

SECTION F — MECHANICAL ENGINEERING; LIGHTING; HEATING; WEAPONS; BLASTING

F21 LIGHTING

F21V FUNCTIONAL FEATURES OR DETAILS OF LIGHTING DEVICES OR SYSTEMS THEREOF; STRUCTURAL COMBINATIONS OF LIGHTING DEVICES WITH OTHER ARTICLES, NOT OTHERWISE PROVIDED FOR [1, 7]

Note(s) [2009.01]

1. Groups F21V 1/00-F21V 14/00 cover details of those parts involved in light emission or distribution. Groups F21V 15/00-F21V 31/00 cover details of those parts not so involved.
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.

Subclass index

DETAILS OF PARTS INVOLVED IN LIGHT EMISSION OR DISTRIBUTION

Shades; globes; refractors; reflectors.....	1/00, 3/00, 5/00, 7/00
Light guides.....	8/00
Light filters.....	9/00
Other screens.....	11/00
Combinations of elements.....	13/00
Changing characteristics or distribution of the light.....	14/00

DETAILS OF PARTS NOT INVOLVED IN LIGHT EMISSION OR DISTRIBUTION

Fastening.....	17/00, 19/00
Arrangements for supporting or suspending.....	21/00
Arrangements of electric circuit elements.....	23/00
Cable stowing.....	27/00
Protection; safety; cooling; tightness.....	15/00, 25/00, 29/00, 31/00
Combinations with other articles.....	33/00
Candle holders.....	35/00
Arrangements of mantles or burners.....	36/00
Details of combustion lighting.....	37/00

SUBJECT MATTER NOT PROVIDED FOR IN OTHER GROUPS OF THIS SUBCLASS.....99/00

1/00 Shades for light sources

- 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
- 1/14 • Covers for frames; Frameless shades
- 1/16 • • characterised by the material
- 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)

- 3/02 • characterised by the shape
- 3/04 • characterised by the material; characterised by surface treatments or coatings

5/00 Refractors for light sources

- 5/02 • of prismatic shape (F21V 5/04 takes precedence)
- 5/04 • of lens shape
- 5/06 • Hanging lustres for chandeliers
- 5/08 • producing an asymmetric light distribution [1, 7]

7/00 Reflectors for light sources

- 7/04 • Optical design (F21V 7/22 takes precedence) [1, 7]
- 7/05 • • plane [1, 7]
- 7/06 • • with parabolic curvature [1, 7]
- 7/07 • • with hyperbolic curvature [1, 7]
- 7/08 • • with elliptical curvature [1, 7]
- 7/09 • • with a combination of different curvatures [1, 7]
- 7/10 • Construction (F21V 7/22 takes precedence) [1, 7]
- 7/16 • • with provision for adjusting the curvature [1, 7]
- 7/18 • • with provision for folding or collapsing [1, 7]
- 7/20 • • specially adapted for facilitating cooling, e.g. with fins [1, 7]
- 7/22 • characterised by the material; characterised by surface treatments or coatings

