CPC COOPERATIVE PATENT CLASSIFICATION

F23R GENERATING COMBUSTION PRODUCTS OF HIGH PRESSURE OR HIGH VELOCITY, e.g. GAS-TURBINE COMBUSTION CHAMBERS

(using such products for specific purposes, see the relevant classes for the purposes; chemical aspects of gas production C06D 5/00; gas-turbine plants characterised by the arrangement of the combustion chamber in the plant F02C 3/14; arrangement of afterburners in jet-propulsion plants F02K 3/10; combustion chambers of rocket-engine plants F02K 9/00)

F23R 3/00 Continuous combustion chambers using liquid or gaseous fuel

F23R 3/002 . { Wall structures (F23R 3/02 and F23R 3/007 take precedence)}

F23R 3/005 . { Combined with pressure or heat exchangers }

F23R 3/007 . { constructed mainly of ceramic components }

F23R 3/02 . characterised by the air-flow or gas-flow configuration (reverse- flow combustion chambers F23R 3/54; cyclone or vortex type combustion chambers F23R 3/58)

F23R 3/04 . . Air inlet arrangements

F23R 3/045 . . . { using pipes }

F23R 3/06 . . . Arrangement of apertures along the flame tube

F23R 3/08 . . . . between annular flame tube sections, e.g. flame tubes with telescopic sections

F23R 3/10 . . . for primary air (F23R 3/06, F23R 3/045 take precedence)

F23R 3/12 . . . . inducing a vortex

F23R 3/14 . . . . . by using swirl vanes

F23R 3/16 . . with devices inside the flame tube or the combustion chamber to influence the air or gas flow

F23R 3/18 . . . Flame stabilising means, e.g. flame holders for after-burners of jet-propulsion plants

F23R 3/20 . . . . incorporating fuel injection means

F23R 3/22 . . . . movable, e.g. to an inoperative position; adjustable, e.g. self-adjusting

F23R 3/24 . . . . of the fluid-screen type

F23R 3/26 . . Controlling the air flow

F23R 3/28 . characterised by the fuel supply (burners F23D)

F23R 3/283 . . { Attaching or cooling of fuel injecting means }

F23R 3/286 . . { having fuel-air premixing devices (F23R 3/30 takes precedence)}

F23R 3/30 . . comprising fuel prevapourising devices

F23R 3/32 . . . being tubular

F23R 3/34 . . Feeding into different combustion zones

F23R 3/343 . . . { Pilot flames, i.e. fuel nozzles or injectors using only a very small proportion of the total fuel to insure continuous combustion (ignition in gas-turbine plants F02C 7/264; pilot flame igniters F23Q 9/00)}

F23R 3/346 . . . { for staged combustion }

F23R 3/36 . . Supply of different fuels

F23R 3/38 . . comprising rotary fuel injection means

F23R 3/40 . characterised by the used of catalytic means

F23R 3/42 . characterised by the arrangement or form of the flame tubes or combustion chambers

F23R 3/425 . . { Combustion chambers comprising a tangential or helicoidal arrangement of the flame tubes }

F23R 3/44 . . Combustion chambers comprising a { single } tubular flame tube within a tubular casing (reverse-flow combustion chambers F23R 3/54)

F23R 3/46 . . Combustion chambers comprising an annular arrangement of { several essentially tubular } flame tubes within a common annular casing or within individual casings

F23R 3/48 . . . Flame tube interconnectors, e.g. cross-over tubes

F23R 3/50 . . Combustion chambers comprising an annular flame tube within an annular casing (toroidal combustion chambers F23R 3/52)

F23R 3/52 . . Toroidal combustion chambers

F23R 3/54 . . Reverse-flow combustion chambers

F23R 3/56 . . Combustion chambers having rotary flame tubes

F23R 3/58 . . Cyclone or vortex type combustion chambers

F23R 3/60 . . Support structures; Attaching or mounting means

F23R 5/00 Continuous combustion chambers using solid or pulverulent fuel

F23R 7/00 Intermittent or explosive combustion chambers

F23R 2900/00 Special features of, or arrangements for continuous combustion chambers; Combustion processes therefor

F23R 2900/00001 . Arrangements using bellows, e.g. to adjust volumes or reduce thermal stresses

F23R 2900/00002 . Gas turbine combustors adapted for fuels having low heating value (LHV)

F23R 2900/00004 . Preventing formation of deposits on surfaces of gas turbine components, e.g. coke deposits

F23R 2900/00005 . Preventing fatigue failures or reducing mechanical stress in gas turbine components

F23R 2900/00006 . Using laser for starting or improving the combustion process

F23R 2900/00008 . Combustion techniques using plasma gas (plasma torches F23R 2900/00009)

F23R 2900/00009 . Using plasma torches for igniting, stabilizing, or improving the combustion process

F23R 2900/00012 . Details of sealing devices

F23R 2900/00013 . Reducing thermo-acoustic vibrations by active means

F23R 2900/00014 . Reducing thermo-acoustic vibrations by passive means, e.g. by Helmholtz resonators (silence apparatus using resonance F01N 1/023)

F23R 2900/00015 . Trapped vortex combustion chambers

F23R 2900/00016 . Retrofitting in general, e.g. to respect new regulations on pollution

F23R 2900/00017 . Assembling combustion chamber liners or subparts

F23R 2900/00018 . Manufacturing combustion chamber liners or subparts

F23R 2900/00019 . Repairing or maintaining combustion chamber liners or subparts

F23R 2900/03041 . Effusion cooled combustion chamber walls or domes

F23R 2900/03042 . Film cooled combustion chamber walls or domes

F23R 2900/03043 . Convection cooled combustion chamber walls with means for guiding the cooling air flow (means for creating turbulence F23R 2900/03045)

F23R 2900/03044 . Impingement cooled combustion chamber walls or subassemblies

F23R 2900/03045 . Convection cooled combustion chamber walls provided with turbolators or means for creating turbulences to increase cooling

F23R 2900/03281 . Intermittent fuel injection or supply with plunger pump or other means therefor

F23R 2900/03282 . High speed injection of air and/or fuel inducing internal recirculation

F23R 2900/03341 . Sequential combustion chambers or burners

F23R 2900/03342 . Arrangement of silo-type combustion chambers

F23R 2900/03343 . Pilot burners operating in premixed mode