CPC COOPERATIVE PATENT CLASSIFICATION

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

LIGHTING; **HEATING**

F23 COMBUSTION APPARATUS; COMBUSTION PROCESSES

(NOTE omitted)

F23N REGULATING OR CONTROLLING COMBUSTION (control devices specially adapted for combustion apparatus in which combustion takes place in a fluidised bed of fuel or other particles <u>F23C 10/28</u>; condition responsive controls for regulating combustion in domestic stoves with open fires for solid fuel <u>F24B 1/187</u>)

1/00	Regulating fuel supply	3/06	by conjoint operation of two or more valves or
1/002	• {using electronic means (<u>F23N 1/04</u> - <u>F23N 1/10</u>		dampers (by power-assisted systems <u>F23N 3/08</u>)
	take precedence)}	3/065	• {using mechanical means}
1/005	• {using electrical or electromechanical means	3/08	 by power-assisted systems
	$(\underline{\text{F23N } 1/04} - \underline{\text{F23N } 1/10} \text{ take precedence})$	3/082	• • {using electronic means}
1/007	• {using mechanical means (<u>F23N 1/04</u> - <u>F23N 1/10</u>	3/085	• • {using electrical or electromechanical means}
4 /0.0	take precedence)}	3/087	• • {using mechanical means}
1/02	• conjointly with air supply	5/00	Systems for controlling combustion (regulating fuel
1/022	• • {using electronic means}	5/00	supply <u>F23N 1/00</u> , regulating air supply or draught
1/025	• • {using electrical or electromechanical means}		F23N 3/00)
1/027	• • {using mechanical means}	5/003	• {using detectors sensitive to combustion gas
1/04	 conjointly with air supply and with draught 	2,003	properties (F23N 5/02, F23N 5/18 - F23N 5/26 take
1/042	• • {using electronic means}		precedence)}
1/045	• • {using electrical or electromechanical means}	5/006	• {the detector being sensitive to oxygen}
1/047	• • {using mechanical means}	5/02	• using devices responsive to thermal changes or to
1/06	 conjointly with draught 		thermal expansion of a medium
1/062	• • {using electronic means}	5/022	• • {using electronic means (<u>F23N 5/04</u> - <u>F23N 5/14</u>
1/065	• • {using electrical or electromechanical means}		take precedence)}
1/067	• • {using mechanical means}	5/025	• • {using electrical or electromechanical means
1/08	 conjointly with another medium, e.g. boiler water 		(F23N 5/04 - F23N 5/14) take precedence)
1/082	• • {using electronic means}	5/027	• • {using mechanical means
1/085	• • {using electrical or electromechanical means}		$(\underline{F23N} 5/04 - \underline{F23N} 5/14 \text{take precedence})$
1/087	• • {using mechanical means}	5/04	 using bimetallic elements
1/10	 and with air supply or draught 	5/042	• • {using electronic means}
1/102	• • • {using electronic means}	5/045	• • { using electrical or electromechanical means }
1/105	• • • {using electrical or electromechanical means}	5/047	• • {using mechanical means}
1/107	• • • {using mechanical means}	5/06	 using bellows; using diaphragms
3/00	Dogulating air supply or drought (conjointly with	5/062	• • {using electronic means}
3/00	Regulating air supply or draught (conjointly with fuel supply F23N 1/00)	5/065	• • { using electrical or electromechanical means }
3/002	• {using electronic means (F23N 3/02 - F23N 3/08	5/067	• • • {using mechanical means}
3/002	take precedence)}	5/08	using light-sensitive elements
3/005	• {using electrical or electromechanical means	5/082	• • • {using electronic means}
3/003	(F23N $3/02$ - F23N $3/08$ take precedence)	5/085	• • • {using electrical or electromechanical means}
3/007	• {using mechanical means (F23N 3/02 - F23N 3/08	5/087	• • • {using mechanical means}
5,007	take precedence)}	5/10	using thermocouples
3/02	Regulating draught by direct pressure operation of	5/102	• • {using electronic means}
	single valves or dampers	5/105	• • { using electrical or electromechanical means }
3/04	 by operation of single valves or dampers by 	5/107	• • {using mechanical means, e.g. safety valves}
	temperature sensitive elements	5/12	• using ionisation-sensitive elements, i.e. flame
3/042	• • {using electronic means}		rods
