

CPC COOPERATIVE PATENT CLASSIFICATION

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

LIGHTING; HEATING

F21 LIGHTING (NOTE omitted)

F21V FUNCTIONAL FEATURES OR DETAILS OF LIGHTING DEVICES OR SYSTEMS THEREOF; STRUCTURAL COMBINATIONS OF LIGHTING DEVICES WITH OTHER ARTICLES, NOT OTHERWISE PROVIDED FOR

NOTES

1. Groups [F21V 1/00-F21V 14/00](#) cover aspects related to light emission or distribution. Groups [F21V 15/00-F21V 31/00](#) cover aspects not related to light emission or distribution.
2. Details of non-electric lighting devices or systems are classified in groups [F21V 35/00-F21V 37/00](#) only if a special adaptation related to the use of a non-electric light source is of interest.
3. In this subclass, it is desirable to add the indexing codes of subclasses [F21W](#) and [F21Y](#)

WARNINGS

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:
[F21V 8/00](#) covered by [G02B 6/00](#)
2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

{Aspects related to light emission or distribution}

		3/04	. characterised by materials, surface treatments or coatings
1/00	Shades for light sources {, i.e. lampshades for table, floor, wall or ceiling lamps}	3/049	. . {Patterns or structured surfaces for diffusing light, e.g. frosted surfaces}
1/02	. Frames	3/06	. . characterised by the material
1/04	. . rigid (F21V 1/08 takes precedence)	3/061	. . . {the material being glass}
1/06	. . foldable or collapsible	3/0615 {the material diffusing light, e.g. translucent glass}
1/08	. . adjustable	3/062	. . . {the material being plastics}
1/10	. Rotating shades	3/0625 {the material diffusing light, e.g. translucent plastics}
1/12	. Composite shades {, i.e. shades being made of distinct parts}	3/063	. . . {comprising air or water bubbles, e.g. foamed materials}
1/14	. Covers for frames; Frameless shades	3/08	. . . the material comprising photoluminescent substances
1/143	. . {The cover being attached to a supporting lampshade frame}	3/10	. . characterised by coatings
1/146	. . {Frameless shades}	3/12	. . . the coatings comprising photoluminescent substances
1/16	. . characterised by the material		
1/17	. . . the material comprising photoluminescent substances		
1/18	. . . the material being paper		
1/20	. . . the material being glass	5/00	Refractors for light sources (characterised by cooling arrangements F21V 29/504)
1/22	. . . the material being plastics	5/002	. {using microoptical elements for redirecting or diffusing light}
1/24	. . . the material being metal	5/003	. . {using holograms}
1/26	. Manufacturing shades	5/004	. . {using microlenses}
3/00	Globes; Bowls; Cover glasses (with refracting properties F21V 5/00; with reflecting properties F21V 7/00; characterised by cooling arrangements F21V 29/506)	5/005	. . {using microprisms}
3/02	. characterised by the shape	5/006	. {applied to portable lighting devices}
3/023	. . {Chinese lanterns; Balloons}	5/007	. {Array of lenses or refractors for a cluster of light sources, e.g. for arrangement of multiple light sources in one plane (combination of two or more refractors F21V 5/008)}
3/026	. . . {being inflatable}		

