

# CPC COOPERATIVE PATENT CLASSIFICATION

## F MECHANICAL ENGINEERING; LIGHTING; HEATING; WEAPONS; BLASTING (NOTE omitted)

### LIGHTING; HEATING

#### F23 COMBUSTION APPARATUS; COMBUSTION PROCESSES (NOTE omitted)

#### 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](#))

1/00	<b>Passages or apertures for delivering primary air for combustion</b>	17/02	. Tops for chimneys or ventilating shafts; Terminals for flues
1/02	. by discharging the air below the fire	17/04	. . Balanced-flue arrangements, i.e. devices which combine air inlet to combustion unit with smoke outlet
3/00	<b>Arrangements of valves or dampers before the fire</b>		
5/00	<b>Blast-producing apparatus before the fire</b>	17/06	. . branched; T-headed
5/02	. Arrangements of fans or blowers ( <a href="#">fans or blowers per se F04</a> )	17/08	. . with coaxial cones or louvres
5/04	. by induction of air for combustion, e.g. using steam jet	17/10	. . wherein the top moves as a whole
		17/12	. . Devices for fastening the top or terminal to chimney, shaft, or flue
7/00	<b>Supplying non-combustible liquids or gases, other than air, to the fire, e.g. oxygen, steam</b>	17/14	. . Draining devices
7/002	. {Supplying water}	17/16	. Induction apparatus, e.g. steam jet, acting on combustion products beyond the fire
7/005	. . {Evaporated water; Steam}	99/00	<b>Subject matter not provided for in other groups of this subclass</b>
7/007	. {Supplying oxygen or oxygen-enriched air}		
9/00	<b>Passages or apertures for delivering secondary air for completing combustion of fuel</b>	2700/00	<b>Installations for increasing draught in chimneys; Specific draught control devices for locomotives</b>
9/02	. by discharging the air above the fire	2700/001	. Installations for increasing draught in chimneys
9/04	. by discharging the air beyond the fire, i.e. nearer the smoke outlet	2700/002	. Specific draught control devices for locomotives
9/06	. by discharging the air into the fire bed	2900/00	<b>Special arrangements for supplying or treating air or oxidant for combustion; Injecting inert gas, water or steam into the combustion chamber</b>
11/00	<b>Arrangements of valves or dampers after the fire</b>	2900/00001	. Treating oxidant before combustion, e.g. by adding a catalyst
11/005	. {for closing the flue during interruption of burner function}	2900/05021	. Gas turbine driven blowers for supplying combustion air or oxidant, i.e. turbochargers
11/02	. for reducing draught by admission of air to flues	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
13/00	<b>Construction of valves or dampers for controlling air supply or draught (in general <a href="#">F16K</a>)</b>	2900/07002	. Injecting inert gas, other than steam or evaporated water, into the combustion chambers
13/02	. pivoted about a single axis but having not other movement ( <a href="#">formed as linked slats each pivoted about an axis F23L 13/08</a> )	2900/07003	. Controlling the inert gas supply
13/04	. . with axis perpendicular to face	2900/07004	. Injecting liquid or solid materials releasing oxygen, e.g. perchlorate, nitrate, peroxide, and chlorate compounds, or appropriate mixtures thereof
13/06	. slidable only	2900/07005	. Injecting pure oxygen or oxygen enriched air
13/08	. operating as a roller blind; operating as a venetian blind	2900/07006	. Control of the oxygen supply
13/10	. having a compound movement involving both sliding and pivoting	2900/07007	. using specific ranges of oxygen percentage
15/00	<b>Heating of air supplied for combustion</b>	2900/07008	. Injection of water into the combustion chamber
15/02	. Arrangements of regenerators	2900/07009	. Injection of steam into the combustion chamber
15/04	. Arrangements of recuperators	2900/15021	. using regenerative heat exchanger bodies with different layers of material
15/045	. . {using intermediate heat-transfer fluids}	2900/15022	. using pre-purging regenerator beds
17/00	<b>Inducing draught</b>		
17/005	. {using fans}		

## F23L

- 2900/15041 . Preheating combustion air by recuperating heat from ashes
- 2900/15042 . Preheating combustion air by auxiliary combustion, e.g. in a turbine
- 2900/15043 . Preheating combustion air by heat recovery means located in the chimney, e.g. for home heating devices
- 2900/15044 . Preheating combustion air by heat recovery means using solar or other clean energy