

ECLA**EUROPEAN CLASSIFICATION****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, [C11C5/00](#), F23C, F23D ; using solid fuel suspended in air F23C, F23D 1/00 ; using solid fuel suspended in liquids F23C, [F23D11/00](#); using solid fuel and fluent fuel simultaneously or alternately F23C, F23D 17/00; [N: burning of low grade fuel F23G; grates F23H; feeding solid fuel to combustion apparatus F23K; combustion chambers, not otherwise provided for F23M; domestic apparatus F24; central heating boilers F24D; package boilers F24H)

Note

This subclass is only concerned with the combustion of lump fuel, or of pulverulent or granulated fuel if no use is made of its fluent nature.

Guide heading:**IPC7 groups****F23B1/00**

[N: IPC7] Combustion apparatus using only lump fuel

F23B1/02

- . [N: IPC7] for indirect heating of a medium in a vessel, e.g. for boiling water([steam generationF22](#))

F23B1/04

- . . [N: IPC7] External furnaces, i.e. with furnace in front of the vessel

F23B1/06

- . . . [N: IPC7] for heating water-tube boilers, e.g. Tenbrink flue furnaces

F23B1/08

- . . [N: IPC7] Internal furnaces, i.e. with furnaces inside the vessel

F23B1/10

- . . . [N: IPC7] for heating locomotive boilers

F23B1/12

- . . [N: IPC7] with a plurality of combustion chambers

F23B1/16

- . [N: IPC7] the combustion apparatus being modified according to the form of grate or other fuel support[N: for incinerators[F23G5/00B](#)]

F23B1/16B

- . . [\[N: using roller grate\] \[N0003\]](#)

F23B1/18

- . . [N: IPC7] using inclined grate

F23B1/20

- . . [N: IPC7] using step-type grate

F23B1/22

- . . [N: IPC7] using travelling grate

F23B1/24

- . . [N: IPC7] using rotating grate

F23B1/26

- . . [N: IPC7] using imperforate fuel supports

F23B1/28

- . . [N: IPC7] using ridge-type grate, e.g. for combustion of peat, sawdust, or pulverulent fuel[N: ([combustion of peat, sawdustF23G7/10](#))]

F23B1/30

- . [N: IPC7] characterised by the form of combustion chamber

F23B1/32

- . . [N: IPC7] rotating

F23B1/34

- . . [N: IPC7] annular

F23B1/36

- . . [N: IPC7] shaft-type

F23B1/38

- . . [N: IPC7] for combustion of peat, sawdust, or pulverulent fuel on a grate or other fuel support[N: ([combustion of peat, sawdustF23G7/10](#))]

F23B3/00

[N: IPC7] Combustion apparatus which is portable or removable with respect to the

boiler or other apparatus which is heated

- F23B5/00** [N: IPC7] **Combustion apparatus with arrangements for burning uncombusted material from primary combustion** [N: (combustion apparatus characterised by the combination of two or more combustion chambers [F23C6/00](#); the primary combustion being pulverulent fuel [F23B9/00B](#))]
- F23B5/02 . [N: IPC7] in main combustion chamber
- F23B5/02B . . [N: recirculating uncombusted solids to combustion chamber] [N0003]
- F23B5/04 . [N: IPC7] in separate combustion chamber; on separate grate
- F23B7/00** [N: IPC7] **Combustion techniques; Other solid-fuel combustion apparatus**
- F23B7/00B . [N: characterised by gas flow arrangements] [N0003]
- F23B7/00B1 . . [N: with downdraught through fuel bed and grate] [N0003]
- F23B7/00B3 . . [N: with fluegas recirculation to combustion chamber] [N0003]
- F23B10/00** [N: IPC2012.01] **Combustion apparatus characterised by the combination of two or more combustion chambers** [N1108]
- F23B10/02 . including separate secondary combustion chambers [N1108]
- [N: **WARNING** [N1108]
Group [F23B10/02](#) is not complete pending a reorganisation. See also groups [F23B10/00](#)
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- F23B20/00** **Combustion apparatus specially adapted for portability or transportability** [N0502]
- F23B30/00** **Combustion apparatus with driven means for agitating the burning fuel; Combustion apparatus with driven means for advancing the burning fuel through the combustion chamber** [N0502]
- F23B30/02 . with movable, e.g. vibratable, fuel-supporting surfaces; with fuel-supporting surfaces that have movable parts [N0502]
- F23B30/04 . . with fuel-supporting surfaces that are rotatable around a horizontal or inclined axis and support the fuel on their inside, e.g. cylindrical grates [N0502]
- F23B30/06 . . with fuel supporting surfaces that are specially adapted for advancing fuel through the combustion zone [N0502]
- F23B30/08 . . . with fuel-supporting surfaces that move through the combustion zone, e.g. with chain grates [N0502]
- F23B30/10 . . . 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 [N0502]
- F23B40/00** **Combustion apparatus with driven means for feeding fuel into the combustion chamber** [N0502]

- F23B40/02 . the fuel being fed by scattering over the fuel-supporting surface [N0502]
 - F23B40/04 . the fuel being fed from below through an opening in the fuel-supporting surface [N0502]
 - F23B40/06 . the fuel being fed along the fuel-supporting surface [N0502]
 - F23B40/08 . . into pot- or through-shaped grates [N0502]

 - F23B50/00** **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 [N0502]**
 - F23B50/02 . the fuel forming a column, stack or thick layer with the combustion zone at its bottom [N0502]
 - F23B50/04 . . the movement of combustion air and flue gases being substantially transverse to the movement of the fuel [N0502]
 - F23B50/06 . . the fuel gases being removed downwards through one or more openings in the fuel-supporting surface [N0502]
 - F23B50/08 . . with fuel-deflecting bodies forming free combustion spaces inside the fuel layer [N0502]
 - F23B50/10 . . with the combustion zone at the bottom of fuel-filled conduits ending at the surface of a fuel bed [N0502]
 - F23B50/12 . the fuel being fed to the combustion zone by free fall or by sliding along inclined surfaces, e.g. from a conveyer terminating above the fuel bed [N0502]

 - F23B60/00** **Combustion apparatus in which the fuel burns essentially without moving [N0502]**
 - F23B60/02 . with combustion air supplied through a grate [N0502]

 - F23B70/00** **Combustion apparatus characterised by means returning solid combustion residues to the combustion chamber [N0502]**

 - F23B80/00** **Combustion apparatus characterised by means creating a distinct flow path for flue gases or for non-combusted gases given off by the fuel [N0502]**
 - F23B80/02 . by means for returning flue gases to the combustion chamber or to the combustion zone [N0502]
 - F23B80/04 . by means for guiding the flow of flue gases, e.g. baffles [N0502]

 - F23B90/00** **Combustion methods not related to a particular type of apparatus [N1108]**
- [N: **Note** [N1108]
Groups [F23B90/00](#) - [F23B90/08](#) correspond to IPC2012.01
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- [N: **WARNING** [N1108]
Groups [F23B90/00](#) to [F23B90/08](#) are not complete pending a reorganisation. See also

groups [F23B1/00](#) to [F23B7/00B3](#)
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- [F23B90/02](#) . Start-up techniques [\[N1108\]](#)
- [F23B90/04](#) . including secondary combustion (in separate combustion chambers [F23B10/02](#))
[\[N1108\]](#)
- [F23B90/06](#) . . the primary combustion being a gasification or pyrolysis in a reductive atmosphere
[\[N1108\]](#)
- [F23B90/08](#) . . in the presence of catalytic material [\[N1108\]](#)
- [F23B99/00](#) **Subject matter not provided for in other groups of this subclass** [\[N0502\]](#)