5/008	. {Combination of two or more successive refractors along an optical axis}	7/10	. Construction
5/02	. of prismatic shape (F21V 5/04 takes precedence)	7/16	. . with provision for adjusting the curvature
5/04	. of lens shape	7/18	. . with provision for folding or collapsing
5/041	. . {Ball lenses}	7/22	. characterised by materials, surface treatments or coatings, e.g. dichroic reflectors
5/043	. . {the lens having cylindrical faces, e.g. rod lenses, toric lenses}	7/24	. . characterised by the material
5/045	. . {the lens having discontinuous faces, e.g. Fresnel lenses}	7/26	. . . the material comprising photoluminescent substances
5/046	. . {the lens having a rotationally symmetrical shape about an axis for transmitting light in a direction mainly perpendicular to this axis, e.g. ring or annular lens with light source disposed inside the ring}	7/28	. . characterised by coatings
5/048	. . {the lens being a simple lens adapted to cooperate with a point-like source for emitting mainly in one direction and having an axis coincident with the main light transmission direction, e.g. convergent or divergent lenses, plano-concave or plano-convex lenses}	7/30	. . . the coatings comprising photoluminescent substances
5/06	. Hanging lustres for chandeliers	9/00	Elements for modifying spectral properties, polarisation or intensity of the light emitted, e.g. filters (coloured shades F21V 1/00; elements characterised by cooling arrangements F21V 29/502)
5/08	. producing an asymmetric light distribution	9/02	. for simulating daylight (F21V 9/04 , F21V 9/06 take precedence)
5/10	. comprising photoluminescent material	9/04	. for filtering out infrared radiation (dichroic reflectors F21V 7/22 ; using liquid-filled chambers F21V 9/12)
7/00	Reflectors for light sources (characterised by cooling arrangements F21V 29/505)	9/06	. for filtering out ultraviolet radiation
7/0008	. {providing for indirect lighting}	9/08	. for producing coloured light, e.g. monochromatic; for reducing intensity of light (with provision for controlling the colour F21V 9/40)
7/0016	. . {on lighting devices that also provide for direct lighting, e.g. by means of independent light sources, by splitting of the light beam, by switching between both lighting modes}	9/083	. . {for portable lighting devices}
7/0025	. {Combination of two or more reflectors for a single light source (array of reflectors for a cluster of light sources F21V 7/0083)}	9/12	. . with liquid-filled chambers
7/0033	. . {with successive reflections from one reflector to the next or following}	9/14	. for producing polarised light
7/0041	. . . {for avoiding direct view of the light source or to prevent dazzling}	9/20	. Dichroic filters, i.e. devices operating on the principle of wave interference to pass specific ranges of wavelengths while cancelling others
7/005	. {with an elongated shape to cooperate with linear light sources}	9/30	. Elements containing photoluminescent material distinct from or spaced from the light source (shades F21V 1/17 ; globes, bowls or cover glasses F21V 3/08 , F21V 3/12 ; refractors F21V 5/10 ; reflectors F21V 7/26 , F21V 7/30 ; elements with provision for controlling the spectral properties or intensity F21V 9/40)
7/0058	. {adapted to cooperate with light sources of shapes different from point-like or linear, e.g. circular light sources}	9/32	. . characterised by the arrangement of the photoluminescent material
7/0066	. {specially adapted to cooperate with point like light sources; specially adapted to cooperate with light sources the shape of which is unspecified (F21V 7/16 - F21V 7/30 take precedence)}	9/35	. . . at focal points, e.g. of refractors, lenses, reflectors or arrays of light sources
7/0075	. {for portable lighting devices}	9/38	. . Combination of two or more photoluminescent elements of different materials
7/0083	. {Array of reflectors for a cluster of light sources, e.g. arrangement of multiple light sources in one plane (combination of two or more reflectors F21V 7/0025)}	9/40	. with provision for controlling spectral properties, e.g. colour, or intensity
7/0091	. {using total internal reflection}	9/45	. . by adjustment of photoluminescent elements
7/04	. Optical design	11/00	Screens not covered by groups F21V 1/00, F21V 3/00, F21V 7/00 or F21V 9/00 (characterised by cooling arrangements F21V 29/502)
7/041	. . {with conical or pyramidal surface}	11/02	. using parallel laminae or strips, e.g. of Venetian-blind type (F21V 11/06 takes precedence)
7/043	. . {with cylindrical surface}	11/04	. . adjustable
7/045	. . {with spherical surface}	11/06	. using crossed laminae or strips {, e.g. grid-shaped louvers}; using lattices or honeycombs
7/046	. . {with involute curvature}	11/065	. . {adjustable}
7/048	. . {with facets structure}	11/08	. using diaphragms containing one or more apertures
7/05	. . plane	11/10	. . of iris type
7/06	. . with parabolic curvature	11/12	. . of slot type
7/07	. . with hyperbolic curvature	11/14	. . with many small apertures
7/08	. . with elliptical curvature	11/16	. using sheets without apertures, e.g. fixed
7/09	. . with a combination of different curvatures	11/18	. . movable, e.g. flaps, slides
		11/183	. . . {pivotable}

