

**CPC****COOPERATIVE PATENT CLASSIFICATION****F23M**

**CONSTRUCTIONAL DETAILS OF COMBUSTION CHAMBERS, NOT OTHERWISE PROVIDED FOR** (construction or support of tube walls for steam boilers [F22B](#) ; generating combustion products of high pressure or high velocity [F23R](#) )

**Guidance heading:****F23M 3/00**

**Firebridges** (baffles non confining the fire [F23M 9/06](#))

- [F23M 3/02](#) . modified for circulation of fluids, e.g. air, steam, water
- [F23M 3/04](#) . . for delivery of gas, e.g. air, steam
- [F23M 3/06](#) . . . into or towards fire
- [F23M 3/08](#) . . . away from fire, e.g. towards smoke outlet
- [F23M 3/10](#) . . . transversely
- [F23M 3/12](#) . characterised by shape or construction ([F23M 3/02](#) takes precedence)
- [F23M 3/14](#) . . with apertures for passage of combustion products
- [F23M 3/16](#) . . built-up in sections, e.g. using bars or blocks
- [F23M 3/18](#) . . double; multiple
- [F23M 3/20](#) . . comprising loose refractory material, wholly or in part
- [F23M 3/22](#) . movable; adjustable

**F23M 5/00**

**Casings; Linings; Walls** (casings, linings, or walls of heat-treatment chambers of ovens, kilns, or retorts [F27D](#) )

- [F23M 5/02](#) . characterised by the shape of the bricks or blocks used (ceramic materials [C04B 33/00](#), [C04B 35/00](#))
- [F23M 5/025](#) . . {specially adapted for burner openings }
- [F23M 5/04](#) . Supports for linings
- [F23M 5/06](#) . Crowns or roofs for combustion chambers ([F23M 5/02](#), [F23M 5/04](#) take precedence)
- [F23M 5/08](#) . Cooling thereof; Tube walls
- [F23M 5/085](#) . . {using air or other gas as the cooling medium }

**F23M 7/00**

**Doors specially adapted for combustion chambers** (in general [E06B](#) ; for flues or smoke-boxes [F23J 13/08](#))

- [F23M 7/02](#) . Frames therefor
- [F23M 7/04](#) . Cooling doors or door frames

**F23M 9/00**

**Baffles or deflectors for air or combustion products; Flame shields**

- F23M 9/003 . {in flue gas ducts }
- F23M 9/006 . . {Backflow diverters }
- F23M 9/02 . in air inlets
- F23M 9/04 . with air-supply passages in the baffle or shield
- F23M 9/06 . in fire-boxes
- F23M 9/08 . Helical or twisted baffles or deflectors
- F23M 9/10 . Baffles or deflectors formed as tubes, e.g. in water-tube boilers ([interconnection of such tubes in boilers for fluid flow F22](#) )
- F23M 11/00** **Safety arrangements** ([by controlling combustion F23N 5/24](#))
- F23M 11/02 . Preventing emission of flames or hot gases, or admission of air, through working or charging apertures
- F23M 11/04 . Means for supervising combustion, e.g. window ([alarm systems G08B](#) )
- F23M 11/042 . . {Viewing ports of windows }
- F23M 11/045 . . {by observing the flame }
- F23M 11/047 . . {by observing the flue gas ([controlling combustion using gas detectors F23N 5/003](#)) }
- F23M 99/00** **Subject matter not provided for in other groups of this subclass, { e.g. heat storage from flames }**
- F23M 99/005 . { Noise absorbing means }

**Guidance heading:****F23M 2700/00** **Constructional details of combustion chambers**

- F23M 2700/005 . Structures of combustion chambers or smoke ducts
- F23M 2700/0053 . . Bricks for combustion chamber walls
- F23M 2700/0056 . . Bricks for water tube combustion chamber walls
- F23M 2700/007 . Automatic fire extinguishing devices
- F23M 2700/008 . Preventing outwards emission of flames or hot gases

**Guidance heading:****F23M 2900/00** **Special features of, or arrangements for combustion chambers**

- F23M 2900/05001 . Preventing corrosion by using special lining materials or other techniques
- F23M 2900/05002 . Means for accommodate thermal expansion of the wall liner
- F23M 2900/05003 . Details of manufacturing specially adapted for combustion chambers
- F23M 2900/05004 . Special materials for walls or lining
- F23M 2900/05005 . Sealing means between wall tiles or panels
- F23M 2900/05021 . Wall blocks adapted for burner openings
- F23M 2900/09061 . Moving baffles, e.g. rotating baffles, for creating vortices
- F23M 2900/09062 . Tube-shaped baffles confining the flame ([flame tubes forming part of the burner head F23D 2900/11403](#))
- F23M 2900/11021 . Means for avoiding accidental fires in rooms where the combustion device is located
- F23M 2900/11041 . Means for observing or monitoring flames using photoelectric devices, e.g. phototransistors
- F23M 2900/13001 . Energy recovery by fuel cells arranged in the combustion plant
- F23M 2900/13002 . Energy recovery by heat storage elements arranged in the combustion chamber
- F23M 2900/13003 . Energy recovery by thermoelectric elements, e.g. by Peltier/Seebeck effect, arranged in the combustion plant
- F23M 2900/13004 . Energy recovery by thermo-photo-voltaic (TPV) elements arranged in the combustion plant