

CPC COOPERATIVE PATENT CLASSIFICATION

B PERFORMING OPERATIONS; TRANSPORTING (NOTES omitted)

TRANSPORTING

B60 VEHICLES IN GENERAL (NOTE omitted)

B60R VEHICLES, VEHICLE FITTINGS, OR VEHICLE PARTS, NOT OTHERWISE PROVIDED FOR

NOTE

Attention is drawn to the Note following the title of class [B60](#)

WARNING

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.

1/00 Optical viewing arrangements; Real-time viewing arrangements for drivers or passengers using optical image capturing systems, e.g. cameras or video systems specially adapted for use in or on vehicles

NOTE

This group covers optical viewing arrangements using mirrors as well as real-time viewing arrangements using optical image capturing systems, e.g. the special adaptation of cameras or video systems in or on vehicles, for assisting drivers or passengers. In this context, "viewing" refers to a visual assistance of drivers or passengers using mirrors, cameras or the like.

WARNING

Group [B60R 1/00](#) is impacted by reclassification into groups [B60R 1/20](#), [B60R 1/22](#), [B60R 1/23](#), [B60R 1/24](#), [B60R 1/25](#), [B60R 1/26](#), [B60R 1/27](#), [B60R 1/28](#), [B60R 1/29](#), [B60R 1/30](#) and [B60R 1/31](#).

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

- 1/001 . {integrated in the windows, e.g. Fresnel lenses}
- 1/002 . {specially adapted for covering the peripheral part of the vehicle, e.g. for viewing tyres, bumpers or the like (integrated in the windows [B60R 1/001](#); combined with rear-view mirrors [B60R 1/08](#))}
- 1/003 . . {for viewing trailer hitches}
- 1/005 . {specially adapted for viewing traffic-lights}
- 1/006 . {Side-view mirrors, e.g. V-shaped mirrors located at the front or rear part of the vehicle (combined with rear-view mirrors [B60R 1/08](#); side-view periscopes [B60R 1/10](#))}
- 1/007 . . {specially adapted for covering the lateral blind spot not covered by the usual rear-view mirror}
- 1/008 . {allowing the driver to see passengers, e.g. for busses (combined with rear-view mirrors [B60R 1/08](#))}

- 1/02 . Rear-view mirror arrangements (periscope arrangements [B60R 1/10](#))
- 1/025 . . {comprising special mechanical means for correcting the field of view in relation to particular driving conditions, e.g. change of lane; scanning mirrors}
- 1/04 . . mounted inside vehicle {([B60R 1/025](#), [B60R 1/08](#) take precedence)}
- 1/06 . . mounted on vehicle exterior {([B60R 1/025](#), [B60R 1/08](#) take precedence)}
- 1/0602 . . . {comprising means for cleaning or deicing}
- 1/0605 . . . {specially adapted for mounting on trucks, e.g. by C-shaped support means}
- 1/0607 {with remote position control adjustment}
- 1/061 {by manually actuated mechanical means, e.g. push-pull cables}
- 1/0612 {by electrically actuated means}
- 1/0615 {by hydraulically or pneumatically actuated means}
- 1/0617 {foldable along the vehicle, e.g. in case of external force applied thereon}
- 1/062 . . . with remote control for adjusting position {([B60R 1/0607](#) takes precedence)}
- 1/0625 {by hydraulically or pneumatically powered actuators}
- 1/064 by manually powered actuators
- 1/066 for adjusting the mirror relative to its housing
- 1/068 using cables
- 1/07 by electrically powered actuators
- 1/072 for adjusting the mirror relative to its housing
- 1/074 for retracting the mirror arrangements to a non-use position alongside the vehicle
- 1/076 . . . yieldable to excessive external force and provided with an indexed use position {([B60R 1/0617](#), [B60R 1/074](#) take precedence)}
- 1/078 . . . easily removable; mounted for bodily outward movement, e.g. when towing