11/186	. . . {slidable}	15/04	. Resilient mountings, e.g. shock absorbers {(shock absorbing devices of vehicle headlamp housings B60Q 1/0491 ; in general F16F 15/04)}
13/00	Producing particular characteristics or distribution of the light emitted by means of a combination of elements specified in two or more of main groups F21V 1/00 - F21V 11/00 (controlling the distribution of the light emitted by adjustment of elements F21V 14/00)	17/00	Fastening of component parts of lighting devices, e.g. shades, globes, refractors, reflectors, filters, screens, grids or protective cages (of light sources or light holders F21V 19/00)
13/02	. Combinations of only two kinds of elements	17/002	. {with provision for interchangeability, i.e. component parts being especially adapted to be replaced by another part with the same or a different function (F21V 17/10 takes precedence)}
13/04	. . the elements being reflectors and refractors {(for vehicle rear lights F21S 43/40)}	17/005	. {with keying means, i.e. for enabling the assembling of component parts in distinctive positions, e.g. for preventing wrong mounting}
13/045	. . . {for portable lighting devices}	17/007	. {with provision for shipment or storage}
13/06	. . . a reflector being rotatable	17/02	. with provision for adjustment (F21V 17/04 - F21V 17/08 take precedence)
13/08	. . the elements being filters or photoluminescent elements and reflectors	17/04	. the fastening being onto or by the light source
13/10	. . the elements being reflectors and screens	17/06	. the fastening being onto or by the lampholder
13/12	. Combinations of only three kinds of elements	17/08	. onto the supporting or suspending arrangements of the lighting device, e.g. power cords, standards
13/14	. . the elements being filters or photoluminescent elements, reflectors and refractors	17/10	. characterised by specific fastening means or way of fastening (F21V 17/02 - F21V 17/08 take precedence)
14/00	Controlling the distribution of the light emitted by adjustment of elements (reflectors with provision for adjusting the curvature F21V 7/16 ; light filters or the like with provision for controlling the colour or intensity F21V 9/40 ; screens using adjustable parallel laminae or strips F21V 11/04 ; screens using iris-type diaphragms F21V 11/10 ; screens using movable sheets without apertures F21V 11/18 ; adjustable mountings for lighting devices F21V 21/14)	17/101	. . {permanently, e.g. welding, gluing or riveting}
14/003	. {by interposition of elements with electrically controlled variable light transmissivity, e.g. liquid crystal elements or electrochromic devices}	17/102	. . {using gravity or suction}
14/006	. {by means of optical elements, e.g. films, filters or screens, being rolled up around a roller}	17/104	. . {using feather joints, e.g. tongues and grooves, with or without friction}
14/02	. by movement of light sources {(in vehicle head lamps F21S 41/657)}	17/105	. . {using magnets}
14/025	. . {in portable lighting devices}	17/107	. . {using hinge joints}
14/04	. by movement of reflectors {(in vehicle head lamps F21S 41/675)}	17/108	. . {using hook and loop-type fasteners}
14/045	. . {in portable lighting devices}	17/12	. . by screwing
14/06	. by movement of refractors {(in vehicle head lamps F21S 41/635)}	17/14	. . Bayonet-type fastening
14/065	. . {in portable lighting devices}	17/16	. . by deformation of parts; Snap action mounting
14/08	. by movement of the screens {or filters}	17/162	. . . {the parts being subjected to traction or compression, e.g. coil springs}
14/085	. . {in portable lighting devices}	17/164	. . . {the parts being subjected to bending, e.g. snap joints}
{Aspects not related to light emission or distribution, e.g. fittings}		17/166	. . . {the parts being subjected to torsion, e.g. spiral springs}
15/00	Protecting lighting devices from damage (protection from thermal damage F21V 29/00 ; gas-tight or water-tight arrangements F21V 31/00)	17/168	. . . {the parts being resilient rings acting substantially isotropically, e.g. split rings}
15/005	. {Measures against vandalism, stealing or tampering (F21V 15/02 , F21V 15/04 take precedence)}	17/18	. . Latch-type fastening, e.g. with rotary action
15/01	. Housings, e.g. material or assembling of housing parts (F21V 15/02 takes precedence {housings forming signs or letters G09F 13/04 })	17/20	. . by toggle-action levers
15/012	. . {Housings with variable shape or dimensions, e.g. by means of elastically deformable materials or by movement of parts forming telescopic extensions of the housing body}	19/00	Fastening of light sources or lamp holders (fastening electric light source solely by the coupling device H01R 33/00 {; special means for attaching candle to candle holder F21V 35/003 })
15/013	. . {the housing being an extrusion}	19/0005	. {of sources having contact pins, wires or blades, e.g. pinch sealed lamp (F21V 19/001 takes precedence)}
15/015	. . Devices for covering joints between adjacent lighting devices; End coverings	19/001	. {the light sources being semiconductor devices, e.g. LEDs}
15/02	. Cages	19/0015	. . {Fastening arrangements intended to retain light sources}
		19/002	. . . {the fastening means engaging the encapsulation or the packaging of the semiconductor device}
		19/0025	. . . {the fastening means engaging the conductors of the light source, i.e. providing simultaneous fastening of the light sources and their electric connections}
		19/003	. . {Fastening of light source holders, e.g. of circuit boards or substrates holding light sources}

