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}

1/00 **Shades for light sources {, i.e. lampshades for table, floor, wall or ceiling lamps}**
1/02 . Frames
1/04 . . rigid (F21V 1/08 takes precedence)
1/06 . . foldable or collapsible
1/08 . . adjustable
1/10 . Rotating shades
1/12 . Composite shades {, i.e. shades being made of distinct parts}
1/14 . Covers for frames; Frameless shades
1/143 . . {The cover being attached to a supporting lampshade frame}
1/146 . . {Frameless shades}
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
1/22 . . . the material being plastics
1/24 . . . the material being metal
1/26 . Manufacturing shades

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)
3/02 . characterised by the shape
3/023 . . {Chinese lanterns; Balloons}
3/026 . . . {being inflatable}
3/04 . characterised by materials, surface treatments or coatings
3/049 . . {Patterns or structured surfaces for diffusing light, e.g. frosted surfaces}
3/06 . . characterised by the material
3/061 . . . {the material being glass}
3/0615 . . . . {the material diffusing light, e.g. translucent glass}
3/062 . . . {the material being plastics}
3/0625 . . . . {the material diffusing light, e.g. translucent plastics}
3/063 . . . {comprising air or water bubbles, e.g. foamed materials}
3/08 . . . the material comprising photoluminescent substances
3/10 . . characterised by coatings
3/12 . . . the coatings comprising photoluminescent substances

5/00 **Refractors for light sources** (characterised by cooling arrangements F21V 29/504)
5/002 . {using microoptical elements for redirecting or diffusing light}
5/003 . . {using holograms}
5/004 . . {using microlenses}
5/005 . . {using microprisms}
5/006 . {applied to portable lighting devices}
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)}

5/008 . {Combination of two or more successive refractors along an optical axis}
5/02 . of prismatic shape (F21V 5/04 takes precedence)
5/04 . of lens shape
5/041 . . {Ball lenses}
5/043 . . {the lens having cylindrical faces, e.g. rod lenses, toric lenses}
5/045 . . {the lens having discontinuous faces, e.g. Fresnel lenses}
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}
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}
5/06 . Hanging lustres for chandeliers
5/08 . producing an asymmetric light distribution
5/10 . comprising photoluminescent material

7/00 **Reflectors for light sources** (characterised by cooling arrangements F21V 29/505)
7/0008 . {providing for indirect lighting}
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}
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)}
7/0033 . . {with successive reflections from one reflector to the next or following}
7/0041 . . . {for avoiding direct view of the light source or to prevent dazzling}
7/005 . {with an elongated shape to cooperate with linear light sources}
7/0058 . {adapted to cooperate with light sources of shapes different from point-like or linear, e.g. circular light sources}
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)}
7/0075 . {for portable lighting devices}
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)}
7/0091 . {using total internal reflection}
7/04 . Optical design
7/041 . . {with conical or pyramidal surface}
7/043 . . {with cylindrical surface}
7/045 . . {with spherical surface}
7/046 . . {with involute curvature}
7/048 . . {with facets structure}
7/05 . . plane
7/06 . . with parabolic curvature
7/07 . . with hyperbolic curvature
7/08 . . with elliptical curvature
7/09 . . with a combination of different curvatures
7/10 . Construction
7/16 . . with provision for adjusting the curvature
7/18 . . with provision for folding or collapsing
7/22 . characterised by materials, surface treatments or coatings, e.g. dichroic reflectors
7/24 . . characterised by the material
7/26 . . . the material comprising photoluminescent substances
7/28 . . characterised by coatings
7/30 . . . the coatings comprising photoluminescent substances

