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

F23 COMBUSTION APPARATUS; COMBUSTION PROCESSES

F23B **METHODS OR APPARATUS FOR COMBUSTION USING ONLY SOLID FUEL** (for combustion of fuels that are solid at room temperatures, but burned in melted form, e.g. candle wax, C11C 5/00, F23C, F23D; using solid fuel suspended in air F23C, F23D 1/00; using solid fuel suspended in liquids F23C, F23D 11/00; using solid fuel together with fluid fuel or with solid fuel suspended in air, simultaneously or alternately, F23C, F23D 17/00)

Note(s) [2006.01]

1. This subclass only covers combustion wherein the main body of fuel is either essentially stationary during combustion or mechanically transported, as opposed to pneumatically transported or suspended in air, during combustion.
2. In this subclass, the first place priority rule is applied, i.e. at each hierarchical level, in the absence of an indication to the contrary, classification is made in the first appropriate place.
3. In this subclass, methods are classified in the groups that cover the apparatus used. Methods that are not related to a particular type of apparatus are classified in group F23B 90/00.
4. In this subclass, it is desirable to add the indexing codes of groups F23B 101/00-F23B 103/00.

Subclass index

COMBUSTION APPARATUS
Combinations of two or more combustion chambers.....10/00
Specially adapted for portability or transportability.....20/00
Functional types.....30/00-60/00
Returning solid combustion residues to the combustion chamber.....70/00
Creating a distinct flow path for flue gases or for non-combusted gases given off by the fuel.....80/00
COMBUSTION METHODS NOT RELATED TO A PARTICULAR TYPE OF APPARATUS.....90/00
SUBJECT MATTER NOT PROVIDED FOR IN OTHER GROUPS OF THIS SUBCLASS.....99/00

10/00 **Combustion apparatus characterised by the combination of two or more combustion chambers [2006.01, 2011.01]**

10/02 • including separate secondary combustion chambers **[2011.01]**

20/00 **Combustion apparatus specially adapted for portability or transportability [2006.01]**

30/00 **Combustion apparatus with driven means for agitating the burning fuel; Combustion apparatus with driven means for advancing the burning fuel through the combustion chamber [2006.01]**

30/02 • with movable, e.g. vibratable, fuel-supporting surfaces; with fuel-supporting surfaces that have movable parts **[2006.01]**

30/04 • • with fuel-supporting surfaces that are rotatable around a horizontal or inclined axis and support the fuel on their inside, e.g. cylindrical grates **[2006.01]**

30/06 • • with fuel-supporting surfaces that are specially adapted for advancing the fuel through the combustion zone **[2006.01]**

30/08 • • • with fuel-supporting surfaces that move through the combustion zone, e.g. with chain grates **[2006.01]**

30/10 • • • with fuel-supporting surfaces having fuel advancing elements that are movable, but remain essentially in the same place, e.g. with rollers or reciprocating grate bars **[2006.01]**

40/00 **Combustion apparatus with driven means for feeding fuel into the combustion chamber [2006.01]**

40/02 • the fuel being fed by scattering over the fuel-supporting surface **[2006.01]**

40/04 • the fuel being fed from below through an opening in the fuel-supporting surface **[2006.01]**

40/06 • the fuel being fed along the fuel-supporting surface **[2006.01]**

40/08 • • into pot- or trough-shaped grates **[2006.01]**

50/00 **Combustion apparatus in which the fuel is fed into or through the combustion zone by gravity, e.g. from a fuel storage situated above the combustion zone [2006.01]**

50/02 • the fuel forming a column, stack or thick layer with the combustion zone at its bottom **[2006.01]**

50/04 • • the movement of combustion air and flue gases being substantially transverse to the movement of the fuel **[2006.01]**

50/06 • • the flue gases being removed downwards through one or more openings in the fuel-supporting surface **[2006.01]**

50/08 • • with fuel-deflecting bodies forming free combustion spaces inside the fuel layer **[2006.01]**

50/10 • • with the combustion zone at the bottom of fuel-filled conduits ending at the surface of a fuel bed **[2006.01]**

50/12 • the fuel being fed to the combustion zone by free fall or by sliding along inclined surfaces, e.g. from a conveyor terminating above the fuel bed **[2006.01]**

60/00 Combustion apparatus in which the fuel burns essentially without moving [2006.01]

60/02 • with combustion air supplied through a grate **[2006.01]**

70/00 Combustion apparatus characterised by means for returning solid combustion residues to the combustion chamber [2006.01]

80/00 Combustion apparatus characterised by means creating a distinct flow path for flue gases or for non-combusted gases given off by the fuel [2006.01]

80/02 • by means for returning flue gases to the combustion chamber or to the combustion zone **[2006.01]**

80/04 • by means for guiding the flow of flue gases, e.g. baffles **[2006.01]**

90/00 Combustion methods not related to a particular type of apparatus [2006.01, 2011.01]

90/02 • Start-up techniques **[2011.01]**

90/04 • including secondary combustion (in separate combustion chambers F23B 10/02) **[2011.01]**

90/06 • • the primary combustion being a gasification or pyrolysis in a reductive atmosphere **[2011.01]**

90/08 • • in the presence of catalytic material **[2011.01]**

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

Indexing scheme related to adaptation of combustion apparatus to boilers [2006.01]

101/00 Adaptation of combustion apparatus to boilers in which the combustion chamber is situated inside the boiler vessel, e.g. surrounded by cooled surfaces [2006.01]

103/00 Adaptation of combustion apparatus for placement in or against an opening of a boiler, e.g. for replacing an oil burner [2006.01]

103/02 • for producing an essentially horizontal flame **[2006.01]**