19/0035	. . . {the fastening means being capable of simultaneously attaching of an other part, e.g. a housing portion or an optical component}	21/04	. . Recessed bases
19/004	. . . {by deformation of parts or snap action mountings, e.g. using clips}	21/041	. . . {Mounting arrangements specially adapted for false ceiling panels or partition walls made of plates (F21V 21/047 takes precedence)}
19/0045	. . . {by tongue and groove connections, e.g. dovetail interlocking means fixed by sliding}	21/042 {using clamping means, e.g. for clamping with panel or wall}
19/005	. . . {by permanent fixing means, e.g. gluing, riveting or embedding in a potting compound}	21/043 {actuated by screwing}
19/0055	. . . {by screwing}	21/044 {with elastically deformable elements, e.g. spring tongues}
19/006	. {of point-like light sources, e.g. incandescent or halogen lamps, with screw-threaded or bayonet base (of sources having contact pins, wires or blades F21V 19/0005; of LEDs or sources mounted on printed-circuit board F21V 19/001)}	21/045 {being tensioned by translation of parts, e.g. by pushing or pulling}
19/0065	. . {at least one conductive element acting as a support means, e.g. spring-mounted contact plate in a bayonet base}	21/046 {being tensioned by rotation of parts}
19/007	. . {the support means engaging the vessel of the source}	21/047	. . . {Mounting arrangements with fastening means engaging the inner surface of a hole in a ceiling or wall, e.g. for solid walls or for blind holes}
19/0075	. {of tubular light sources, e.g. ring-shaped fluorescent light sources}	21/048	. . . {Mounting arrangements for fastening lighting devices to false ceiling frameworks}
19/008	. . {of straight tubular light sources, e.g. straight fluorescent tubes, soffit lamps}	21/049	. . . {Mounting arrangements for attaching lighting devices to the ceiling, the lighting devices being recessed in a false or stretched ceiling}
19/0085	. . . {at least one conductive element acting as a support means, e.g. resilient contact blades, piston-like contact}	21/06	. Bases for movable standing lamps; Fixing standards to the bases (F21V 21/08 takes precedence)
19/009	. . . {the support means engaging the vessel of the source}	21/08	. Devices for easy attachment to any desired place, e.g. clip, clamp, magnet
19/0095	. . {of U-shaped tubular light sources, e.g. compact fluorescent tubes}	21/0808	. . {Adhesive means}
19/02	. with provision for adjustment, e.g. for focusing	21/0816	. . {Strap fasteners, e.g. fasteners with a buckle}
19/04	. with provision for changing light source, e.g. turret {(auxiliary devices for cleaning, placing, or removing incandescent lamps H01K 3/32, fluorescent lamps H01J 9/006)}	21/0824	. . {Ground spikes}
19/047	. . {by using spare light sources comprised in or attached to the lighting device and being intended to replace a defect light source by manual mounting}	21/0832	. . {Hook and loop-type fasteners}
19/06	. Fastening incandescent mantles or other incandescent bodies to lamp parts; Suspension devices for incandescent mantles or other incandescent bodies (arrangements of mantles or other incandescent bodies on burners F21V 36/00)	21/084	. . Head fittings
21/00	Supporting, suspending, or attaching arrangements for lighting devices (F21V 17/00, F21V 19/00 take precedence; arrangement of signalling or lighting devices, the mounting or supporting thereof or circuits therefor, for vehicles in general B60Q, stands for supporting apparatus or articles in general F16M 11/00); Hand grips	21/088	. . Clips; Clamps
21/002	. making direct electrical contact, e.g. by piercing (F21V 21/35 takes precedence)	21/0885	. . . {for portable lighting devices}
21/005	. for several lighting devices in an end-to-end arrangement, i.e. light tracks	21/092	. . Suction devices
21/008	. Suspending from a cable or suspension line	21/0925	. . . {for portable lighting devices}
21/02	. Wall, ceiling, or floor bases; Fixing pendants or arms to the bases (F21V 21/08 takes precedence; bases for movable standing lamps F21V 21/06)	21/096	. . Magnetic devices
21/025	. . {Elongated bases having a U-shaped cross section}	21/0965	. . . {for portable lighting devices}
21/03	. . Ceiling bases, e.g. ceiling roses (F21V 21/04 takes precedence)	21/10	. Pendants, arms, or standards; Fixing lighting devices to pendants, arms, or standards (adjustable mounting F21V 21/14; construction of posts not peculiar to use with lighting devices E04H 12/00)
		21/104	. . Pendants
		21/108	. . Arms
		21/112	. . Fixing lighting devices to pendants (F21V 21/002 takes precedence)
		21/116	. . Fixing lighting devices to arms or standards (F21V 21/002 takes precedence)
		21/12	. . capable of being elongated or shortened by the insertion or removal of intermediate pieces
		21/13	. Spring-loaded poles fixed at both ends
		21/14	. Adjustable mountings
		21/145	. . {for portable lighting devices}
		21/15	. . specially adapted for power operation, e.g. by remote control
		21/16	. . using wires or cords
		21/18	. . . operated by springs
		21/20	. . . operated by weights
		21/22	. . telescopic
		21/24	. . Lazy-tongs
		21/26	. . Pivoted arms
		21/28	. . . adjustable in more than one plane
		21/29 employing universal joints
		21/30	. . Pivoted housings or frames
		21/32	. . Flexible tubes