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)
9/02 . for simulating daylight (F21V 9/04, F21V 9/06 take precedence)
9/04 . for filtering out infrared radiation (dichroic reflectors F21V 7/22; using liquid-filled chambers F21V 9/12)
9/06 . for filtering out ultraviolet radiation
9/08 . for producing coloured light, e.g. monochromatic; for reducing intensity of light (with provision for controlling the colour F21V 9/40)
9/083 . . {for portable lighting devices}
9/12 . . with liquid-filled chambers
9/14 . for producing polarised light
9/20 . Dichroic filters, i.e. devices operating on the principle of wave interference to pass specific ranges of wavelengths while cancelling others
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)
9/32 . . characterised by the arrangement of the photoluminescent material
9/35 . . . at focal points, e.g. of refractors, lenses, reflectors or arrays of light sources
9/38 . . Combination of two or more photoluminescent elements of different materials
9/40 . with provision for controlling spectral properties, e.g. colour, or intensity
9/45 . . by adjustment of photoluminescent elements

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)
11/02 . using parallel laminae or strips, e.g. of Venetian-blind type (F21V 11/06 takes precedence)
11/04 . . adjustable
11/06 . using crossed laminae or strips {, e.g. grid-shaped louvers}; using lattices or honeycombs
11/065 . . {adjustable}
11/08 . using diaphragms containing one or more apertures
11/10 . . of iris type
11/12 . . of slot type
11/14 . . with many small apertures
11/16 . using sheets without apertures, e.g. fixed
11/18 . . movable, e.g. flaps, slides
11/183 . . . {pivotable}

11/186 . . . {slidable}

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)

13/02 . Combinations of only two kinds of elements
13/04 . . the elements being reflectors and refractors {(for vehicle rear lights F21S 43/40)}
13/045 . . . {for portable lighting devices}
13/06 . . . a reflector being rotatable
13/08 . . the elements being filters or photoluminescent elements and reflectors
13/10 . . the elements being reflectors and screens
13/12 . Combinations of only three kinds of elements
13/14 . . the elements being filters or photoluminescent elements, reflectors and refractors

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)

14/003 . {by interposition of elements with electrically controlled variable light transmissivity, e.g. liquid crystal elements or electrochromic devices}
14/006 . {by means of optical elements, e.g. films, filters or screens, being rolled up around a roller}
14/02 . by movement of light sources {(in vehicle head lamps F21S 41/657)}
14/025 . . {in portable lighting devices}
14/04 . by movement of reflectors {(in vehicle head lamps F21S 41/675)}
14/045 . . {in portable lighting devices}
14/06 . by movement of refractors {(in vehicle head lamps F21S 41/635)}
14/065 . . {in portable lighting devices}
14/08 . by movement of the screens {or filters}
14/085 . . {in portable lighting devices}

{Aspects not related to light emission or distribution, e.g. fittings}

15/00 Protecting lighting devices from damage (protection from thermal damage F21V 29/00; gas-tight or water-tight arrangements F21V 31/00)

15/005 . {Measures against vandalism, stealing or tampering (F21V 15/02, F21V 15/04 take precedence)}
15/01 . Housings, e.g. material or assembling of housing parts (F21V 15/02 takes precedence {housings forming signs or letters G09F 13/04})
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}
15/013 . . {the housing being an extrusion}
15/015 . . Devices for covering joints between adjacent lighting devices; End coverings
15/02 . Cages
15/04 . Resilient mountings, e.g. shock absorbers {(shock absorbing devices of vehicle headlamp housings B60Q 1/0491; in general F16F 15/04)}

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)

