CPC COOPERATIVE PATENT CLASSIFICATION

B PERFORMING OPERATIONS; TRANSPORTING

(NOTES omitted)

TRANSPORTING

B60 VEHICLES IN GENERAL

(NOTE omitted)

B60Q ARRANGEMENT OF SIGNALLING OR LIGHTING DEVICES, THE MOUNTING OR SUPPORTING THEREOF OR CIRCUITS THEREFOR, FOR VEHICLES IN GENERAL

NOTES

1. This subclass also covers the operation and control of lighting devices, for example:
   • arrangement or adaptation of lighting switches or signal-initiating means for vehicles.
   • control of lighting devices in relation to the vehicle as a whole, e.g. for levelling, swivelling or aiming.
2. This subclass does not cover optical, mechanical, thermal or electrical arrangement of elements within lighting devices, which are covered by groups F21S 41/00 – F21S 45/00.
3. Attention is drawn to the Note following the title of class B60.
4. Attention is drawn to the following places:
5. B60K 28/00 Safety devices, e.g. sleeping driver
   B60R 25/00 Anti-theft
   B62D Driving assistance
   B62D 15/02 Steering aids
   B60K 31/0008 Cruise control
   G01S Infrared night vision
   G01S 13/031 Anti-collision
   G05D 1/00 Automatic pilot
   G06K 9/00 Pattern recognition
   G06T 3/00 Image transformation
   G06T 5/00 Image enhancement
   G06T 7/00 Image analysis
   G08B 21/00 Alarms in general
   G08G Traffic control
   G08G 1/16 Anti-collision systems
   H04N Television systems

WARNING

The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:

B60Q 1/128 covered by B60Q 1/124
B60Q 1/132 covered by B60Q 1/124
B60Q 1/136 covered by B60Q 1/124

1/00 Arrangements or adaptations of optical signalling or lighting devices (for lighting vehicle interior B60Q 3/00; circuit arrangements for electric light sources in general H05B 37/00)

1/0005 \{ Devices preventing the lights from becoming dirty or damaged (protecting lighting devices from damage in general F21V 15/00), e.g. protection grids (fastening of grids or protective cages in general F21V 17/00), cleaning by air flow (windshield wipers for cleaning optical devices of vehicles B60S 1/04) \}

1/0011 \{ with light guides for distributing the light between several lighting or signalling devices (using light guides inside a single device F21S 8/00, light guides per se G02B 6/0001) \}

1/0017 \{ Devices integrating an element dedicated to another function \}

1/0023 \{ the element being a sensor, e.g. distance sensor, camera \}

1/0029 \{ Spatial arrangement \}

1/0035 \{ relative to the vehicle \}

1/0041 \{ of several lamps in relation to each other \}

1/0047 \{ Signalling unit mounted on a headlamp unit \}

1/0052 \{ concentric \}

1/0058 \{ Stacked, i.e. one lamp located behind the other in the optical axis direction \}
environments the way ahead or to illuminate other areas of way or

{ Details of electrical connections ( B60Q 1/305, F21S 43/195)

{ mounted on the steering wheel

{ Arrangement of electronic circuits separated from the light source ( e.g. mounting of housings for starter circuits for discharge lamps, circuits per se H05B, arrangements being part of the light source holder F21V 17/06, F21S 41/192, F21S 43/195)

{ the devices being primarily intended to illuminate the way ahead or to illuminate other areas of way or environments

{ the devices being headlights

{ built into the vehicle body, e.g. details concerning the mounting of the headlamps on the vehicle body ( B60Q 1/0491, B60Q 1/05 take precedence, integrated front ends B62D 25/00)

{ the housing being mounted on the vehicle body using rails

{ the housing being swivel mounted on the vehicle body

{ the housing being fastened onto the vehicle body using screws ( adjustable headlamp by rotation of a screw B60Q 1/0683)

{ the housing being fastened onto the vehicle body using means other than screws

{ with provision for adjusting the alignment of the headlamp housing with respect to the vehicle body ( adjusting the light beam B60Q 1/06)