- 21/34 . Supporting elements displaceable along a guiding element [{\(telescopic mounting of lighting devices F21V 21/22\)}](#)
- 21/35 . . with direct electrical contact between the supporting element and electric conductors running along the guiding element
- 21/36 . Hoisting or lowering devices, e.g. for maintenance
- 21/38 . . with a cable
- 21/40 . Hand grips
- 21/403 . . [{\(for operation or dentist lamps\)}](#)
- 21/406 . . [{\(for portable lighting devices\)}](#)
- 23/00 Arrangement of electric circuit elements in or on lighting devices [{\(characterised by cooling arrangements F21V 29/508\)}](#)**
- 23/001 . [{\(the elements being electrical wires or cables\)}](#)
- 23/002 . . [{\(Arrangements of cables or conductors inside a lighting device, e.g. means for guiding along parts of the housing or in a pivoting arm\)}](#)
- 23/003 . [{\(the elements being electronics drivers or controllers for operating the light source, e.g. for a LED array\)}](#)
- 23/004 . . [{\(arranged on a substrate, e.g. a printed circuit board\)}](#)
- 23/005 . . . [{\(the substrate is supporting also the light source\)}](#)
- 23/006 . . . [{\(the substrate being distinct from the light source holder\)}](#)
- 23/007 . . [{\(enclosed in a casing\)}](#)
- 23/008 . . . [{\(the casing being outside the housing of the lighting device\)}](#)
- 23/009 . . . [{\(the casing being inside the housing of the lighting device\)}](#)
- 23/02 . the elements being transformers, impedances [{\(or power supply units, e.g. a transformer with a rectifier\)}](#)
- 23/023 . . [{\(Power supplies in a casing \(F21V 23/003 takes precedence\)\)}](#)
- 23/026 . . [{\(Fastening of transformers or ballasts\)}](#)
- 23/04 . the elements being switches [\(safety devices F21V 25/00\)](#)
- 23/0407 . . [{\(for flashing\)}](#)
- 23/0414 . . [{\(specially adapted to be used with portable lighting devices\)}](#)
- 23/0421 . . . [{\(the switch being part of, or disposed on the tail cap portion thereof\)}](#)
- 23/0428 . . . [{\(the switch being part of, or disposed on the lamp head portion thereof\)}](#)
- 23/0435 . . [{\(activated by remote control means\)}](#)
- 23/0442 . . [{\(activated by means of a sensor, e.g. motion or photodetectors\)}](#)
- 23/045 . . . [{\(the sensor receiving a signal from a remote controller\)}](#)
- 23/0457 . . . [{\(the sensor sensing the operating status of the lighting device, e.g. to detect failure of a light source or to provide feedback to the device\)}](#)
- 23/0464 . . . [{\(the sensor sensing the level of ambient illumination, e.g. dawn or dusk sensors\)}](#)
- 23/0471 . . . [{\(the sensor detecting the proximity, the presence or the movement of an object or a person\)}](#)
- 23/0478 [{\(by means of an image recording device, e.g. a camera\)}](#)
