

## F23L

**SUPPLYING AIR OR NON-COMBUSTIBLE LIQUIDS OR GASES TO COMBUSTION APPARATUS IN GENERAL** ({air-supply arrangements for fluent fuels [F23C](#);} firebridges with means for feeding air or steam [F23M 3/04](#); baffles or shields with air supply passages [F23M 9/04](#)); **VALVES OR DAMPERS SPECIALLY ADAPTED FOR CONTROLLING AIR SUPPLY OR DRAUGHT IN COMBUSTION APPARATUS** {(dampers and throat restrictors for open fire-places [F24](#); air inlet valves for open fire fronts [F24](#)); **INDUCING DRAUGHT IN COMBUSTION APPARATUS; TOPS FOR CHIMNEYS OR VENTILATING SHAFTS; TERMINALS FOR FLUES**

### Definition statement

*This place covers:*

Supply of air or non-combustible gases or liquids to combustion apparatus in general, for example:

- Blast-producing apparatus before the fire, for example fans or induction apparatus;
- Passages or nozzles for delivering air to combustion chambers;
- Methods or devices for supplying steam or oxygen to the fire;
- Methods or devices for heating of combustion air before supply to the combustion chamber, for example by heat exchange with flue gases;
- Special adaptations of valves or dampers for controlling combustion air supply or flue gas draught in combustion apparatus in general;
- Methods or devices for inducing draught in combustion apparatus, for example exhaust fans or exhaust induction apparatus;
- Tops for chimneys or ventilation shafts;
- Terminals for flues.

### Relationships with other classification places

Combustion apparatus

This subclass is the general place for methods and apparatus for supply of air to combustion apparatus.

The incorporation of air supply means as an integrated part of an entire combustion apparatus, for example the disposition of primary and secondary air ports in relation to other components, is classified in the place for the combustion apparatus as a whole, in [F23B](#), [F23C](#) or [F23G](#).

Air supply means that are arranged in immediate connection with the fuel-feeding conduit of a burner (for example concentric with it) are considered to be part of the burner, and are thus classified in [F23D](#). Other means for feeding air that are specially adapted for combustion of liquid fuel, gaseous fuel or pulverised fuel suspended in air are classified in [F23C 7/00](#) or [F23C 10/20](#).

Blast-producing, draught-inducing

This subclass is an application-oriented place for the arrangement of fans, inductors or other pumps in combustion apparatus for the purpose of inducing blast or draught. The integration of such devices in systems for control of combustion, for example together with sensors and actuators, is covered by [F23N](#).

Fans and other pumps per se are classified in class [F04](#), for examples see the section "Informative references" below.

Valves and dampers

This subclass is an application-oriented place for valves and dampers that are specially adapted for controlling air supply or draught of combustion apparatus. The integration of such devices in systems for control of combustion, for example together with sensors and actuators, is covered by [F23N](#).

Valves or dampers that are specially adapted for controlling air supply or draught of domestic stoves are classified in [F24B](#) or [F24C](#), for examples see the section "References relevant to classification in this subclass" below.

Valves and dampers in general are classified in [F16K](#).

Heating of combustion air

This subclass is an application-oriented place for the heat exchange apparatus that is specially adapted for use in combustion apparatus for the purpose of heating combustion air. Heat exchangers in general are classified in class [F28](#), for examples see the section "Informative references" below.

## References

### Limiting references

*This place does not cover:*

Air-supply arrangements for fluent fuels	<a href="#">F23C</a>
Firebridges for delivery of air or steam to combustion apparatus	<a href="#">F23M 3/04</a>
Baffles or deflectors for air or combustion products with air-supply passages	<a href="#">F23M 9/04</a>
Dampers and throat restrictors for open fire-places	<a href="#">F24</a>
Air inlet valves for open fire fronts	<a href="#">F24</a>

### Application-oriented references

*Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:*

Steam generators	<a href="#">F22B</a>
Air supply specially adapted for combustion apparatus for liquid, gaseous or pulverised fuel	<a href="#">F23C 7/00</a>
Supply of fluidisation air for fluidised bed combustion apparatus	<a href="#">F23C 10/20</a>
Burners	<a href="#">F23D</a>
Burners where spraying of liquid fuel is induced by a gaseous medium	<a href="#">F23D 11/10</a>
Gas burners specially adapted for use with means for pressurising the combustion air	<a href="#">F23D 14/34</a>
Systems for regulating or controlling combustion	<a href="#">F23N</a>
Regulating or controlling air supply or draft	<a href="#">F23N 3/00</a>
Air inlet arrangements for combustion chambers for generating combustion products of high pressure or high velocity, e.g. for gas turbine combustion chambers	<a href="#">F23R 3/04</a>
Draught control dampers for solid fuel stoves with open fires	<a href="#">F24B 1/189</a>
Air supply in solid fuel stoves with open fires	<a href="#">F24B 1/19</a>
Hoods for solid fuel stoves with open fires	<a href="#">F24B 1/195</a>
Combustion-air or flue gas circulation in or around solid fuel stoves	<a href="#">F24B 5/00</a>

Stoves for combustion of gaseous or liquid fuels, or for two or more different fuels	<a href="#">F24C</a>
Fluid heaters, e.g. water or air heaters for central heating	<a href="#">F24H</a>

### Informative references

Attention is drawn to the following places, which may be of interest for search:

