

# 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](#))**

##### WARNING

Groups [F21V 3/00](#) - [F21V 3/049](#) are incomplete pending reclassification of documents from group [F21L 15/02](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 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
- WARNING**
- Group [F21V 3/08](#) is incomplete pending reclassification of documents from group [F21L 15/02](#).
- All groups listed in this Warning should be considered in order to perform a complete search.

- 3/10 . . characterised by coatings
- 3/12 . . . the coatings comprising photoluminescent substances

**WARNING**

Group [F21V 3/12](#) is incomplete pending reclassification of documents from group [F21L 15/02](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 5/00 Refractors for light sources (characterised by cooling arrangements [F21V 29/504](#))**

**WARNING**

Group [F21V 5/00](#) is incomplete pending reclassification of documents from group [F21L 15/02](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 5/002 . {using microoptical elements for redirecting or diffusing light}

**WARNING**

Group [F21V 5/002](#) is incomplete pending reclassification of documents from group [F21L 15/02](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 5/003 . . {using holograms}

**WARNING**

Group [F21V 5/003](#) is incomplete pending reclassification of documents from group [F21L 15/02](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 5/004 . . {using microlenses}

**WARNING**

Group [F21V 5/004](#) is incomplete pending reclassification of documents from group [F21L 15/02](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 5/005 . . {using microprisms}

**WARNING**

Group [F21V 5/005](#) is incomplete pending reclassification of documents from group [F21L 15/02](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 5/006 . {applied to portable lighting devices}

**WARNING**

Group [F21V 5/006](#) is incomplete pending reclassification of documents from group [F21L 15/02](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 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](#))}

**WARNING**

Group [F21V 5/007](#) is incomplete pending reclassification of documents from group [F21L 15/02](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 5/008 . {Combination of two or more successive refractors along an optical axis}

**WARNING**

Group [F21V 5/008](#) is incomplete pending reclassification of documents from group [F21L 15/02](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 5/02 . of prismatic shape ([F21V 5/04](#) takes precedence)

**WARNING**

Group [F21V 5/02](#) is incomplete pending reclassification of documents from group [F21L 15/02](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 5/04 . of lens shape

**WARNING**

Group [F21V 5/04](#) is incomplete pending reclassification of documents from group [F21L 15/02](#).

All groups listed in this Warning should be considered in order to perform a complete search.

5/041 . . {Ball lenses}

**WARNING**

Group [F21V 5/041](#) is incomplete pending reclassification of documents from group [F21L 15/02](#).

All groups listed in this Warning should be considered in order to perform a complete search.

5/043 . . {the lens having cylindrical faces, e.g. rod lenses, toric lenses}

**WARNING**

Group [F21V 5/043](#) is incomplete pending reclassification of documents from group [F21L 15/02](#).

All groups listed in this Warning should be considered in order to perform a complete search.

5/045 . . {the lens having discontinuous faces, e.g. Fresnel lenses}

**WARNING**

Group [F21V 5/045](#) is incomplete pending reclassification of documents from group [F21L 15/02](#).

All groups listed in this Warning should be considered in order to perform a complete search.

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}

**WARNING**

Group [F21V 5/046](#) is incomplete pending reclassification of documents from group [F21L 15/02](#).

All groups listed in this Warning should be considered in order to perform a complete search.

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}

**WARNING**

Group [F21V 5/048](#) is incomplete pending reclassification of documents from group [F21L 15/02](#).

All groups listed in this Warning should be considered in order to perform a complete search.

5/06 . Hanging lustres for chandeliers

**WARNING**

Group [F21V 5/06](#) is incomplete pending reclassification of documents from group [F21L 15/02](#).

All groups listed in this Warning should be considered in order to perform a complete search.

5/08 . producing an asymmetric light distribution

**WARNING**

Group [F21V 5/08](#) is incomplete pending reclassification of documents from group [F21L 15/02](#).

All groups listed in this Warning should be considered in order to perform a complete search.

5/10 . comprising photoluminescent material

7/00 **Reflectors for light sources** (characterised by cooling arrangements [F21V 29/505](#))**WARNING**

Group [F21V 7/00](#) is incomplete pending reclassification of documents from group [F21L 15/02](#).

All groups listed in this Warning should be considered in order to perform a complete search.