{ the front cover being directly mounted onto the vehicle body ( mounting the cover on the housing F21S 41/50)

{ with arrangement for sealing the headlamp with respect to the vehicle body, or for concealing gaps between the headlamp and the vehicle body

{ with provisions for pre-mounting, for temporary holding the headlamp before or during final mounting

{ mounted on a bracket, e.g. details concerning the mounting of the lamps on the vehicle body

{ Shock absorbing devices therefor ( resilient mounting of lighting devices in general F21V 15/04; shock absorbing devices in general F16F 15/04)

{ retractable

{ adjustable, e.g. remotely controlled from inside vehicle ( B60Q 1/05 takes precedence ; controlling the distribution of the light emitted by adjustment of elements F21V 14/00)

{ by fluid means

{ by mechanical means

{ Adjustable by rotation of a screw

{ using a position indicator mounted on the headlight and permanently attached thereto

{ comprising a flexible element, e.g. chain

{ by electrical means ( including means to transmit the movements, e.g. shafts or joints

{ automatically

{ due to special conditions, e.g. adverse weather, type of road, badly illuminated road signs or potential dangers ( B60Q 1/10, B60Q 1/12, B60Q 1/1423 take precedence)

{ due to vehicle inclination, e.g. due to load distribution

{ by fluid means

{ by mechanical means

{ by electrical means ( details of the electric drive components, e.g. motors, shafts, ball joints B60Q 1/076)

{ due to steering position

{ with fluid actuating means

{ with electrical actuating means ( details of the electric drive components, e.g. motors, shafts, ball joints B60Q 1/076)

{ by mechanical means

{ having dimming means ( lighting power supply circuits in general H05B)

{ General lighting circuits comprising dimming circuits ( dimming circuits per se B60Q 1/1415)

{ Dimming circuits

{ Automatic dimming circuits, i.e. switching between high beam and low beam due to change of ambient light or light level in road traffic

{ combined with another condition, e.g. using vehicle recognition from camera images or activation of wipers

{ Actuating means for dimming masks or screens ( adjustable screens per se F21V 11/04)

{ controlled by mechanically actuated switches

{ Hand actuated switches

{ Multifunction switches for dimming headlights and controlling additional devices, e.g. for controlling direction indicating lights

{ controlled by or attached to a single lever, e.g. steering column stalk switches

{ comprising switch controlling means located near the free end of the lever, e.g. press buttons, rotatable rings

{ mounted on the steering wheel

{ Foot actuated switches

{ illuminating the way asymmetrically

{ being additional front lights ( bracket mounted headlights B60Q 1/0483)