3/045	• • {using electrical or electromechanical means}	5/123	• • • {using electronic means}
3/047	• • {using mechanical means}	5/126	• • • {using electrical or electromechanical means}
	,	5/14	using thermo-sensitive resistors

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5/143	(ucing alactronic maans)	2225/00	Moncuring
5/145	 {using electronic means} {using electrical or electromechanical means}	2225/02	Measuring filling height in burners
5/140	 using noise-sensitive detectors 	2225/02	pressure
2005/165	with ultrasonic means }	2225/04	. for determining flow
5/18	 using detectors sensitive to rate of flow of air or fuel 	2225/08	temperature
2005/181	 4 using detectors sensitive to rate of flow of air of flow 4 (using detectors sensitive to rate of flow of air) 	2225/10	stack temperature
2005/181	{Air flow switch}	2225/10	room temperature
5/184	{using electronic means}	2225/12	outdoor temperature
2005/185	 {using electronic means} {using detectors sensitive to rate of flow of fuel}	2225/13	Ambient temperature around burners
5/187	using electrical or electromechanical means}	2225/14	burner temperature
5/188	• {using electrical of electronic maintain means}• {using mechanical means}	2225/18	feedwater temperature
5/20	 with a time programme acting through electrical 	2225/19	outlet temperature water heat-exchanger
3/20	means, e.g. using time-delay relays	2225/20	entrant temperature
5/203	• {using electronic means}	2225/20	outlet temperature
5/206	• {using electrical or electromechanical means}	2225/21	heat losses
5/22	• with a time programme acting through mechanical	2225/24	indicated in an amount of money
-,	means, e.g. using cams	2225/26	humidity
5/24	Preventing development of abnormal or	2225/30	measuring lambda
	undesired conditions, i.e. safety arrangements	2220,00	V V mensuring mineral
	(<u>F23N 5/02</u> - <u>F23N 5/18</u> take precedence)	2227/00	Ignition or checking
5/242	• • {using electronic means}	2227/02	Starting or ignition cycles
5/245	• • {using electrical or electromechanical means}	2227/04	• Prepurge
5/247	• • {using mechanical means}	2227/06	. Postpurge
5/26	. Details	2227/08	Hold fire apparatus
5/265	• • {using electronic means}	2227/10	Sequential burner running
		2227/12	Burner simulation or checking
2221/00	Pretreatment or prehandling	2227/14	Flame simulation
2221/02	using belt conveyors	2227/16	Checking components, e.g. electronic
2221/04	Preheating liquid fuel	2227/18	Applying test signals, e.g. periodic
2221/06	Preheating gaseous fuel	2227/20	Calibrating devices
2221/08	• Preheating the air	2227/22	• Pilot burners
2221/10	Analysing fuel properties, e.g. density, calorific	2227/24	• • the pilot burner not burning continuously
2221/12	Recycling exhaust gases	2227/26	comprising two or more distinct pilot burners
2223/00	Signal processing; Details thereof	2227/28	. Ignition circuits
2223/02	Multiplex transmission	2227/30	for pilot burners
2223/04	Mamari	2227/32	 Igniting for a predetermined number of cycles
	. Memory		
2223/06	Sampling	2227/34	Continuously applied ignition cycles
		2227/34 2227/36	Spark ignition, e.g. by means of a high voltage
2223/06	. Sampling	2227/34 2227/36 2227/38	Spark ignition, e.g. by means of a high voltageElectrical resistance ignition
2223/06 2223/08	Sampling Microprocessor; Microcomputer	2227/34 2227/36 2227/38 2227/40	 Spark ignition, e.g. by means of a high voltage Electrical resistance ignition Catalytic ignition
2223/06 2223/08 2223/10	SamplingMicroprocessor; MicrocomputerCorrelation	2227/34 2227/36 2227/38	Spark ignition, e.g. by means of a high voltageElectrical resistance ignition
2223/06 2223/08 2223/10 2223/12	SamplingMicroprocessor; MicrocomputerCorrelationIntegration	2227/34 2227/36 2227/38 2227/40	 Spark ignition, e.g. by means of a high voltage Electrical resistance ignition Catalytic ignition
2223/06 2223/08 2223/10 2223/12 2223/14	 Sampling Microprocessor; Microcomputer Correlation Integration Differentiation 	2227/34 2227/36 2227/38 2227/40 2227/42	 Spark ignition, e.g. by means of a high voltage Electrical resistance ignition Catalytic ignition Ceramic glow ignition
