Symbol	Typ	Titel
F	**Sektion**	**SECTION F — MECHANICAL ENGINEERING; LIGHTING; HEATING; WEAPONS; BLASTING**
F23	**Klasse**	**COMBUSTION APPARATUS; COMBUSTION PROCESSES**
F23D	**Unterklasse**	**BURNERS (generating combustion products of high pressure or high velocity F23R)**
F23D 1/00	**Hauptgruppe**	**Burners for combustion of pulverulent fuel (arrangement or mounting of burners F23C 5/00)**
F23D 1/02	1-Punkt Untergruppe	. Vortex burners, e.g. for cyclone-type combustion apparatus
F23D 1/04	1-Punkt Untergruppe	. Burners producing cylindrical flames without centrifugal action
F23D 1/06	1-Punkt Untergruppe	. Burners producing sheet flames
		Combustion of a liquid
F23D 3/00	**Hauptgruppe**	**Burners using capillary action**
F23D 3/02	1-Punkt Untergruppe	. Wick burners
F23D 3/04	2-Punkt Untergruppe	. . with flame spreaders (F23D 3/12 takes precedence)
F23D 3/06	2-Punkt Untergruppe	. . Inverted wick burners, e.g. for illumination
F23D 3/08	2-Punkt Untergruppe	. . characterised by shape, construction, or material, of wick
F23D 3/10	2-Punkt Untergruppe	. . Blue-flame burners
F23D 3/12	3-Punkt Untergruppe	. . . with flame spreaders
F23D 3/14	3-Punkt Untergruppe	. . . with mixing of air and fuel vapour in a chamber before the flame
F23D 3/16	2-Punkt Untergruppe	. . using candles (candles per seC11C)
F23D 3/18	2-Punkt Untergruppe	. . Details of wick burners
F23D 3/20	3-Punkt Untergruppe	. . . Flame spreaders
F23D 3/22	3-Punkt Untergruppe	. . . Devices for mixing evaporated fuel with air
F23D 3/24	3-Punkt Untergruppe	. . . Carriers for wicks
F23D 3/26	4-Punkt Untergruppe	. . . . Safety devices thereon
F23D 3/28	3-Punkt Untergruppe	. . . Wick-adjusting devices
F23D 3/30	4-Punkt Untergruppe	. . . . directly engaging with the wick
F23D 3/32	4-Punkt Untergruppe	. . . . engaging with a tube carrying the wick
F23D 3/34	4-Punkt Untergruppe	. . . . Wick stop devices; Wick-fixing devices
F23D 3/36	3-Punkt Untergruppe	. . . Devices for trimming wicks
F23D 3/38	3-Punkt Untergruppe	. . . Devices for replacement of wicks
F23D 3/40	1-Punkt Untergruppe	. the capillary action taking place in one or more rigid porous bodies
F23D 5/00	**Hauptgruppe**	**Burners in which liquid fuel evaporates in the combustion space, with or without chemical conversion of evaporated fuel**
F23D 5/02	1-Punkt Untergruppe	. the liquid forming a pool, e.g. bowl-type evaporators, dish-type evaporators

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F23D 5/04	2-Punkt Untergruppe	. . Pot-type evaporators, i.e. using a partially-enclosed combustion space
F23D 5/06	1-Punkt Untergruppe	. the liquid forming a film on one or more plane or convex surfaces
F23D 5/08	2-Punkt Untergruppe	. . on cascaded surfaces
F23D 5/10	2-Punkt Untergruppe	. . on grids
F23D 5/12	1-Punkt Untergruppe	. Details
F23D 5/14	2-Punkt Untergruppe	. . Maintaining predetermined amount of fuel in evaporator
F23D 5/16	2-Punkt Untergruppe	. . Safety devices
F23D 5/18	2-Punkt Untergruppe	. . Preheating devices
F23D 7/00	**Hauptgruppe**	**Burners in which drops of liquid fuel impinge on a surface**
F23D 9/00	**Hauptgruppe**	**Burners in which a stream of liquid fuel impinges intermittently on a hot surface**
F23D 11/00	**Hauptgruppe**	**Burners using a direct spraying action of liquid droplets or vaporised liquid into the combustion space (spraying in general B05B, B05D)**