{ Fog lights
1/22 . . . for reverse drive
1/24 . . . for lighting other areas than only the way ahead
1/245 . . . {using spotlights adjustable from within the vehicle (adjustable headlights B60Q 1/06)}
1/26 . . . the devices being primarily intended to indicate the vehicle, or parts thereof, or to give signals, to other traffic ({means for the lighting or illuminating of aerials, e.g. for purpose of warning H01Q 1/06})
1/2603 . . . {Attenuation of the light according to ambient luminosity, e.g. for braking or direction indicating lamps}
1/2607 . . . {comprising at least two indicating lamps}
1/2611 . . . {Indicating devices mounted on the roof of the vehicle (flashing light sources in general F21S 10/06)}
1/2615 . . . {mounted on the vehicle body, e.g. with magnets}
1/2619 . . . {built in the vehicle body}
1/2623 . . . {Details of the fastening means}
1/2626 . . . {Screw-nut fasteners}
1/263 . . . {Snap-in fasteners}
1/2634 . . . {Fastening by rotating the device housing about its longitudinal axis, e.g. bayonet fasteners}
1/2638 . . . {Positioning the device housing by indexing means separate from the fastening means, e.g. pins, rails}
1/2642 . . . {with provision for adjusting the alignment of the device housing with respect to the vehicle body}
1/2646 . . . {using dowels or expansible elements}
1/2649 . . . {holding the device before or during final mounting}
1/2653 . . . {with arrangement for sealing the device with respect to the vehicle body, or for concealing gaps between the device and the vehicle body}
1/2657 . . . {mounted on a shaft, e.g. telescopic (lamps on antennas or powerlines F21S 8/085)}
1/2661 . . . {mounted on parts having other functions (on wheels B60Q 1/323)}
1/2665 . . . {on rear-view mirrors (lighting devices for vehicle interior on or for rear-view mirrors B60Q 3/258; rear-view mirror arrangements B60R 1/02; mirror assemblies combined with lamps B60R 1/1207; adaptations or arrangements of mirrors for use on cycles B62J 29/00)}
1/2669 . . . {on door or boot handles (lighting devices for vehicle interior on door handles B60Q 3/267; vehicle doors B60J 5/00; illuminating devices on or for locks or keys E05B 17/10; keyhole finders E05B 15/08)}
1/2673 . . . {on parts worn by the driver, e.g. clothes (professional or sporting clothes with reflecting or luminous means A41D 13/01), gloves (protective gloves with reflecting or luminous means A41D 19/0157), or bags, specially adapted to provide auxiliary vehicle signalling}
1/2676 . . . {Helmets (helmets in general A42B 3/00; helmets with signalling or lighting devices A42B 3/0433)}
1/268 . . . {on windscreens or windows (B60Q 1/302 takes precedence; lighting devices for vehicle interior on or for windows B60Q 3/208; windows or windscreens in general B60J 1/00)}
1/2684 . . . {on wipers or windscreen washers (vehicle wipers B60S 1/04; windscreen washers B60S 1/46)}
1/2688 . . . {on exhaust pipes (exhaust or silencing apparatuses in general F01N)}
1/2692 . . . {retractable lights (retractable headlights B60Q 1/05)}
1/2696 . . . {Mounting of devices using LEDs (fastening of LEDs on printed circuits F21V 19/001)}
1/28 . . . for indicating front of vehicle
1/30 . . . for indicating rear of vehicle, e.g. by means of reflecting surfaces
1/302 . . . {mounted in the vicinity, e.g. in the middle, of a rear window}
1/305 . . . {Indicating devices for towed vehicles}
1/307 . . . {mounted on loading platforms (warning signals on loading platforms B60P 1/4464)}
1/32 . . . for indicating vehicle sides, e.g. clearance lights
1/323 . . . {on or for doors or running boards, e.g. to facilitate access to the vehicle (illumination of door locks E05B 17/10)}
1/326 . . . {on or for wheels}
1/34 . . . for indicating change of drive direction (B60Q 1/22 takes precedence)
1/343 . . . {Manually actuated switching arrangements therefor (hand actuated multifunction switches B60Q 1/1461; B60Q 1/40 takes precedence)}
1/346 . . . {with automatic actuation}
1/36 . . . using movable members, e.g. arms with built-in flashing lamps
1/38 . . . using immovably-mounted light sources, e.g. fixed flashing lamps
1/382 . . . {Electronic temporisation with semiconductor amplification}
1/385 . . . {Electronic temporisation with relay amplification}
1/387 . . . {Mechanical temporisation}
1/40 . . . having {mechanical, electric or electronic} automatic return to inoperative position
1/42 . . . {having mechanical automatic return to inoperative position} due to steering-wheel position, e.g. with roller wheel control
1/425 . . . {using a latching element for resetting a switching element (hand actuated multifunction switches B60Q 1/1461)}
1/44 . . . for indicating braking action or preparation for braking, e.g. by detection of the foot approaching the brake pedal
1/441 . . . {Electric switches operable by the driver's pedals (electric switches in general H01H)}
1/442 . . . {visible on the front side of the vehicle, e.g. for pedestrians}
1/444 . . . {with indication of the braking strength or speed changes, e.g. by changing shape or intensity of the indication (B60Q 1/1407, B60Q 1/442, B60Q 1/447 take precedence)}
1/445 . . . {controlled by inertial devices}
B60Q

