SECTION F — MECHANICAL ENGINEERING; LIGHTING; HEATING; WEAPONS; BLASTING

F23 COMBUSTION APPARATUS; COMBUSTION PROCESSES

F23C METHODS OR APPARATUS FOR COMBUSTION USING FLUID FUEL OR SOLID FUEL SUSPENDED IN AIR (burners F23D)

Note(s) [2006.01]

In this subclass, methods are classified in the groups that cover the apparatus used.

Subclass index

COMBUSTION APPARATUS SPECIALLY ADAPTED FOR COMBUSTION OF TWO OR MORE TYPES OF FUEL....1/00
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1/00 Combustion apparatus specially adapted for combustion of two or more kinds of fuel simultaneously or alternately, at least one kind of fuel being either a fluid fuel or a solid fuel suspended in air (combustion apparatus characterised by the combination of two or more combustion chambers F23C 6/00; pilot flame igniters F23Q 9/00) **[1, 7, 2006.01]**

1/02 • lump and liquid fuel **[1, 2006.01]**

1/04 • lump and gaseous fuel **[1, 2006.01]**

1/06 • lump and pulverulent fuel **[1, 2006.01]**

1/08 • liquid and gaseous fuel **[1, 2006.01]**

1/10 • liquid and pulverulent fuel **[1, 2006.01]**

1/12 • gaseous and pulverulent fuel **[1, 2006.01]**

3/00 Combustion apparatus characterised by the shape of the combustion chamber (F23C 15/00 takes precedence) **[1, 7, 2006.01]**

5/00 Combustion apparatus characterised by the arrangement or mounting of burners [1, 7, 2006.01]

5/02 • Structural details of mounting **[1, 2006.01]**

5/06 • • Provision for adjustment of burner position during operation **[1, 2006.01]**

5/08 • Disposition of burners **[1, 2006.01]**

5/14 • • to obtain a single flame of concentrated or substantially planar form, e.g. pencil or sheet flame (F23C 5/32 takes precedence) **[1, 3, 2006.01]**

5/24 • • to obtain a loop flame **[1, 2006.01]**

5/28 • • to obtain flames in opposing directions, e.g. impacting flames **[1, 2006.01]**

5/32 • • to obtain rotating flames, i.e. flames moving helically or spirally **[3, 2006.01]**

6/00 Combustion apparatus characterised by the combination of two or more combustion chambers [3, 7, 2006.01]

6/02 • in parallel arrangement **[3, 2006.01]**

6/04 • in series connection **[3, 2006.01]**

7/00 Combustion apparatus characterised by arrangements for air supply (inlets for fluidisation air F23C 10/20; baffles or shields with air supply passages F23M 9/04) **[1, 7, 2006.01]**

7/02 • Disposition of air supply not passing through burner **[1, 2006.01]**

7/04 • • to obtain maximum heat transfer to wall of combustion chamber **[1, 2006.01]**

7/06 • • for heating the incoming air (arrangements of regenerators or recuperators F23L 15/00) **[1, 2006.01]**

7/08 • • • indirectly by a secondary fluid other than the combustion products **[1, 2006.01]**

9/00 **Combustion apparatus characterised by arrangements for returning combustion products or flue gases to the combustion chamber** (fluidised bed combustion apparatus with means for recirculation of particles entrained from the bed F23C 10/02; fluidised bed combustion apparatus with devices for removal and partial reintroduction of material from the bed F23C 10/26) **[1, 7, 2006.01]**

9/06 • for completing combustion **[3, 2006.01]**

9/08 • for reducing temperature in combustion chamber, e.g. for protecting walls of combustion chamber **[3, 2006.01]**

10/00 **Apparatus in which combustion takes place in a fluidised bed of fuel or other particles [7, 2006.01]**

Note(s) [7]

In this group, it is desirable to add the indexing code of group F23C 101/00.

10/01 • in a fluidised bed of catalytic particles **[2006.01]**

10/02 • with means specially adapted for achieving or promoting a circulating movement of particles within the bed or for a recirculation of particles entrained from the bed **[7, 2006.01]**

10/04 • • the particles being circulated to a section, e.g. a heat-exchange section or a return duct, at least partially shielded from the combustion zone, before being reintroduced into the combustion zone **[7, 2006.01]**

10/06 • • • the circulating movement being promoted by inducing differing degrees of fluidisation in different parts of the bed **[7, 2006.01]**

10/08 • • • characterised by the arrangement of separation apparatus, e.g. cyclones, for separating particles from the flue gases **[7, 2006.01]**

10/10 • • • • the separation apparatus being located outside the combustion chamber **[7, 2006.01]**

10/12 • • the particles being circulated exclusively within the combustion zone **[7, 2006.01]**

10/14 • • • the circulating movement being promoted by inducing differing degrees of fluidisation in different parts of the bed **[7, 2006.01]**

10/16 • specially adapted for operation at superatmospheric pressures, e.g. by the arrangement of the combustion chamber and its auxiliary systems inside a pressure vessel **[7, 2006.01]**

10/18 • Details; Accessories **[7, 2006.01]**

10/20 • • Inlets for fluidisation air, e.g. grids; Bottoms **[7, 2006.01]**

10/22 • • Fuel feeders specially adapted for fluidised bed combustion apparatus (F23C 10/26 takes precedence) **[7, 2006.01]**

10/24 • • Devices for removal of material from the bed (devices for controlling the level of the bed or the amount of material in the bed F23C 10/30) **[7, 2006.01]**

10/26 • • • combined with devices for partial reintroduction of material into the bed, e.g. after separation of agglomerated parts **[7, 2006.01]**

10/28 • • Control devices specially adapted for fluidised bed combustion apparatus **[7, 2006.01]**

10/30 • • • for controlling the level of the bed or the amount of material in the bed **[7, 2006.01]**

10/32 • • • • by controlling the rate of recirculation of particles separated from the flue gases **[7, 2006.01]**

13/00 **Apparatus in which combustion takes place in the presence of catalytic material** (in a fluidised bed of catalytic particles F23C 10/01; radiant gas burners using catalysis for flameless combustion F23D 14/18) **[2006.01]**

13/02 • characterised by arrangements for starting the operation, e.g. for heating the catalytic material to operating temperature **[2006.01]**

13/04 • characterised by the arrangement of two or more catalytic elements in series connection **[2006.01]**

13/06 • in which non-catalytic combustion takes place in addition to catalytic combustion, e.g. downstream of a catalytic element **[2006.01]**

13/08 • characterised by the catalytic material **[2006.01]**

15/00 **Apparatus in which combustion takes place in pulses influenced by acoustic resonance in a gas mass [2006.01]**

99/00 **Subject matter not provided for in other groups of this subclass [2006.01]**

Indexing scheme associated with group F23C 10/00, relating to combustion in entrained fluidised beds. [7]

101/00 **Combustion in entrained fluidised beds, i.e. fluidised beds which have no distinct upper surface [7, 2006.01]**