- 23/0485 . . . [{\(the sensor sensing the physical interaction between a user and certain areas located on the lighting device, e.g. a touch sensor\)}](#)
- 23/0492 . . . [{\(the sensor detecting a change in orientation, a movement or an acceleration of the lighting device, e.g. a tilt switch\)}](#)
- 23/06 . the elements being coupling devices [{\(, e.g. connectors\)}](#)
- 25/00 Safety devices structurally associated with lighting devices [\(gas-tight or water-tight arrangements F21V 31/00; in general F16P; protective circuit arrangements per se H02H 7/00\)](#)**
- 25/02 . coming into action when lighting device is disturbed, dismantled, or broken
- 25/04 . . breaking the electric circuit
- 25/06 . . feeding a quenching fluid to the light source
- 25/08 . . cutting the incandescent filament
- 25/10 . coming into action when lighting device is overloaded, e.g. thermal switch
- 25/12 . Flameproof or explosion-proof arrangements
- 25/125 . . [{\(using intumescent material, i.e. using materials which swells up as a result of heat exposure\)}](#)
- 27/00 Cable-stowing arrangements structurally associated with lighting devices, e.g. reels [{\(storing lengths of cable in general B65H; the lighting devices being vehicle headlamps F21S 41/192; the lighting devices being vehicle lights F21S 43/195\)}](#)**
- 27/005 . [{\(for portable lighting devices\)}](#)
- 27/02 . Cable inlets
- 29/00 Protecting lighting devices from thermal damage; Cooling or heating arrangements specially adapted for lighting devices or systems [\(lighting fixtures combined with outlets for air-treatment systems F24F 13/078\)](#)**
- 29/10 . Arrangement of heat-generating components to reduce thermal damage, e.g. by distancing heat-generating components from other components to be protected
- 29/15 . Thermal insulation
- 29/50 . Cooling arrangements [\(air-treatment systems dissipating or using the heat of lighting fixtures F24F 3/056\)](#)
- 29/502 . . characterised by the adaptation for cooling of specific components
- 29/503 . . . of light sources [\(cooling arrangements structurally associated with gas-discharge or vapour-discharge lamps H01J 61/52; cooling arrangements structurally associated with electric incandescent lamps H01K 1/58; cooling arrangements structurally associated with light-emitting diodes H01L 33/64\)](#)
- 29/504 . . . of refractors
- 29/505 . . . of reflectors
- 29/506 . . . of globes, bowls or cover glasses
- 29/507 . . . of means for protecting lighting devices from damage, e.g. housings
- 29/508 . . . of electrical circuits
- 29/51 . . using condensation or evaporation of a fluid, e.g. heat pipes
- 29/52 . . . electrically powered, e.g. refrigeration systems
- 29/54 . . using thermoelectric means, e.g. Peltier elements