- 8/00 Use of light guides, e.g. fibre optic devices, in lighting devices or systems** (light guides per se, structural details of arrangements with other optical elements G02B 6/00) [4]
- 9/00 Light filters** (coloured shades F21V 1/00); **Selection of luminescent materials for light screens** (luminescent materials per se C09K 11/00; electroluminescent light sources per se H05B 33/00)
- 9/02 • for simulating daylight (F21V 9/04, F21V 9/06, F21V 9/16 take precedence)
 - 9/04 • for filtering out infra-red radiation (using liquid-filled chambers F21V 9/12)
 - 9/06 • for filtering out ultra-violet radiation (F21V 9/16 takes precedence)
 - 9/08 • for producing coloured light, e.g. monochromatic; for reducing intensity of light (F21V 9/16 takes precedence)
 - 9/10 • • with provision for variation of the colour or intensity (F21V 9/12 takes precedence)
 - 9/12 • • with liquid-filled chambers
 - 9/14 • for producing polarised light
 - 9/16 • Selection of luminescent materials for light screens
- 11/00 Screens not covered by groups F21V 1/00, F21V 3/00, F21V 7/00 or F21V 9/00**
- 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; using lattices or honeycombs
 - 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 (F21V 11/02, F21V 11/06 take precedence)
 - 11/18 • • movable, e.g. flaps, slides
- 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** (changing the characteristics or distribution of the light emitted by adjustment of parts F21V 14/00) [1, 7]
- 13/02 • Combinations of only two kinds of elements
 - 13/04 • • the elements being reflectors and refractors
 - 13/06 • • • a reflector being rotatable
 - 13/08 • • the elements being reflectors and filters
 - 13/10 • • the elements being reflectors and screens
 - 13/12 • Combinations of only three kinds of elements
 - 13/14 • • the elements being reflectors, refractors, and filters
- 14/00 Changing the characteristics or distribution of the light emitted by adjustment of parts** (reflectors with provision for adjusting the curvature F21V 7/16; light filters with provision for variation of colour or intensity F21V 9/10; screens using iris-type diaphragms F21V 11/10; adjustable mountings for lighting devices F21V 21/14) [7]
- 14/02 • by movement of light sources [7]
 - 14/04 • by movement of reflectors [7]
 - 14/06 • by movement of refractors [7]
 - 14/08 • by movement of screens [7]
- 15/00 Protecting lighting devices from damage** (cooling or heating arrangements F21V 29/00; gas-tight or water-tight arrangements F21V 31/00)
- 15/01 • Housings, e.g. material or assembling of housing parts (F21V 15/02 takes precedence) [7]
 - 15/015 • • Devices for covering joints between adjacent lighting devices; End coverings [7]
 - 15/02 • Cages
 - 15/04 • Resilient mountings, e.g. shock-absorbers
 - 15/06 • Thermal insulation [7]
- 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; gas-tight or water-tight arrangements F21V 31/00)
- 17/02 • with provision for adjustment (F21V 17/04-F21V 17/08 take precedence; changing the characteristics or distribution of the light emitted by adjustment of parts F21V 14/00) [1, 7]
 - 17/04 • onto or by the light source
 - 17/06 • onto or by the lamp holder
 - 17/08 • onto the supporting or suspending arrangements of the lighting device, e.g. power cords, standards [7]
 - 17/10 • characterised by specific fastening means or way of fastening (F21V 17/02-F21V 17/08 take precedence) [7]
 - 17/12 • • by screwing [7]
 - 17/14 • • Bayonet-type fastening [7]
 - 17/16 • • by deformation of parts of the lighting device; Snap action mounting [7]
 - 17/18 • • Latch-type fastening, e.g. with rotary action [7]
 - 17/20 • • by toggle-action levers [7]
- 19/00 Fastening of light sources or lamp holders** (fastening electric light source solely by the coupling device H01R 33/00)
- 19/02 • with provision for adjustment, e.g. for focusing (changing the characteristics or distribution of the light emitted by adjustment of parts F21V 14/00) [1, 7]
 - 19/04 • with provision for changing light source, e.g. turret
 - 19/06 • Fastening incandescent mantles or other incandescent bodies to lamp parts; Suspension devices for incandescent mantles or other incandescent bodies [1, 7]
- 21/00 Supporting, suspending, or attaching arrangements for lighting devices** (F21V 17/00, F21V 19/00 take precedence); **Hand grips** [1, 7]
- 21/002 • making direct electrical contact, e.g. by piercing (F21V 21/35 takes precedence) [7]
 - 21/005 • for several lighting devices in an end-to-end arrangement, i.e. light tracks [7]
 - 21/008 • Suspending from a cable or suspension line [7]
 - 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)
 - 21/03 • • Ceiling bases, e.g. ceiling roses (F21V 21/04 takes precedence) [7]
 - 21/04 • • Recessed bases
 - 21/06 • Bases for movable standing lamps; Fixing standards to the bases (F21V 21/08 takes precedence)
 - 21/08 • Devices for easy attachment to a desired place
 - 21/084 • • Head fittings (for medical purposes A61B 1/06) [7]
 - 21/088 • • Clips; Clamps [7]
 - 21/092 • • Suction devices [7]
 - 21/096 • • Magnetic devices [7]