2223/06 2223/08 2223/10 2223/12 2223/14 2223/16	 Sampling Microprocessor; Microcomputer Correlation Integration Differentiation Measuring bridge 	2227/34 2227/36 2227/38 2227/40 2227/42 2229/00	 Spark ignition, e.g. by means of a high voltage Electrical resistance ignition Catalytic ignition Ceramic glow ignition Flame sensors
2223/06 2223/08 2223/10 2223/12 2223/14 2223/16 2223/18	 Sampling Microprocessor; Microcomputer Correlation Integration Differentiation Measuring bridge Chopper Opto-coupler Timing network 	2227/34 2227/36 2227/38 2227/40 2227/42 2229/00 2229/02	 Spark ignition, e.g. by means of a high voltage Electrical resistance ignition Catalytic ignition Ceramic glow ignition Flame sensors Pilot flame sensors
2223/06 2223/08 2223/10 2223/12 2223/14 2223/16 2223/18 2223/20	 Sampling Microprocessor; Microcomputer Correlation Integration Differentiation Measuring bridge Chopper Opto-coupler 	2227/34 2227/36 2227/38 2227/40 2227/42 2229/00 2229/02 2229/04	 Spark ignition, e.g. by means of a high voltage Electrical resistance ignition Catalytic ignition Ceramic glow ignition Flame sensors Pilot flame sensors sensitive to the colour of flames
2223/06 2223/08 2223/10 2223/12 2223/14 2223/16 2223/18 2223/20 2223/22	 Sampling Microprocessor; Microcomputer Correlation Integration Differentiation Measuring bridge Chopper Opto-coupler Timing network 	2227/34 2227/36 2227/38 2227/40 2227/42 2229/00 2229/02 2229/04 2229/06	 Spark ignition, e.g. by means of a high voltage Electrical resistance ignition Catalytic ignition Ceramic glow ignition Flame sensors Pilot flame sensors sensitive to the colour of flames with periodical shutters; Modulation signals
2223/06 2223/08 2223/10 2223/12 2223/14 2223/16 2223/18 2223/20 2223/22 2223/24	 Sampling Microprocessor; Microcomputer Correlation Integration Differentiation Measuring bridge Chopper Opto-coupler Timing network with bimetallic elements 	2227/34 2227/36 2227/38 2227/40 2227/42 2229/00 2229/02 2229/04 2229/06 2229/08	 Spark ignition, e.g. by means of a high voltage Electrical resistance ignition Catalytic ignition Ceramic glow ignition Flame sensors Pilot flame sensors sensitive to the colour of flames with periodical shutters; Modulation signals detecting flame flicker comprising application of periodical fuel flow fluctuations
2223/06 2223/08 2223/10 2223/12 2223/14 2223/16 2223/18 2223/20 2223/22 2223/24 2223/26	 Sampling Microprocessor; Microcomputer Correlation Integration Differentiation Measuring bridge Chopper Opto-coupler Timing network with bimetallic elements with capacitors with more than one timing element Switches 	2227/34 2227/36 2227/38 2227/40 2227/42 2229/00 2229/02 2229/04 2229/06 2229/08	 Spark ignition, e.g. by means of a high voltage Electrical resistance ignition Catalytic ignition Ceramic glow ignition Flame sensors Pilot flame sensors sensitive to the colour of flames with periodical shutters; Modulation signals detecting flame flicker comprising application of periodical fuel flow fluctuations with flame rectification current detecting means
2223/06 2223/08 2223/10 2223/12 2223/14 2223/16 2223/18 2223/20 2223/22 2223/24 2223/26 2223/28	 Sampling Microprocessor; Microcomputer Correlation Integration Differentiation Measuring bridge Chopper Opto-coupler Timing network with bimetallic elements with capacitors with more than one timing element Switches Reed switches 	2227/34 2227/36 2227/38 2227/40 2227/42 2229/00 2229/02 2229/04 2229/06 2229/10 2229/12 2229/14	 Spark ignition, e.g. by means of a high voltage Electrical resistance ignition Catalytic ignition Ceramic glow ignition Flame sensors Pilot flame sensors sensitive to the colour of flames with periodical shutters; Modulation signals detecting flame flicker comprising application of periodical fuel flow fluctuations with flame rectification current detecting means using two or more different types of flame sensor