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)}
17/005 . {with keying means, i.e. for enabling the assembling of component parts in distinctive positions, e.g. for preventing wrong mounting}
17/007 . {with provision for shipment or storage}
17/02 . with provision for adjustment (F21V 17/04 - F21V 17/08 take precedence)
17/04 . the fastening being onto or by the light source
17/06 . the fastening being onto or by the lampholder
17/08 . onto the supporting or suspending arrangements of the lighting device, e.g. power cords, standards
17/10 . characterised by specific fastening means or way of fastening (F21V 17/02 - F21V 17/08 take precedence)
17/101 . . {permanently, e.g. welding, gluing or riveting}
17/102 . . {using gravity or suction}
17/104 . . {using feather joints, e.g. tongues and grooves, with or without friction}
17/105 . . {using magnets}
17/107 . . {using hinge joints}
17/108 . . {using hook and loop-type fasteners}
17/12 . . by screwing
17/14 . . Bayonet-type fastening
17/16 . . by deformation of parts; Snap action mounting
17/162 . . . {the parts being subjected to traction or compression, e.g. coil springs}
17/164 . . . {the parts being subjected to bending, e.g. snap joints}
17/166 . . . {the parts being subjected to torsion, e.g. spiral springs}
17/168 . . . {the parts being resilient rings acting substantially isotropically, e.g. split rings}
17/18 . . Latch-type fastening, e.g. with rotary action
17/20 . . by toggle-action levers

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})

19/0005 . {of sources having contact pins, wires or blades, e.g. pinch sealed lamp (F21V 19/001 takes precedence)}
19/001 . {the light sources being semiconductors devices, e.g. LEDs}
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}
19/004 . . . {by deformation of parts or snap action mountings, e.g. using clips}
19/0045 . . . {by tongue and groove connections, e.g. dovetail interlocking means fixed by sliding}
19/005 . . . {by permanent fixing means, e.g. gluing, riveting or embedding in a potting compound}
19/0055 . . . {by screwing}
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)}
19/0065 . . {at least one conductive element acting as a support means, e.g. spring-mounted contact plate in a bayonet base}
19/007 . . {the support means engaging the vessel of the source}
19/0075 . {of tubular light sources, e.g. ring-shaped fluorescent light sources}
19/008 . . {of straight tubular light sources, e.g. straight fluorescent tubes, soffit lamps}
19/0085 . . . {at least one conductive element acting as a support means, e.g. resilient contact blades, piston-like contact}
19/009 . . . {the support means engaging the vessel of the source}
19/0095 . . {of U-shaped tubular light sources, e.g. compact fluorescent tubes}
19/02 . with provision for adjustment, e.g. for focusing
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)}
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}
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)

21/00 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**

21/002 . making direct electrical contact, e.g. by piercing (F21V 21/35 takes precedence)
21/005 . for several lighting devices in an end-to-end arrangement, i.e. light tracks
21/008 . Suspending from a cable or suspension line
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)
21/025 . . {Elongated bases having a U-shaped cross section}
21/03 . . Ceiling bases, e.g. ceiling roses (F21V 21/04 takes precedence)
21/04 . . Recessed bases
21/041 . . . {Mounting arrangements specially adapted for false ceiling panels or partition walls made of plates (F21V 21/047 takes precedence)}
21/042 . . . . {using clamping means, e.g. for clamping with panel or wall}
21/043 . . . . . {actuated by screwing}
21/044 . . . . . {with elastically deformable elements, e.g. spring tongues}
21/045 . . . . . {being tensioned by translation of parts, e.g. by pushing or pulling}
21/046 . . . . . {being tensioned by rotation of parts}
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}
21/048 . . . {Mounting arrangements for fastening lighting devices to false ceiling frameworks}
21/049 . . . {Mounting arrangements for attaching lighting devices to the ceiling, the lighting devices being recessed in a false or stretched ceiling}
21/06 . Bases for movable standing lamps; Fixing standards to the bases (F21V 21/08 takes precedence)
21/08 . Devices for easy attachment to any desired place, e.g. clip, clamp, magnet
21/0808 . . {Adhesive means}
21/0816 . . {Strap fasteners, e.g. fasteners with a buckle}
21/0824 . . {Ground spikes}
21/0832 . . {Hook and loop-type fasteners}
21/084 . . Head fittings
21/088 . . Clips; Clamps
21/0885 . . . {for portable lighting devices}
21/092 . . Suction devices
21/0925 . . . {for portable lighting devices}
21/096 . . Magnetic devices
21/0965 . . . {for portable lighting devices}
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, dismounted, 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