1/47 . . . [with indication of the braking strength or speed changes, e.g. by changing the shape or intensity of the indication]
1/48 . . . [specially adapted for vehicles with ABS]
1/46 . . . for giving flashing caution signals during drive, other than signalling change of direction, e.g. flashing the headlights (; hazard lights (flashing lights in general F21S 1/00/6))
1/48 . . . for parking purposes ([warning arrangements in garages E04H 6/42])
1/482 . . . [for locating vehicle in parking lot]
1/484 . . . [for showing outline of vehicle]
1/486 . . . [for indicating that vehicle is in a parked state]
1/488 . . . [for indicating intention to park]
1/50 . . . [for indicating other intentions or conditions, e.g. request for waiting or overtaking]
1/503 . . . [using luminous text displays]
1/506 . . . [for signaling silent vehicles, e.g. for warning that a hybrid or electric vehicle is approaching]
1/52 . . . [for indicating emergencies (braking indicating devices B60Q 1/44, portable emergency signal devices B60Q 7/00)]
1/525 . . . [indicating risk of collision between vehicles or with pedestrians (using video cameras B62D 1/00; radars designed for anti-collision purposes between land vehicles or between land vehicle and fixed obstacles G01S 13/931; control of position or course in two dimensions for land vehicles G05D 1/021; anti-collision systems for road vehicles G08G 1/16)]
1/54 . . . [for indicating speed (outside of the vehicle (automatic vehicle speed controlling fittings including unintended speed signalling devices to the vehicle driver B60K 31/18))]
1/56 . . . [for illuminating registrations or the like (e.g. for licence plates (license plates B60R 13/10))]

3/00 Arrangement of lighting devices for vehicle interiors; Lighting devices specially adapted for vehicle interiors

3/10 . . . for dashboards
3/12 . . . lighting onto the surface to be illuminated
3/14 . . . lighting through the surface to be illuminated
3/16 . . . Circuits; Control arrangements
3/18 . . . [for varying the light intensity]
3/20 . . . for lighting specific fittings of passenger or driving compartments; mounted on specific fittings of passenger or driving compartments (lighting for dashboards B60O 3/10)]
3/208 . . . Sun roofs; Windows
3/217 . . . Doors, e.g. door sills; Steps
3/225 . . . Small compartments, e.g. glove compartments
3/233 . . . Seats; Arm rests; Head rests
3/242 . . . Safety belts; Body harnesses
3/252 . . . Sun visors
3/258 . . . Rear-view mirrors
3/267 . . . Door handles; Hand grips
3/275 . . . Smoking-related fittings, e.g. cigarette lighters or ashtrays
3/283 . . . Steering wheels; Gear levers
3/292 . . . Ignition locks
3/30 . . . for compartments other than passenger or driving compartments, e.g. luggage or engine compartments

3/35 . . . Portable lighting devices
3/40 . . . specially adapted for specific vehicle types
3/41 . . . for mass transit vehicles, e.g. buses
3/43 . . . General lighting
3/44 . . . Spotlighting, e.g. reading lamps
3/46 . . . Emergency lighting, e.g. for escape routes
3/47 . . . Circuits; Control arrangements
3/49 . . . for vehicles with non-fixed roofs, e.g. convertibles
3/50 . . . Mounting arrangements (for compartments other than passenger or driving compartments B60Q 3/30; specially adapted for specific vehicle types B60O 3/40)
3/51 . . . for mounting lighting devices onto vehicle interior, e.g. onto ceiling or floor
3/53 . . . Modular mounting systems, e.g. using tracks, rails or multiple plugs
3/54 . . . Lighting devices embedded in interior trim, e.g. in roof liners
3/56 . . . Lighting devices mounted on elongate supports, e.g. on flexible arms
3/57 . . . Retractable or concealable lighting devices
3/59 . . . Lighting devices mounted in the vehicle interior and adapted for portability
3/60 . . . characterised by optical aspects
3/62 . . . using light guides
3/64 . . . for a single lighting device
3/66 . . . for distributing light among several lighting devices
3/68 . . . using ultra-violet light
3/70 . . . characterised by the purpose
3/72 . . . for preventing the driver from being dazzled
3/74 . . . for overall compartment lighting; for overall compartment lighting in combination with specific lighting, e.g. room lamps with reading lamps (general lighting mounted on specific fittings B60Q 3/20; general lighting for mass transit vehicles B60Q 3/43)
3/745 . . . [using lighting panels or mats, e.g. electro-luminescent panels, LED mats]
3/76 . . . for spotlighting, e.g. reading lamps (spotlighting on or for specific fittings B60Q 3/20; spotlighting in mass transit vehicles B60Q 3/44)
3/78 . . . for generating luminous strips, e.g. for marking trim component edges
3/80 . . . Circuits; Control arrangements (for dashboards B60O 3/16; for mass transit vehicles B60Q 3/47)
3/82 . . . Switches specially adapted for vehicle interior lighting, e.g. switching by tilting the lens
3/85 . . . for manual control of the light, e.g. of colour, orientation or intensity
3/88 . . . Means for plugging to the electrical power supply of the vehicle, e.g. by using cigarette lighter sockets