- 29/56 . . . using liquid coolants ([F21V 29/51](#) takes precedence)
- 29/57 . . . characterised by control arrangements
- 29/58 . . . characterised by the coolants
- 29/59 . . . {with forced flow of the coolant}
- 29/60 . . . characterised by the use of a forced flow of gas, e.g. air
- 29/61 . . . characterised by control arrangements
- 29/63 . . . using electrically-powered vibrating means; using ionic wind
- 29/65 . . . the gas flowing in a closed circuit
- 29/67 . . . characterised by the arrangement of fans
- 29/673 {the fans being used for intake}
- 29/677 {the fans being used for discharging}
- 29/70 . . . characterised by passive heat-dissipating elements, e.g. heat-sinks
- 29/71 . . . using a combination of separate elements interconnected by heat-conducting means, e.g. with heat pipes or thermally conductive bars between separate heat-sink elements
- 29/713 {in direct thermal and mechanical contact of each other to form a single system}
- 29/717 {using split or remote units thermally interconnected, e.g. by thermally conductive bars or heat pipes}
- 29/73 . . . the elements being adjustable with respect to each other, e.g. hinged
- 29/74 . . . with fins or blades
- 29/745 {the fins or blades being planar and inclined with respect to the joining surface from which the fins or blades extend}
- 29/75 with fins or blades having different shapes, thicknesses or spacing
- 29/76 with essentially identical parallel planar fins or blades, e.g. with comb-like cross-section
- 29/763 {the planes containing the fins or blades having the direction of the light emitting axis}
- 29/767 {the planes containing the fins or blades having directions perpendicular to the light emitting axis}
- 29/77 with essentially identical diverging planar fins or blades, e.g. with fan-like or star-like cross-section
- 29/773 {the planes containing the fins or blades having the direction of the light emitting axis}
- 29/777 {the planes containing the fins or blades having directions perpendicular to the light emitting axis}
- 29/78 with helically or spirally arranged fins or blades
- 29/80 . . . with pins or wires
- 29/81 with pins or wires having different shapes, lengths or spacing
- 29/83 . . . the elements having apertures, ducts or channels, e.g. heat radiation holes
- 29/85 . . . characterised by the material ([liquid coolants F21V 29/56](#))
- 29/86 . . . {Ceramics or glass}
- 29/87 . . . Organic material, e.g. filled polymer composites; Thermo-conductive additives or coatings therefor
- 29/89 . . . Metals
- 29/90 . . . Heating arrangements
- 31/00 Gas-tight or water-tight arrangements**
- 31/005 . . . {Sealing arrangements therefor}
- 31/03 . . . with provision for venting {(for vehicle head lights [F21S 45/33](#); for vehicle rear lights [F21S 41/192](#))}
- 31/04 . . . Provision of filling media
- 33/00 Structural combinations of lighting devices with other articles, not otherwise provided for**
- 33/0004 . . . {Personal or domestic articles}
- 33/0008 . . . {Clothing or clothing accessories, e.g. scarfs, gloves or belts}
- 33/0012 . . . {Furniture ([hospital beds F21V 33/0072](#))}
- 33/0016 {Furnishing for windows and doors ([sunshades F21V 33/006](#))}
- 33/002 {Racks for compact discs or the like}
- 33/0024 . . . {Household or table equipment}
- 33/0028 {Decorative household equipment, e.g. plant holders or food dummies}
- 33/0032 {Paintings, pictures or photographs; Frames therefor}
- 33/0036 {Table-ware or table equipment, e.g. dishes, cutlery or trays}
- 33/004 . . . {Sanitary equipment, e.g. mirrors, showers, toilet seats or paper dispensers}
- 33/0044 . . . {Household appliances, e.g. washing machines or vacuum cleaners}
- 33/0048 . . . {Office articles, e.g. bookmarks, desk lamps with drawers, stands for books or music scores}
- 33/0052 . . . {Audio or video equipment, e.g. televisions, telephones, cameras or computers; Remote control devices therefor}
- 33/0056 {Audio equipment, e.g. music instruments, radios or speakers}
- 33/006 . . . {General building constructions or finishing work for buildings, e.g. roofs, gutters, stairs or floors; Garden equipment; Sunshades or parasols}
- 33/0064 . . . {Health, life-saving or fire-fighting equipment}
- 33/0068 . . . {Medical equipment}
- 33/0072 {Hospital beds}
- 33/0076 . . . {Safety or security signalisation, e.g. smoke or burglar alarms, earthquake detectors; Self-defence devices}
- 33/008 . . . {Leisure, hobby or sport articles, e.g. toys, games or first-aid kits; Hand tools; Toolboxes}
- 33/0084 . . . {Hand tools; Toolboxes}
- 33/0088 . . . {Ventilating systems ([lighting fixtures combined with outlets for air treatment systems F24F 13/078](#))}
- 33/0092 . . . {with heating or cooling devices}
- 33/0096 . . . {Fans, e.g. ceiling fans ([forced cooling of lighting devices characterised by the arrangement of fans F21V 29/67](#))}
- 35/00 Candle holders**
- 35/003 . . . {Special means for attaching the candle to the candle holder}
- 35/006 . . . {Drop catchers; Shade holders}
- 36/00 Arrangements of mantles or other incandescent bodies on burners**
- 36/02 . . . in ceiling lamps
- 37/00 Details of lighting devices employing combustion as light source, not otherwise provided for**
- 37/0004 . . . {using liquid fuel}