2223/06 2223/08 2223/10 2223/12 2223/14 2223/16 2223/20 2223/22 2223/24 2223/26 2223/28 2223/30 2223/32 2223/34	 Sampling Microprocessor; Microcomputer Correlation Integration Differentiation Measuring bridge Chopper Opto-coupler Timing network with bimetallic elements with capacitors with more than one timing element Switches 	2227/34 2227/36 2227/38 2227/40 2227/42 2229/00 2229/02 2229/04 2229/06 2229/10 2229/10 2229/14 2229/14 2229/16	 Spark ignition, e.g. by means of a high voltage Electrical resistance ignition Catalytic ignition Ceramic glow ignition Flame sensors Pilot flame sensors sensitive to the colour of flames with periodical shutters; Modulation signals detecting flame flicker comprising application of periodical fuel flow fluctuations with flame rectification current detecting means
2223/06 2223/08 2223/10 2223/12 2223/14 2223/16 2223/20 2223/22 2223/24 2223/26 2223/28 2223/30 2223/32 2223/34 2223/36	 Sampling Microprocessor; Microcomputer Correlation Integration Differentiation Measuring bridge Chopper Opto-coupler Timing network with bimetallic elements with capacitors with more than one timing element Switches Reed switches with feedforward processing PID signal processing 	2227/34 2227/36 2227/38 2227/40 2227/42 2229/00 2229/02 2229/04 2229/06 2229/10 2229/10 2229/14 2229/16 2229/16 2229/18	 Spark ignition, e.g. by means of a high voltage Electrical resistance ignition Catalytic ignition Ceramic glow ignition Flame sensors Pilot flame sensors sensitive to the colour of flames with periodical shutters; Modulation signals detecting flame flicker comprising application of periodical fuel flow fluctuations with flame rectification current detecting means using two or more different types of flame sensor using two or more of the same types of flame sensor Flame sensor cooling means
2223/06 2223/08 2223/10 2223/12 2223/14 2223/16 2223/20 2223/22 2223/24 2223/26 2223/28 2223/30 2223/32 2223/34 2223/36 2223/36 2223/38	 Sampling Microprocessor; Microcomputer Correlation Integration Differentiation Measuring bridge Chopper Opto-coupler Timing network with bimetallic elements with capacitors with more than one timing element Switches Reed switches with feedforward processing PID signal processing Remote control 	2227/34 2227/36 2227/38 2227/40 2227/42 2229/00 2229/02 2229/04 2229/08 2229/10 2229/10 2229/12 2229/14 2229/16 2229/18 2229/18 2229/20	 Spark ignition, e.g. by means of a high voltage Electrical resistance ignition Catalytic ignition Ceramic glow ignition Flame sensors Pilot flame sensors sensitive to the colour of flames with periodical shutters; Modulation signals detecting flame flicker comprising application of periodical fuel flow fluctuations with flame rectification current detecting means using two or more different types of flame sensor using two or more of the same types of flame sensor Flame sensor cooling means Camera viewing
2223/06 2223/08 2223/10 2223/12 2223/14 2223/16 2223/20 2223/22 2223/24 2223/26 2223/28 2223/30 2223/32 2223/34 2223/36 2223/38 2223/38 2223/40	 Sampling Microprocessor; Microcomputer Correlation Integration Differentiation Measuring bridge Chopper Opto-coupler Timing network with bimetallic elements with capacitors with more than one timing element Switches Reed switches with feedforward processing PID signal processing Remote control Simulation 	2227/34 2227/36 2227/38 2227/40 2227/42 2229/00 2229/02 2229/04 2229/06 2229/10 2229/10 2229/14 2229/16 2229/16 2229/18	 Spark ignition, e.g. by means of a high voltage Electrical resistance ignition Catalytic ignition Ceramic glow ignition Flame sensors Pilot flame sensors sensitive to the colour of flames with periodical shutters; Modulation signals detecting flame flicker comprising application of periodical fuel flow fluctuations with flame rectification current detecting means using two or more different types of flame sensor using two or more of the same types of flame sensor Flame sensor cooling means