5/00 Arrangements or adaptations of acoustic signal devices ([sound producing devices in general G10K])

5/001 . . . [Switches therefor]
5/003 . . . [mounted on the steering wheel]
5/005 . . . [automatically acted]
5/006 . . . [indicating risk of collision between vehicles or with pedestrians (using video cameras B62D 1/00; radars designed for anti-collision purposes between land vehicles or between land vehicle and fixed obstacles G01S 13/931); control of position or course in two dimensions for land vehicles G05D 1/021; anti-collision systems for road vehicles G08G 1/16)]

5/008 . . . [for signaling silent vehicles, e.g. for warning that a hybrid or electric vehicle is approaching]

7/00 Arrangement or adaptation of portable emergency signal devices on vehicles
7/005 . . . (Devices without lamps)
7/02 . . . to be attached to overhanging loads or extending parts of vehicle

9/00 Arrangements or adaptations of signal devices not provided for in one of the preceding main groups, e.g. haptic signalling)
9/001 . . . [Alarm devices when the motor is stopped and the lights are on]
9/002 . . . [for parking purposes, e.g. for warning the driver that his vehicle has contacted or is about to contact an obstacle (warning arrangements in garages E04H 6/42)]
9/003 . . . [using physical contactors, e.g. arms that trigger alarm upon contact with obstacle]
9/004 . . . [using wave sensors (radar designed for anti-collision purposes between land vehicles or between land vehicles and fixed obstacles G01S 13/931)]
9/005 . . . [using a video camera]
9/006 . . . [using a distance sensor]
9/007 . . . [providing information about the distance to an obstacle, e.g. varying sound]
9/008 . . . [for anti-collision purposes]

11/00 Arrangements of monitoring devices for devices provided for in groups B60Q 1/00 - B60Q 9/00 (testing of electric installations on road vehicle G01R 31/00)
11/002 . . . [Emergency driving lights in the event of failure of the principal lighting circuit]
11/005 . . . [for lighting devices, e.g. indicating if lamps are burning or not]
11/007 . . . [the lighting devices indicating change of drive direction (change of drive direction indicators B60Q 1/34)]

2200/00 Special features or arrangements of vehicle headlamps
2200/30 . . . Special arrangements for adjusting headlamps, e.g. means for transmitting the movements for adjusting the lamps
2200/32 . . . Ball-joints
2200/34 . . . Deformable parts, i.e. the adjustment is performed by bending or stretching a part
2200/36 . . . Conjunct adjustments, i.e. a mechanical link allows conjoint adjustment of several units
2200/38 . . . Automatic calibration of motor-driven means for adjusting headlamps, i.e. when switching on the headlamps, not during mounting at factories