Positive displacement air pumps in general	<a href="#">F04B</a>
Fans in general	<a href="#">F04D</a>
Jet pumps in general	<a href="#">F04F 5/00</a>
Valves in general	<a href="#">F16K</a>
Methods or apparatus for combustion using solid fuel	<a href="#">F23B</a>
Returning flue gases to the combustion chamber of combustion apparatus for solid fuel	<a href="#">F23B 80/02</a>
Methods or apparatus for combustion using fluid fuel	<a href="#">F23C</a>
Returning flue gases to the combustion chamber of combustion apparatus for liquid or gaseous fuel or pulverised solid fuel suspended in air	<a href="#">F23C 9/00</a>
Grates for combustion apparatus	<a href="#">F23H</a>
Supplying chemicals to fires	<a href="#">F23J 7/00</a>
Cooling of casings, lining or walls of combustion chambers	<a href="#">F23M 5/08</a>
Doors specially adapted for combustion chambers	<a href="#">F23M 7/00</a>
Baffles or deflectors in air inlets of combustion chambers	<a href="#">F23M 9/02</a>
Domestic stoves or ranges for solid fuels	<a href="#">F24B</a>
Air humidification	<a href="#">F24F 6/00</a>
Air flow control members for ventilation or air conditioning	<a href="#">F24F 13/08</a>
Heat exchangers in general	<a href="#">F28C</a> , <a href="#">F28D</a> , <a href="#">F28F</a>

### Special rules of classification

In this subclass, the first place priority rule is applied, i.e. at each hierarchical level, classification is made in the first appropriate place.

When classifying in this subclass, add also codes [F23L 2900/00001-F23L 2900/15044](#) .

Codes [F23L 2700/001-F23L 2700/002](#) are not used.

### Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

Air	a mixture of gases containing free oxygen and able to promote or support combustion
Primary air	air supplied to the burning fuel in order to liberate combustible gases
Secondary air	air supplied to the combustible gases liberated by the primary air in order to complete their combustion. The term "secondary air" covers "tertiary air" etc.

Ash	means any solid combustion residues, for example remaining in the fuel bed or suspended in the flue gases
Burner	a device by which fluid fuel or solid fuel suspended in air is passed to a combustion space where it burns to produce a self-supporting flame
Combustion	a heat-producing sequence of chemical reactions between a burnable substance and molecular oxygen, e.g. in air, in most cases generating light in the form of flames or a glow
Combustion chamber	a chamber in which fuel is burned to establish a self-supporting fire or flame and which surrounds that fire or flame
Combustion zone	the part of the apparatus where the reaction takes place between air and fuel
Firebridge	a low wall separating the fuel bed from adjacent flue gas passages in apparatus for combustion of solid fuel, for example in reverberatory furnaces or fire-tube boilers
Flue gases	any gaseous products of combustion
Grate	a perforated surface, e.g. a grid, which supports or delimits a bed of burning fuel and serves to supply primary air

## F23L 1/00

Passages or apertures for delivering primary air for combustion (baffles or deflectors in air inlets [F23M 9/02](#))

### Definition statement

*This place covers:*

Passages or apertures for delivering primary air for combustion.

### References

#### Limiting references

*This place does not cover:*

Baffles or deflectors in air inlets	<a href="#">F23M 9/02</a>
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## F23L 3/00

Arrangements of valves or dampers before the fire

### Definition statement

*This place covers:*

Arrangements of valves or dampers before the fire.

## F23L 5/00

### Blast-producing apparatus before the fire

#### Definition statement

*This place covers:*

Blast-producing apparatus before the fire.

#### References

##### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Arrangements of fans or blowers per se	<a href="#">F04</a>
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## F23L 5/02

### Arrangements of fans or blowers

#### References

##### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Fans or blowers per se	<a href="#">F04</a>
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## F23L 7/00

### Supplying non-combustible liquids or gases, other than air, to the fire, e.g. oxygen, steam

#### Definition statement

*This place covers:*

Supplying non-combustible liquids or gases, other than air, to the fire, e.g. oxygen, steam.

## F23L 9/00

### Passages or apertures for delivering secondary air for completing combustion of fuel (baffles or deflectors in air inlets [F23M 9/02](#))

#### Definition statement

*This place covers:*

Passages or apertures for delivering secondary air for completing combustion of fuel.

#### References

##### Limiting references

*This place does not cover:*

Baffles or deflectors in air inlets	<a href="#">F23M 9/02</a>
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**F23L 11/00****Arrangements of valves or dampers after the fire****Definition statement**

*This place covers:*

Arrangements of valves or dampers after the fire.

**F23L 13/00****Construction of valves or dampers for controlling air supply or draught****Definition statement**

*This place covers:*

Construction of valves or dampers for controlling air supply or draught.

**References****Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

Valves in general	<a href="#">F16K</a>
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**F23L 13/02**

**pivoted about a single axis but having not other movement (formed as linked slats each pivoted about an axis [F23L 13/08](#))**

**References****Limiting references**

*This place does not cover:*

Valves formed as linked slats each pivoted about an axis	<a href="#">F23L 13/08</a>
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**F23L 15/00****Heating of air supplied for combustion****Definition statement**

*This place covers:*

Heating of air supplied for combustion.

**F23L 17/00****Inducing draught; Tops for chimneys or ventilating shafts; Terminals for flues****Definition statement**

*This place covers:*

Inducing draught.

## **F23L 99/00**

**Subject matter not provided for in other groups of this subclass**

### **Definition statement**

*This place covers:*

Subject matter not provided for in other groups of this subclass.