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

**WARNING**

Group [F21V 7/22](#) is incomplete pending reclassification of documents from group [F21L 15/02](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 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 ultra-violet radiation
- 9/08 . for producing coloured light, e.g. monochromatic; for reducing intensity of light ([with provision for controlling the colour F21V 9/40](#))

**WARNING**

Group [F21V 9/08](#) is incomplete pending reclassification of documents from group [F21L 15/04](#).

Groups [F21V 9/08](#) and [F21L 15/04](#) should be considered in order to perform a complete search.

- 9/083 . . {for portable lighting devices}

**WARNING**

Group [F21V 9/083](#) is incomplete pending reclassification of documents from group [F21L 15/04](#).

Groups [F21L 15/04](#) and [F21V 9/083](#) should be considered in order to perform a complete search.

- 9/12 . . with liquid-filled chambers

**WARNING**

Group [F21V 9/12](#) is incomplete pending reclassification of documents from group [F21L 15/04](#).

Groups [F21L 15/04](#) and [F21V 9/12](#) should be considered in order to perform a complete search.

- 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

**WARNING**

Group [F21V 9/40](#) is incomplete pending reclassification of documents from group [F21L 15/04](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 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](#))**

**WARNING**

Groups [F21V 11/00](#) - [F21V 11/186](#) are incomplete pending reclassification of documents from group [F21L 15/04](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 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](#))

**WARNING**

Groups [F21V 13/00](#) - [F21V 13/14](#) are incomplete pending reclassification of documents from group [F21L 15/02](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 13/02 . Combinations of only two kinds of elements

**WARNING**

Group [F21V 13/02](#) is incomplete pending reclassification of documents from group [F21L 15/02](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 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

**WARNING**

Group [F21V 13/08](#) is incomplete pending reclassification of documents from group [F21L 15/02](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 13/10 . . the elements being reflectors and screens
- 13/12 . Combinations of only three kinds of elements

**WARNING**

Group [F21V 13/12](#) is incomplete pending reclassification of documents from group [F21L 15/02](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 13/14 . . the elements being filters or photoluminescent elements, reflectors and refractors

**WARNING**

Group [F21V 13/14](#) is incomplete pending reclassification of documents from group [F21L 15/02](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 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}

**WARNING**

Group [F21V 14/025](#) is incomplete pending reclassification of documents from group [F21L 15/02](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 14/04 . by movement of reflectors {(in vehicle head lamps [F21S 41/675](#))}
- 14/045 . . {in portable lighting devices}

**WARNING**

Group [F21V 14/045](#) is incomplete pending reclassification of documents from group [F21L 15/02](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 14/06 . by movement of refractors {(in vehicle head lamps [F21S 41/635](#))}
- 14/065 . . {in portable lighting devices}

**WARNING**

Group [F21V 14/065](#) is incomplete pending reclassification of documents from group [F21L 15/02](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 14/08 . by movement of the screens {or filters}
- 14/085 . . {in portable lighting devices}

**WARNING**

Group [F21V 14/085](#) is incomplete pending reclassification of documents from group [F21L 15/04](#).

All groups listed in this Warning should be considered in order to perform a complete search.

**{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 (in general [F16F 15/04](#) {shock absorbing devices of vehicle headlamp housings [B60Q 1/0491](#) })
- 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](#) })

**WARNING**

Groups [F21V 19/00](#) - [F21V 19/04](#) are incomplete pending reclassification of documents from group [F21L 15/06](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 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 semiconductor 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

**WARNING**

Groups [F21V 21/08](#) - [F21V 21/0965](#) are incomplete pending reclassification of documents from groups [F21L 15/08](#), [F21L 15/10](#) and [F21L 15/14](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 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

**WARNING**

Groups [F21V 21/14](#) - [F21V 21/32](#) are incomplete pending reclassification of documents from group [F21L 15/08](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 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](#))}

**WARNING**

Groups [F21V 23/00](#) - [F21V 23/06](#) are incomplete pending reclassification of documents from group [F21L 15/06](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 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****WARNING**

Groups [F21V 35/00](#) - [F21V 35/006](#) are incomplete pending reclassification of documents from group [F21L 25/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 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; Night lamps; Votive lamps**

**WARNING**

Groups [F21V 37/00](#) - [F21V 37/02](#) are incomplete pending reclassification of documents from group [F21L 25/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 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