2300/00 Indexing codes for automatically adjustable headlamps or automatically dimmable headlamps
2300/05 . . . Special features for controlling or switching of the light beam
2300/052 . . . Switching delay, i.e. the beam is not switched or changed instantaneously upon occurrence of a condition change
2300/054 . . . Variable non-standard intensity, i.e. emission of various beam intensities different from standard intensities, e.g. continuous or stepped transitions of intensity
2300/056 . . . Special anti-blinding beams, e.g. a standard beam is chopped or moved in order not to blind
2300/10 . . . Indexing codes relating to particular vehicle conditions
2300/11 . . . Linear movements of the vehicle
2300/112 . . . Vehicle speed
2300/114 . . . Vehicle acceleration or deceleration
2300/116 . . . Vehicle at a stop
2300/12 . . . Steering parameters
2300/122 . . . Steering angle
2300/124 . . . Steering speed
2300/126 . . . Hysteresis behavior based on steering
2300/128 . . . Steering dead zone
2300/13 . . . Attitude of the vehicle body
2300/132 . . . Pitch
2300/134 . . . Yaw
2300/136 . . . Roll
2300/14 . . . Other vehicle conditions
2300/142 . . . Turn signal actuation
2300/144 . . . Rearward ratio actuation
2300/146 . . . Abnormalities, e.g. fail-safe
2300/20 . . . Indexing codes relating to the driver or the passengers
2300/21 . . . Manual control
2300/22 . . . Seat occupation
2300/23 . . . Driver's line of sight
2300/30 . . . Indexing codes relating to the vehicle environment
2300/305 . . . Calendar date or clock time
2300/31 . . . Atmospheric conditions
2300/312 . . . Adverse weather
2300/314 . . . Ambient light
2300/32 . . . Road surface or travel path
2300/322 . . . Road curvature
2300/324 . . . Road inclination, e.g. uphill or downhill
2300/33 . . . Driving situation
2300/331 . . . characterised by the driving side, e.g. on the left or right hand side
2300/332 . . . on city roads
2300/3321 . . . Detection of streetlights
2300/333 . . . on suburban or country roads
2300/334 . . . on motorways
2300/335 . . . Number or size of road lanes
2300/336 . . . Crossings
2300/337 . . . Tunnels or bridges
2300/338 . . . Overtaking
2300/40 . . . Indexing codes relating to other road users or special conditions
2300/41 . . . preceding vehicle
2300/42 . . . oncoming vehicle
2300/43 . . . following vehicle
2300/45 . . . Special conditions, e.g. pedestrians, road signs or potential dangers
<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2300/47</td>
<td>. Direct command from other road users, i.e. the command for switching or changing the beam is sent by other vehicles or road devices.</td>
</tr>
<tr>
<td>2400/00</td>
<td><strong>Special features or arrangements of exterior signal lamps for vehicles</strong></td>
</tr>
<tr>
<td>2400/10</td>
<td>. Electroluminescent surfaces, i.e. signalling by way of electroluminescent strips or panels.</td>
</tr>
<tr>
<td>2400/20</td>
<td>. Multi-color single source or LED matrix, e.g. yellow blinker and red brake lamp generated by single lamp.</td>
</tr>
<tr>
<td>2400/30</td>
<td>. Daytime running lights [DRL], e.g. circuits or arrangements therefor.</td>
</tr>
<tr>
<td>2400/40</td>
<td>. Welcome lights, i.e. specific or existing exterior lamps to assist leaving or approaching the vehicle.</td>
</tr>
<tr>
<td>2400/50</td>
<td>. Projected signs, i.e. symbol or information is projected onto the road.</td>
</tr>
<tr>
<td>2500/00</td>
<td><strong>Special features or arrangements of vehicle interior lamps</strong></td>
</tr>
<tr>
<td>2500/10</td>
<td>. Embedded in interior trim, e.g. integrated in headliner layers.</td>
</tr>
<tr>
<td>2500/20</td>
<td>. Associated with air conditioning arrangements.</td>
</tr>
<tr>
<td>2900/00</td>
<td><strong>Features of lamps not covered by other groups in B60Q</strong></td>
</tr>
<tr>
<td>2900/20</td>
<td>. Arrangements for easy recycling, e.g. for easy dismantling or use of special materials.</td>
</tr>
<tr>
<td>2900/30</td>
<td>. Lamps commanded by wireless transmissions.</td>
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</tbody>
</table>