2223/06 2223/08 2223/10 2223/12 2223/14 2223/16 2223/20 2223/22 2223/24 2223/26 2223/28 2223/30 2223/32 2223/34 2223/36 2223/38 2223/38 2223/40 2223/42	 Sampling Microprocessor; Microcomputer Correlation Integration Differentiation Measuring bridge Chopper Opto-coupler Timing network with bimetallic elements with capacitors with more than one timing element Switches Reed switches with feedforward processing PID signal processing Remote control Simulation Function generator 	2227/34 2227/36 2227/38 2227/40 2227/42 2229/00 2229/02 2229/04 2229/06 2229/10 2229/12 2229/14 2229/16 2229/18 2229/20 2229/22	 Spark ignition, e.g. by means of a high voltage Electrical resistance ignition Catalytic ignition Ceramic glow ignition Flame sensors Pilot flame sensors sensitive to the colour of flames with periodical shutters; Modulation signals detecting flame flicker comprising application of periodical fuel flow fluctuations with flame rectification current detecting means using two or more different types of flame sensor using two or more of the same types of flame sensor Flame sensor cooling means Camera viewing the sensor's sensitivity being variable
2223/06 2223/08 2223/10 2223/12 2223/14 2223/16 2223/20 2223/22 2223/24 2223/26 2223/28 2223/30 2223/32 2223/34 2223/36 2223/38 2223/38 2223/40 2223/42 2223/44	 Sampling Microprocessor; Microcomputer Correlation Integration Differentiation Measuring bridge Chopper Opto-coupler Timing network with bimetallic elements with capacitors with more than one timing element Switches Reed switches with feedforward processing PID signal processing Remote control Simulation Function generator Optimum control 	2227/34 2227/36 2227/38 2227/40 2227/42 2229/00 2229/02 2229/04 2229/06 2229/10 2229/10 2229/14 2229/16 2229/18 2229/18 2229/20 2229/22 2231/00	 Spark ignition, e.g. by means of a high voltage Electrical resistance ignition Catalytic ignition Ceramic glow ignition Flame sensors Pilot flame sensors sensitive to the colour of flames with periodical shutters; Modulation signals detecting flame flicker comprising application of periodical fuel flow fluctuations with flame rectification current detecting means using two or more different types of flame sensor using two or more of the same types of flame sensor Flame sensor cooling means Camera viewing the sensor's sensitivity being variable Fail safe
2223/06 2223/08 2223/10 2223/12 2223/14 2223/16 2223/20 2223/22 2223/24 2223/26 2223/28 2223/30 2223/32 2223/34 2223/36 2223/38 2223/40 2223/42 2223/44 2223/46	 Sampling Microprocessor; Microcomputer Correlation Integration Differentiation Measuring bridge Chopper Opto-coupler Timing network with bimetallic elements with capacitors with more than one timing element Switches Reed switches with feedforward processing PID signal processing Remote control Simulation Function generator Optimum control Identification 	2227/34 2227/36 2227/38 2227/40 2227/42 2229/00 2229/02 2229/04 2229/06 2229/10 2229/12 2229/14 2229/16 2229/18 2229/20 2229/22 2231/00 2231/02	 Spark ignition, e.g. by means of a high voltage Electrical resistance ignition Catalytic ignition Ceramic glow ignition Flame sensors Pilot flame sensors sensitive to the colour of flames with periodical shutters; Modulation signals detecting flame flicker comprising application of periodical fuel flow fluctuations with flame rectification current detecting means using two or more different types of flame sensor using two or more of the same types of flame sensor Flame sensor cooling means Camera viewing the sensor's sensitivity being variable Fail safe using electric energy accumulators
