

# CPC COOPERATIVE PATENT CLASSIFICATION

## F MECHANICAL ENGINEERING; LIGHTING; HEATING; WEAPONS; BLASTING (NOTE omitted)

### LIGHTING; HEATING

## F23 COMBUSTION APPARATUS; COMBUSTION PROCESSES (NOTE omitted)

## F23M CASINGS, LININGS, WALLS OR DOORS SPECIALLY ADAPTED FOR COMBUSTION CHAMBERS, e.g. FIREBRIDGES; DEVICES FOR DEFLECTING AIR, FLAMES OR COMBUSTION PRODUCTS IN COMBUSTION CHAMBERS; SAFETY ARRANGEMENTS SPECIALLY ADAPTED FOR COMBUSTION APPARATUS; DETAILS OF COMBUSTION CHAMBERS, NOT OTHERWISE PROVIDED FOR WARNING

{In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.}

<b>3/00</b>	<b>Firebridges</b>	9/10	• Baffles or deflectors formed as tubes, e.g. in water-tube boilers
3/02	• modified for circulation of fluids, e.g. air, steam, water		
3/04	• . . for delivery of gas, e.g. air, steam	<b>11/00</b>	<b>Safety arrangements</b>
3/06	• . . . into or towards fire	11/02	• Preventing emission of flames or hot gases, or admission of air, through working or charging apertures
3/08	• . . . away from fire, e.g. towards smoke outlet		
3/10	• . . . transversely	11/04	• Means for supervising combustion, e.g. windows
3/12	• characterised by shape or construction	11/042	• . {Viewing ports of windows}
3/14	• . . with apertures for passage of combustion products	11/045	• . {by observing the flame}
3/16	• . . built-up in sections, e.g. using bars or blocks	11/047	• . {by observing the flue gas (controlling combustion using gas detectors F23N 5/003)}
3/18	• . . double; multiple		
3/20	• . . comprising loose refractory material, wholly or in part	<b>20/00</b>	<b>Details of combustion chambers, not otherwise provided for {, e.g. means for storing heat from flames}</b>
3/22	• movable; adjustable	20/005	• {Noise absorbing means}
<b>5/00</b>	<b>Casings; Linings; Walls</b>		
5/02	• characterised by the shape of the bricks or blocks used	<b>2700/00</b>	<b>Constructional details of combustion chambers</b>
5/025	• . . {specially adapted for burner openings}	2700/005	• Structures of combustion chambers or smoke ducts
5/04	• Supports for linings	2700/0053	• . Bricks for combustion chamber walls
5/06	• Crowns or roofs for combustion chambers	2700/0056	• . Bricks for water tube combustion chamber walls
5/08	• Cooling thereof; Tube walls	2700/007	• Automatic fire extinguishing devices
5/085	• . . {using air or other gas as the cooling medium}	2700/008	• Preventing outwards emission of flames or hot gases
<b>7/00</b>	<b>Doors</b>	<b>2900/00</b>	<b>Special features of, or arrangements for combustion chambers</b>
7/02	• Frames therefor	2900/05001	• Preventing corrosion by using special lining materials or other techniques
7/04	• Cooling doors or door frames	2900/05002	• Means for accommodate thermal expansion of the wall liner
<b>9/00</b>	<b>Baffles or deflectors for air or combustion products (baffles or deflectors for air or combustion products structurally associated with burners F23D); Flame shields</b>	2900/05003	• Details of manufacturing specially adapted for combustion chambers
9/003	• {in flue gas ducts}	2900/05004	• Special materials for walls or lining
9/006	• . . {Backflow diverters}	2900/05005	• Sealing means between wall tiles or panels
9/02	• in air inlets	2900/05021	• Wall blocks adapted for burner openings
9/04	• with air supply passages in the baffle or shield	2900/09061	• Moving baffles, e.g. rotating baffles, for creating vortices
9/06	• in fire-boxes		
9/08	• Helical or twisted baffles or deflectors	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
- 2900/11041 . Means for observing or monitoring flames using photoelectric devices, e.g. phototransistors
- 2900/13001 . Energy recovery by fuel cells arranged in the combustion plant
- 2900/13002 . Energy recovery by heat storage elements arranged in the combustion chamber
- 2900/13003 . Energy recovery by thermoelectric elements, e.g. by Peltier/Seebeck effect, arranged in the combustion plant
- 2900/13004 . Energy recovery by thermo-photo-voltaic [TPV] elements arranged in the combustion plant