

Title (en)  
Gas turbine combustion chamber

Title (de)  
Gasturbinenbrennkammer

Title (fr)  
Chambre de combustion de turbine à gaz

Publication  
**EP 2416070 A1 20120208 (DE)**

Application  
**EP 10171601 A 20100802**

Priority  
EP 10171601 A 20100802

Abstract (en)  
The gas turbine combustion chamber comprises a pilot fuel nozzle arranged in a central portion of a cylinder, a cylindrical outer casing that is radially spaced around an outer periphery of the fuel nozzle, where a pilot swirler element is arranged between the fuel nozzle and the outer casing, head burners that are arranged in radial direction to the pilot fuel nozzle, and a pilot cone (4) with inner side (11) and outer side (12). The cylinder opens itself at an end extending towards the combustion chamber. A pilot cone combustion-chamber side is arranged at the pilot fuel nozzle. The gas turbine combustion chamber comprises a pilot fuel nozzle arranged in a central portion of a cylinder, a cylindrical outer casing that is radially spaced around an outer periphery of the fuel nozzle, where a pilot swirler element is arranged between the fuel nozzle and the outer casing, head burners that are arranged in radial direction to the pilot fuel nozzle, and a pilot cone (4) with inner side (11) and outer side (12). The cylinder opens itself at an end extending towards the combustion chamber. A pilot cone combustion-chamber side is arranged at the pilot fuel nozzle and a combustion chamber side opening (6) so that a pilot flame is formed in the pilot cone by mixing of air and pilot fuel to ignite the fuel injected by the head burners. The pilot cone on its inner side and/or outside comprises turbulence generators. The turbulence generators are: arranged in a region of the opening of the pilot cone; distributed over the periphery of the pilot cone; and strips or strip rings that are arranged and spaced apart over the outer periphery of the pilot cone at an angle of 30-60[deg] , and trapezoidal strips that are arranged at the opening of the pilot cone over the entire periphery of the opening at an angle of +/- 30[deg] . The gas turbine combustion chamber has an axial direction, and each head burner has a head nozzle. A gap is formed around the outer periphery of the relevant head nozzle, which is arranged around the outer cylinder. Extension tubes are formed with a combustion-chamber side outlet opening so that the openings of the outer cylinder extend in the axial direction to the opening of the pilot cone. The turbulence generators are arranged on an inner side of the extension tubes in the area of the outlet opening. An independent claim is included for a gas turbine.

Abstract (de)  
Die Erfindung betrifft eine Gasturbinenbrennkammer mit: - einer Pilotbrennstoffdüse, die im mittleren Abschnitt eines Zylinders (2) angeordnet ist, der sich an einem Ende zu einer Brennkammer hin öffnet, wobei die Pilotbrennstoffdüse eine Brennstoffdüse (1) umfasst, sowie um den Außenumfang der Brennstoffdüse (1) radial beabstandet eine zylindrische Außenverkleidung (9), und wobei zwischen Brennstoffdüse (1) und Außenverkleidung (9) ein Pilotverwirbelungselement (5) angeordnet ist, - mehrere Hauptbrenner, die im Bezug auf die Radialrichtung um die Pilotbrennstoffdüse angeordnet sind, - einen Pilotkonus (4) mit Innenseite (11) und Außenseite (12), wobei der Pilotkonus (4) brennkammerseitig an der Pilotbrennstoffdüse angeordnet ist und eine brennkammerseitige Öffnung (6), so dass durch Mischen von Luft und Pilotbrennstoff eine Pilotflamme im Pilotkonus (4) gebildet wird, um einen von den Hauptbrenner eingespritzten Brennstoff zu zünden, wobei der Pilotkonus (4) an seiner Innenseite (11) und/oder Außenseite (12) Turbulenzgeneratoren aufweist.

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**F23R 3/34** (2006.01)

CPC (source: EP US)  
**F23R 3/28** (2013.01 - EP US); **F23R 3/343** (2013.01 - EP US)

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Designated contracting state (EPC)  
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Designated extension state (EPC)  
BA ME RS

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