2223/06 2223/08 2223/10 2223/12 2223/14 2223/16 2223/20 2223/22 2223/24 2223/26 2223/28 2223/30 2223/32 2223/34 2223/36 2223/38 2223/40 2223/44 2223/46 2223/48	 Sampling Microprocessor; Microcomputer Correlation Integration Differentiation Measuring bridge Chopper Opto-coupler Timing network with bimetallic elements with capacitors with more than one timing element Switches Reed switches with feedforward processing PID signal processing Remote control Simulation Function generator Optimum control Identification Learning / Adaptive control 	2227/34 2227/36 2227/38 2227/40 2227/42 2229/00 2229/02 2229/04 2229/08 2229/10 2229/12 2229/14 2229/16 2229/18 2229/20 2229/22 2231/00 2231/02 2231/04	 Spark ignition, e.g. by means of a high voltage Electrical resistance ignition Catalytic ignition Ceramic glow ignition Flame sensors Pilot flame sensors sensitive to the colour of flames with periodical shutters; Modulation signals detecting flame flicker comprising application of periodical fuel flow fluctuations with flame rectification current detecting means using two or more different types of flame sensor Islame sensor cooling means Camera viewing the sensor's sensitivity being variable Fail safe using electric energy accumulators for electrical power failures
2223/06 2223/08 2223/10 2223/12 2223/14 2223/16 2223/18 2223/20 2223/22 2223/24 2223/26 2223/28 2223/30 2223/32 2223/34 2223/36 2223/38 2223/40 2223/42 2223/46 2223/48 2223/48 2223/50	 Sampling Microprocessor; Microcomputer Correlation Integration Differentiation Measuring bridge Chopper Opto-coupler Timing network with bimetallic elements with capacitors with more than one timing element Switches Reed switches with feedforward processing PID signal processing Remote control Simulation Function generator Optimum control Identification Learning / Adaptive control Human control 	2227/34 2227/36 2227/38 2227/40 2227/42 2229/00 2229/02 2229/04 2229/08 2229/10 2229/12 2229/14 2229/16 2229/18 2229/20 2231/00 2231/04 2231/06	 Spark ignition, e.g. by means of a high voltage Electrical resistance ignition Catalytic ignition Ceramic glow ignition Flame sensors Pilot flame sensors sensitive to the colour of flames with periodical shutters; Modulation signals detecting flame flicker comprising application of periodical fuel flow fluctuations with flame rectification current detecting means using two or more different types of flame sensor rusing two or more of the same types of flame sensor Flame sensor cooling means Camera viewing the sensor's sensitivity being variable Fail safe using electric energy accumulators for electrical power failures for flame failures
2223/06 2223/08 2223/10 2223/12 2223/14 2223/16 2223/20 2223/22 2223/24 2223/26 2223/28 2223/30 2223/32 2223/34 2223/36 2223/38 2223/40 2223/42 2223/44 2223/46 2223/48 2223/50 2223/52	 Sampling Microprocessor; Microcomputer Correlation Integration Differentiation Measuring bridge Chopper Opto-coupler Timing network with bimetallic elements with capacitors with more than one timing element Switches Reed switches with feedforward processing PID signal processing Remote control Simulation Function generator Optimum control Identification Learning / Adaptive control Human control Fuzzy logic 	2227/34 2227/36 2227/38 2227/40 2227/42 2229/00 2229/02 2229/04 2229/06 2229/10 2229/12 2229/14 2229/16 2229/18 2229/20 2229/22 2231/00 2231/04 2231/06 2231/08	 Spark ignition, e.g. by means of a high voltage Electrical resistance ignition Catalytic ignition Ceramic glow ignition Flame sensors Pilot flame sensors sensitive to the colour of flames with periodical shutters; Modulation signals detecting flame flicker comprising application of periodical fuel flow fluctuations with flame rectification current detecting means using two or more different types of flame sensor using two or more of the same types of flame sensor Flame sensor cooling means Camera viewing the sensor's sensitivity being variable Fail safe using electric energy accumulators for electrical power failures for flame failures for pilot flame failures