F23D 11/02	1-Punkt Untergruppe	. the combustion space being a chamber substantially at atmospheric pressure
F23D 11/04	1-Punkt Untergruppe	. the spraying action being obtained by centrifugal action
F23D 11/06	2-Punkt Untergruppe	. . using a horizontal shaft
F23D 11/08	2-Punkt Untergruppe	. . using a vertical shaft
F23D 11/10	1-Punkt Untergruppe	. the spraying being induced by a gaseous medium, e.g. water vapour
F23D 11/12	2-Punkt Untergruppe	. . characterised by the shape or arrangement of the outlets from the nozzle
F23D 11/14	3-Punkt Untergruppe	. . . with a single outlet, e.g. slit
F23D 11/16	2-Punkt Untergruppe	. . in which an emulsion of water and fuel is sprayed
F23D 11/18	2-Punkt Untergruppe	. . the gaseous medium being water vapour generated at the nozzle
F23D 11/20	3-Punkt Untergruppe	. . . the water vapour being superheated
F23D 11/22	2-Punkt Untergruppe	. . the gaseous medium being vaporised fuel, e.g. for a soldering lamp
F23D 11/24	1-Punkt Untergruppe	. by pressurisation of the fuel before a nozzle through which it is sprayed by a substantial pressure reduction into a space
F23D 11/26	2-Punkt Untergruppe	. . with provision for varying the rate at which the fuel is sprayed
F23D 11/28	3-Punkt Untergruppe	. . . with flow-back of fuel at the burner, e.g. using by-pass
F23D 11/30	3-Punkt Untergruppe	. . . with return feed of uncombusted sprayed fuel to reservoir
F23D 11/32	1-Punkt Untergruppe	. by electrostatic means
F23D 11/34	1-Punkt Untergruppe	. by ultrasonic means
F23D 11/36	1-Punkt Untergruppe	. Details
F23D 11/38	2-Punkt Untergruppe	. . Nozzles (nozzles in general B05B); Cleaning devices therefor
F23D 11/40	2-Punkt Untergruppe	. . Mixing tubes; Burner heads
F23D 11/42	2-Punkt Untergruppe	. . Starting devices (igniting F23Q)

Symbol	Typ	Titel
F23D 11/44	2-Punkt Untergruppe	. . Preheating devices; Vaporising devices
F23D 11/46	2-Punkt Untergruppe	. . Devices on the vaporiser for controlling the feeding of the fuel
F23D 14/00	**Hauptgruppe**	**Burners for combustion of a gas, e.g. of a gas stored under pressure as a liquid [4]**
F23D 14/02	1-Punkt Untergruppe	. Premix gas burners, i.e. in which gaseous fuel is mixed with combustion air upstream of the combustion zone [4]
F23D 14/04	2-Punkt Untergruppe	. . induction type, e.g. Bunsen burner [4]
F23D 14/06	3-Punkt Untergruppe	. . . with radial outlets at the burner head [4]
F23D 14/08	3-Punkt Untergruppe	. . . with axial outlets at the burner head [4]
F23D 14/10	3-Punkt Untergruppe	. . . with elongated tubular burner head [4]
F23D 14/12	1-Punkt Untergruppe	. Radiant burners [4]
F23D 14/14	2-Punkt Untergruppe	. . using screens or perforated plates [4]
F23D 14/16	2-Punkt Untergruppe	. . using permeable blocks [4]
F23D 14/18	2-Punkt Untergruppe	. . using catalysis for flameless combustion [4]
F23D 14/20	1-Punkt Untergruppe	. Non-premix gas burners, i.e. in which gaseous fuel is mixed with combustion air on arrival at the combustion zone (F23D 14/30-F23D 14/44 take precedence) [4]
F23D 14/22	2-Punkt Untergruppe	. . with separate air and gas feed ducts, e.g. with ducts running parallel or crossing each other [4]
F23D 14/24	3-Punkt Untergruppe	. . . at least one of the fluids being submitted to a swirling motion [4]
F23D 14/26	1-Punkt Untergruppe	. with provision for a retention flame (pilot flame igniters F23Q 9/00) [4]