21/10	<ul style="list-style-type: none"> • Pendants, arms or standards; Fixing lighting devices to pendants, arms or standards (adjustable mounting F21V 21/14) 	25/00	Safety devices structurally associated with lighting devices (gas-tight or water-tight arrangements F21V 31/00)
21/104	<ul style="list-style-type: none"> • • Pendants [7] 	25/02	<ul style="list-style-type: none"> • coming into action when lighting device is disturbed, dismantled, or broken
21/108	<ul style="list-style-type: none"> • • Arms [7] 	25/04	<ul style="list-style-type: none"> • • breaking the electric circuit
21/112	<ul style="list-style-type: none"> • • Fixing lighting devices to pendants (F21V 21/002 takes precedence) [7] 	25/06	<ul style="list-style-type: none"> • • feeding a quenching fluid to the light source
21/116	<ul style="list-style-type: none"> • • Fixing lighting devices to arms or standards (F21V 21/002 takes precedence) [7] 	25/08	<ul style="list-style-type: none"> • • cutting the incandescent filament
21/12	<ul style="list-style-type: none"> • • capable of being elongated or shortened by the insertion or removal of intermediate pieces 	25/10	<ul style="list-style-type: none"> • coming into action when lighting device is overloaded, e.g. thermal switch
21/13	<ul style="list-style-type: none"> • Spring-loaded poles fixed at both ends [7] 	25/12	<ul style="list-style-type: none"> • Flameproof or explosion-proof arrangements
21/14	<ul style="list-style-type: none"> • Adjustable mountings 	27/00	Cable-stowing arrangements structurally associated with lighting devices, e.g. reels
21/15	<ul style="list-style-type: none"> • • specially adapted for power operation, e.g. by remote control [7] 	27/02	<ul style="list-style-type: none"> • Cable inlets [7]
21/16	<ul style="list-style-type: none"> • • using wires or cords 	29/00	Cooling or heating arrangements (reflectors specially adapted for cooling F21V 7/20; cooling of air-treatment systems with air-flow over lighting fixtures F24F 3/056; lighting fixtures combined with outlets for air-treatment systems F24F 13/078; cooling of projectors G03B 21/16) [1, 7]
21/18	<ul style="list-style-type: none"> • • • operated by springs 	29/02	<ul style="list-style-type: none"> • Cooling by forcing air over or around the light source (cooling arrangements structurally associated with electric lamps H01J 61/52, H01K 1/58) [7]
21/20	<ul style="list-style-type: none"> • • • operated by weights 	31/00	Gas-tight or water-tight arrangements
21/22	<ul style="list-style-type: none"> • • telescopic 	31/03	<ul style="list-style-type: none"> • with provision for venting [7]
21/24	<ul style="list-style-type: none"> • • Lazy-tongs 	31/04	<ul style="list-style-type: none"> • Provision of filling media (safety devices F21V 25/00; cooling arrangements F21V 29/00)
21/26	<ul style="list-style-type: none"> • • Pivoted arms 	33/00	Structural combinations of lighting devices with other articles, not otherwise provided for [1, 7]
21/28	<ul style="list-style-type: none"> • • • adjustable in more than one plane 	35/00	Candle holders
21/29	<ul style="list-style-type: none"> • • • employing universal joints 	36/00	Arrangements of mantles or other incandescent bodies on burners (attaching to lamp parts F21V 19/06)
21/30	<ul style="list-style-type: none"> • • Pivoted housings or frames 	36/02	<ul style="list-style-type: none"> • in ceiling lamps
21/32	<ul style="list-style-type: none"> • • Flexible tubes 	37/00	Details of lighting devices employing combustion as light source, not otherwise provided for [1, 7]
21/34	<ul style="list-style-type: none"> • Supporting elements displaceable along a guiding element 	37/02	<ul style="list-style-type: none"> • Special adaptation for protection against draughts [7]
21/35	<ul style="list-style-type: none"> • • with direct electrical contact between the supporting element and electric conductors running along the guiding element [7] 	99/00	Subject matter not provided for in other groups of this subclass [2006.01]
21/36	<ul style="list-style-type: none"> • Hoisting or lowering devices, e.g. for maintenance (F21V 21/14 takes precedence) 		
21/38	<ul style="list-style-type: none"> • • with a cable 		
21/40	<ul style="list-style-type: none"> • Hand grips [7] 		
23/00	Arrangement of electric circuit elements in or on lighting devices		
23/02	<ul style="list-style-type: none"> • the elements being transformers or impedances 		
23/04	<ul style="list-style-type: none"> • the elements being switches (safety devices F21V 25/00) 		
23/06	<ul style="list-style-type: none"> • the elements being coupling devices 		