4700103 A 19871013 - YAMAGUCHI TAKASHI [JP], et al

Citation (search report)  
• [X] DE 2120250 A1 19721102  
• [A] US 2159791 A 19390523 - FRUTH HAL F  
• [A] US 3710168 A 19730109 - FERNANDEZ J  
• [A] EP 0171994 A1 19860219 - NGK SPARK PLUG CO [JP] & US 4700103 A 19871013 - YAMAGUCHI TAKASHI [JP], et al

Cited by  
FR2820893A1; DE102006000027B4; CN108767839A; WO02065601A1; JP2002008820A

Designated contracting state (EPC)  
DE FR GB

DOCDB simple family (publication)  
**EP 0701311 A1 19960313**

DOCDB simple family (application)  
**EP 95202208 A 19950814**