

CPC**COOPERATIVE PATENT CLASSIFICATION****F23L****AIR SUPPLY; DRAUGHT-INDUCING; SUPPLYING**

NON-COMBUSTIBLE LIQUID OR GAS (air-supply arrangements for fluent fuels F23C; dampers and throat restrictors for open fire-places F24; air inlet valves for open fire fronts F24)

F23L 1/00**Passages or apertures for delivering primary air for combustion**

F23L 1/02

- . by discharging the air below the fire

F23L 3/00**Arrangements of valves or dampers before the fire****F23L 5/00****Blast-producing apparatus before the fire**

F23L 5/02

- . Arrangements of fans or blowers (fans or blowers per se [F04](#))

F23L 5/04

- . by induction of air for combustion, e.g. using steam jet

F23L 7/00**Supplying non-combustible liquids or gases, other than air, to the fire, e.g. oxygen, steam**

F23L 7/002

- . {Supplying water}

F23L 7/005

- .. { Evaporated water; Steam}

F23L 7/007

- . {Supplying oxygen or oxygen-enriched air}

F23L 9/00**Passages or apertures for delivering secondary air for completing combustion of fuel**

F23L 9/02

- . by discharging the air above the fire

F23L 9/04

- . by discharging the air beyond the fire, i.e. nearer the smoke outlet

F23L 9/06

- . by discharging the air into the fire bed

F23L 11/00**Arrangements of valves or dampers after the fire**

F23L 11/005

- . {for closing the flue during interruption of burner function}

F23L 11/02

- . for reducing draught by admission of air to flues

F23L 13/00 **Construction of valves or dampers for controlling air supply or draught (in general F16K)**

- 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](#))
- F23L 13/04 .. with axis perpendicular to face
- F23L 13/06 . slidable only
- F23L 13/08 . operating as a roller blind; operating as a venetian blind
- F23L 13/10 . having a compound movement involving both sliding and pivoting

F23L 15/00 **Heating of air supplied for combustion**

- F23L 15/02 . Arrangements of regenerators
- F23L 15/04 . Arrangements of recuperators
- F23L 15/045 .. {using intermediate heat-transfer fluids}

F23L 17/00 **Inducing draught**

- F23L 17/005 . {using fans}
- F23L 17/02 . Tops for chimneys or ventilating shafts; Terminals for flues
- F23L 17/04 .. Balanced-flue arrangements, i.e. devices which combine air inlet to combustion unit with smoke outlet
- F23L 17/06 .. branched; T-headed
- F23L 17/08 .. with co-axial cones or louvres
- F23L 17/10 .. wherein the top moves as a whole
- F23L 17/12 .. Devices for fastening the top or terminal to chimney, shaft, or flue
- F23L 17/14 .. Draining devices
- F23L 17/16 . Induction apparatus, e.g. steam jet, acting on combustion products beyond the fire

F23L 99/00 **Subject matter not provided for in other groups of this subclass**

F23L 2700/00 **Installations for increasing draught in chimneys; Specific draught control devices for locomotives**

- F23L 2700/001 . Installations for increasing draught in chimneys
- F23L 2700/002 . Specific draught control devices for locomotives

- F23L 2900/00** **Special arrangements for supplying or treating air or oxidant for combustion; Injecting inert gas, water or steam into the combustion chamber**
- F23L 2900/00001 . Treating oxidant before combustion, e.g. by adding a catalyst
 - F23L 2900/05021 . Gas turbine driven blowers for supplying combustion air or oxidant, i.e. turbochargers
 - F23L 2900/07001 . Injecting synthetic air, i.e. a combustion supporting mixture made of pure oxygen and an inert gas, e.g. nitrogen or recycled fumes
 - F23L 2900/07002 . Injecting inert gas, other than steam or evaporated water, into the combustion chambers
 - F23L 2900/07003 . Controlling the inert gas supply
 - F23L 2900/07004 . Injecting liquid or solid materials releasing oxygen, e.g. perchlorate, nitrate, peroxide, and chlorate compounds, or appropriate mixtures thereof
 - F23L 2900/07005 . Injecting pure oxygen or oxygen enriched air
 - F23L 2900/07006 . Control of the oxygen supply
 - F23L 2900/07007 . using specific ranges of oxygen percentage
 - F23L 2900/07008 . Injection of water into the combustion chamber
 - F23L 2900/07009 . Injection of steam into the combustion chamber
 - F23L 2900/15021 . using regenerative heat exchanger bodies with different layers of material
 - F23L 2900/15022 . using pre-purging regenerator beds
 - F23L 2900/15041 . Preheating combustion air by recuperating heat from ashes
 - F23L 2900/15042 . Preheating combustion air by auxiliary combustion, e.g. in a turbine
 - F23L 2900/15043 . Preheating combustion air by heat recovery means located in the chimney, e.g. for home heating devices
 - F23L 2900/15044 . Preheating combustion air by heat recovery means using solar or other clean energy