F23D 14/28	1-Punkt Untergruppe	. in association with a gaseous fuel source, e.g. acetylene generator, or a container for liquefied gas [4]
F23D 14/30	1-Punkt Untergruppe	. Inverted burners, e.g. for illumination [4]
F23D 14/32	1-Punkt Untergruppe	. using a mixture of gaseous fuel and pure oxygen or oxygen-enriched air (F23D 14/38 takes precedence) [4]
F23D 14/34	1-Punkt Untergruppe	. Burners specially adapted for use with means for pressurising the gaseous fuel or the combustion air (F23D 14/38 takes precedence) [4]
F23D 14/36	2-Punkt Untergruppe	. . in which the compressor and burner form a single unit [4]
F23D 14/38	1-Punkt Untergruppe	. Torches, e.g. for cutting, brazing, welding or heating (nozzles F23D 14/48) [4]
F23D 14/40	2-Punkt Untergruppe	. . for welding (F23D 14/44 takes precedence) [4]
F23D 14/42	2-Punkt Untergruppe	. . for cutting (F23D 14/44 takes precedence) [4]
F23D 14/44	2-Punkt Untergruppe	. . for use under water [4]
F23D 14/46	1-Punkt Untergruppe	. Details [4]
F23D 14/48	2-Punkt Untergruppe	. . Nozzles (for spraying or coating B05B) [4]
F23D 14/50	3-Punkt Untergruppe	. . . Cleaning devices therefor [4]
F23D 14/52	3-Punkt Untergruppe	. . . for torches; for blow-pipes [4]
F23D 14/54	4-Punkt Untergruppe	. . . . for cutting or welding metal [4]

Symbol	Typ	Titel
F23D 14/56	3-Punkt Untergruppe	. . . for spreading the flame over an area, e.g. for desurfacing of solid material, for surface hardening, for heating workpieces (scarfing by applying flames B23K 7/00) [4]
F23D 14/58	3-Punkt Untergruppe	. . . characterised by the shape or arrangement of the outlet or outlets from the nozzle, e.g. of annular configuration [4]
F23D 14/60	2-Punkt Untergruppe	. . Devices for simultaneous control of gas and combustion air (regulation of combustion in general F23N) [4]
F23D 14/62	2-Punkt Untergruppe	. . Mixing devices; Mixing tubes [4]
F23D 14/64	3-Punkt Untergruppe	. . . with injectors [4]
F23D 14/66	2-Punkt Untergruppe	. . Preheating the combustion air or gas [4]
F23D 14/68	2-Punkt Untergruppe	. . Treating the combustion air or gas, e.g. by filtering, by moistening (in general B01) [4]
F23D 14/70	2-Punkt Untergruppe	. . Baffles or like flow-disturbing devices [4]
F23D 14/72	2-Punkt Untergruppe	. . Safety devices, e.g. operative in case of failure of gas supply (protection or supervision of pipe-line systems F17D 5/00) [4]
F23D 14/74	3-Punkt Untergruppe	. . . Preventing flame lift-off (F23D 14/70 takes precedence) [4]
F23D 14/76	3-Punkt Untergruppe	. . . Protecting flame and burner parts [4]
F23D 14/78	3-Punkt Untergruppe	. . . Cooling burner parts [4]
F23D 14/80	3-Punkt Untergruppe	. . . Selection of a non-toxic gas [4]
F23D 14/82	3-Punkt Untergruppe	. . . Preventing flashback or blowback (F23D 14/70 takes precedence; in gas feed lines A62C 4/02) [4]
F23D 14/84	2-Punkt Untergruppe	. . Flame spreading or otherwise shaping (F23D 14/70 takes precedence) [4]
		Other burners
F23D 17/00	**Hauptgruppe**	**Burners for combustion simultaneously or alternately of gaseous or liquid or pulverulent fuel**
F23D 21/00	**Hauptgruppe**	**Burners not otherwise provided for**
F23D 23/00	**Hauptgruppe**	**Assemblies of two or more burners (gas burners with provision for a retention flame F23D 14/26; arrangement or mounting of burners F23C 5/00; for industrial furnaces F27)**