2223/06 2223/08 2223/10 2223/12 2223/14 2223/16 2223/18 2223/20 2223/22 2223/24 2223/26 2223/28 2223/30 2223/32 2223/34 2223/36 2223/38 2223/40 2223/42 2223/46 2223/48 2223/48 2223/50	 Sampling Microprocessor; Microcomputer Correlation Integration Differentiation Measuring bridge Chopper Opto-coupler Timing network with bimetallic elements with capacitors with more than one timing element Switches Reed switches with feedforward processing PID signal processing Remote control Simulation Function generator Optimum control Identification Learning / Adaptive control Human control 	2227/34 2227/36 2227/38 2227/40 2227/42 2229/00 2229/02 2229/04 2229/08 2229/10 2229/12 2229/14 2229/16 2229/18 2229/20 2231/00 2231/04 2231/06	 Spark ignition, e.g. by means of a high voltage Electrical resistance ignition Catalytic ignition Ceramic glow ignition Flame sensors Pilot flame sensors sensitive to the colour of flames with periodical shutters; Modulation signals detecting flame flicker comprising application of periodical fuel flow fluctuations with flame rectification current detecting means using two or more different types of flame sensor rusing two or more of the same types of flame sensor Flame sensor cooling means Camera viewing the sensor's sensitivity being variable Fail safe using electric energy accumulators for electrical power failures for flame failures

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F23N			
2231/14	for earthquakes	2241/12	Stack-torches
2231/14	for earthquakesusing melting materials or shape memory alloys	2241/12	Vehicle heating, the heat being derived otherwise
2231/18	 using menting materials of shape mentory anoys Detecting fluid leaks 	2241/14	than from the propulsion plant
2231/18	Warning devices	2241/16	Spectrometer burners
2231/20	using warning lamps	2241/18	Incinerating apparatus
2231/24	Using warming ramps Freezing	2241/20	Gas turbines
2231/24	for clogging air inlet	2241/20	Absorption refrigerator
2231/28	preventing flash-back or blow-back		· ·
2231/20	Representation of working time	2900/00	Special features of, or arrangements for
2231/30	• Representation of working time	• • • • • • • • • • • • • • • • • • • •	controlling combustion
2233/00	Ventilators	2900/01001	, ,
2233/02	• in stacks	2000/01002	controlling fuel supply to burners
2233/04	with variable speed	2900/01002	Electromagnetically operated fuel valves with a single solenoid controlling two or more cores
2233/06	• at the air intake	2000/05001	
2233/08	with variable speed		 Measuring CO content in flue gas Measuring CO₂ content in flue gas
2233/10	forcing air through heat exchangers		 Measuring NOx content in flue gas Measuring NOx content in flue gas
2235/00	Valves, nozzles or pumps		 Details of components, e.g. connecting adaptors
2235/02	Air or combustion gas valves or dampers		Mounting arrangements for sensing, detecting or
2235/04	in stacks	2900/03003	measuring devices
2235/06	• at the air intake	2900/05006	Controlling systems using neuronal networks
2235/08	. used with heat exchanges		Connections between thermocouple and magnetic
2235/10	• power assisted, e.g. using electric motors	2700/03101	valves, e.g. by plug and socket connectors
2235/12	• Fuel valves	2900/05181	• Controlling air to fuel ratio by using a single
2235/14	electromagnetically operated		differential pressure detector
2235/16	• • variable flow or proportional valves		•
2235/18	Groups of two or more valves		
2235/20	Membrane valves		
2235/22	cooperating with magnets		
2235/24	Valve details		
2235/26	Fuel nozzles		
2235/28	Spray fuel nozzles		
2235/30	. Pumps		
2237/00	Controlling		
2237/02	• two or more burners		
2237/04	at two or more different localities		
2237/06	two predeterming temperatures, e.g. day-night		
2237/08	two or more different types of fuel simultaneously		
2237/10	. High or low fire		
2237/12	catalytic burners		
2237/14	 burners with gasification or vaporizer elements 		
2237/16	• secondary air		
2237/18	. fluidized bed burners		
2237/20	one or more bypass conduits		
2237/22	• water injection		
2237/24	height of burner		
2237/26	oxygen-air ratio		
2237/28	oxygen as pure oxydant		
2237/30	matrix burners		
2237/32	Nox		
2239/00	Fuels		
2239/00	Solid fuels		
2239/02	Gaseous fuels		
2239/04	Liquid fuels		
	•		
2241/00	Applications		
2241/02	. Space-heating		
2241/04	. Heating water		
22/11/06	Space heating and heating water		

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2241/06 • Space-heating and heating water

2241/08 . Household apparatus2241/10 . Generating vapour

2241/11 • Torches