- 37/0008 . . {Fuel containers}
- 37/0012 . . . {Filling or level checking}
- 37/0016 . . . {Fastening of the container to other parts of the lamp}
- 37/002 . . {Wicks}
- 37/0025 . . . {vegetal ([F21V 37/0033](#) takes precedence)}
- 37/0029 . . . {mineral ([F21V 37/0033](#) takes precedence)}
- 37/0033 . . . {combination of vegetal and mineral}
- 37/0037 . . . {Cleaning devices}
- 37/0041 . . {Fuel supply}
- 37/0045 . . . {using hydrostatic pressure or weights}
- 37/005 . . . {using air or gas pressure}
- 37/0054 . . . {Controlling means, e.g. floaters}
- 37/0058 . . {Reflectors, cover glasses, chimneys; Smoke-removing devices; Preheaters}
- 37/0062 . . . {Reflectors}
- 37/0066 . . . {Chimneys}
- 37/007 . . . {Globs}
- 37/0075 . . {Fastening or safety devices for reflectors, cover glasses or chimneys}
- 37/0079 . . . {Fastening of chimneys ([F21V 37/0087](#) takes precedence)}
- 37/0083 . . . {Fastening of cover glasses ([F21V 37/0087](#) takes precedence)}
- 37/0087 . . . {Devices for lifting chimneys or cover glasses}
- 37/0091 . . . {Protections against shocks}
- 37/0095 . {Night lamps; Votive lamps}
- 37/02 . . Special adaptation for protection against draughts {(for lanterns [F21L 19/006](#)); Draft controllers}

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

2200/00 Use of light guides, e.g. fibre optic devices, in lighting devices or systems

- 2200/10 . . of light guides of the optical fibres type
- 2200/13 . . . the light being emitted at the end of the guide
- 2200/15 . . . the light being emitted along at least a portion of the outer surface of the guide
- 2200/17 . . characterised by the admission of light into the guide
- 2200/20 . . of light guides of a generally planar shape
- 2200/30 . . of light guides doped with fluorescent agents
- 2200/40 . . of hollow light guides