- 1/08 . . involving special optical features, e.g. avoiding blind spots {, e.g. convex mirrors; Side-by-side associations of rear-view and other mirrors ([B60R 1/025](#), [B60R 1/10](#) take precedence)}
 - 1/081 . . . {avoiding blind spots, e.g. by using a side-by-side association of mirrors}
 - 1/082 {using a single wide field mirror or an association of rigidly connected mirrors}
 - 1/083 . . . {Anti-glare mirrors, e.g. "day-night" mirrors}
 - 1/084 {using a removable filtering or hiding screen ([associated with windows or windscreens B60J 3/00](#))}
 - 1/085 {using a combination of interchangeable reflecting surfaces, e.g. reversible mirrors}
 - 1/086 {using a mirror angularly movable between a position of use and a non-glare position reflecting a dark field to the user, e.g. situated behind a transparent glass used as low-reflecting surface; Wedge-shaped mirrors}
 - 1/087 {with remote or automatic control means}
 - 1/088 {using a cell of electrically changeable optical characteristic, e.g. liquid-crystal or electrochromic mirrors}
 - 1/089 {using a liquid filtering layer of variable thickness}
 - 1/10 . Front-view mirror arrangements; {(specially adapted for covering the peripheral part of the vehicle [B60R 1/002](#))}; Periscope arrangements {, i.e. optical devices using combinations of mirrors, lenses, prisms or the like (specially adapted for covering the peripheral part of the vehicle [B60R 1/002](#); for viewing traffic-lights [B60R 1/005](#)); Other mirror arrangements giving a view from above or under the vehicle}
 - 1/105 . . {Optical arrangements giving a view under the vehicle, e.g. using periscopes}
 - 1/12 . Mirror assemblies combined with other articles, e.g. clocks
 - 1/1207 . . {with lamps; with turn indicators}
 - 2001/1215 . . {with information displays}
 - 2001/1223 . . {with sensors or transducers}
 - 2001/123 . . {with thermometers}
 - 2001/1238 . . {with vanity mirrors}
 - 2001/1246 . . {with clocks}
 - 2001/1253 . . {with cameras, video cameras or video screens}
 - 2001/1261 . . {with antennae}
 - 2001/1269 . . {with sun visors}
 - 2001/1276 . . {with radio receivers, loud-speakers or buzzers}
 - 2001/1284 . . {with communication systems other than radio-receivers, e.g. keyless entry systems, navigation systems; with anti-collision systems}
 - 2001/1292 . . {with holding means for personal articles}
 - 1/20 . Real-time viewing arrangements for drivers or passengers using optical image capturing systems, e.g. cameras or video systems specially adapted for use in or on vehicles
- WARNING**
- Groups [B60R 1/20](#) – [B60R 1/31](#) are incomplete pending reclassification of documents from group [B60R 1/00](#).
- All groups listed in this Warning should be considered in order to perform a complete search.
- 1/22 . . for viewing an area outside the vehicle, e.g. the exterior of the vehicle
 - 1/23 with a predetermined field of view
 - 1/24 in front of the vehicle
 - 1/25 to the sides of the vehicle
 - 1/26 to the rear of the vehicle
 - 1/27 providing all-round vision, e.g. using omnidirectional cameras
 - 1/28 with an adjustable field of view
 - 1/29 . . for viewing an area inside the vehicle, e.g. for viewing passengers or cargo
 - 1/30 . . providing vision in the non-visible spectrum, e.g. night or infrared vision
 - 1/31 . . providing stereoscopic vision
- 3/00 Arrangements of steps {or ladders facilitating access to or on the vehicle}, e.g. running-boards {construction of steps for railway vehicles [B61D 23/00](#)}; ladders [E06C](#))**
- 3/002 . {Running boards (for vehicle tops [B60R 3/005](#); at the sides of the vehicle for carrying loads [B60R 9/02](#))}
 - 3/005 . {Catwalks, running boards for vehicle tops, access means for vehicle tops; Handrails therefor}
 - 3/007 . {Removable steps or ladders, e.g. foldable ([as access means for vehicle tops B60R 3/005](#))}
 - 3/02 . Retractable steps {or ladders, e.g. movable under shock ([B60R 3/005](#) takes precedence)}
 - 3/04 . with provisions for shoe scraping
- 5/00 Compartments within vehicle body primarily intended or sufficiently spacious for trunks, suit-cases, or the like (primarily intended for stowing loads in load-transporting vehicles [B60P](#); arrangements for stowing spare wheels [B62D 43/00](#))**
- 5/003 . {Luggage racks, e.g. for busses (primarily intended for passengers' property smaller than suitcases [B60R 7/04](#); [B60R 7/08](#); luggage racks for rail vehicles [B61D 37/003](#))}
 - 5/006 . {stowing or holding means for elongated articles, e.g. skis inside vehicles}
 - 5/02 . arranged at front of vehicle {([B60R 5/003](#) takes precedence)}
 - 5/04 . arranged at rear of vehicle {([B60R 5/003](#), [B60R 5/006](#) take precedence; external trunks arranged at rear of vehicle [B60R 9/065](#))}
 - 5/041	. . {extensible externally of the vehicle body, e.g. to create an open luggage compartment of increased capacity (devices for anchoring the boot lid while carrying oversize objects [E05C 17/042](#))}
 - 5/042	. . . {to create an enclosed luggage compartment of increased capacity, e.g. with ventilation apertures for transporting dogs}

5/044	. . {luggage covering means, e.g. parcel shelves}	9/06	. at vehicle front or rear {(rear luggage compartments within vehicle extensible externally of the vehicle body B60R 5/041)}
5/045	. . . {collapsible or transformable}	9/065	. . {Enclosure-type carriers, e.g. trunks}
5/047	. . . . {collapsible by rolling-up}	9/08	. specially adapted for sports gear (vehicles specially adapted for carrying aeroplanes, for carrying boats B60P)
5/048	. . . . {of accordion-type, i.e. collapsible by sliding and folding}	9/10	. . for cycles
7/00	Stowing or holding appliances inside vehicle primarily intended for personal property smaller than suit-cases, e.g. travelling articles, or maps (for radio sets, television sets, telephones or the like, mounting of cameras operative during drive, tools, or spare parts B60R 11/00; for receptacles for refuse, food, beverages, cigarettes B60N)	9/12	. . for skis
7/005	. {Nets or elastic pockets tensioned against walls or backrests}	11/00	Arrangements for holding or mounting articles, not otherwise provided for
7/02	. in separate luggage compartment {(B60R 7/005 takes precedence)}	2011/0001	. {characterised by position}
7/04	. in driver or passenger space {, e.g. using racks (B60R 7/005 , B60R 7/08 take precedence)}	2011/0003	. . {inside the vehicle}
7/043	. . {mounted on or under a seat}	2011/0005	. . . {Dashboard}
7/046	. . {mounted on door}	2011/0007	. . . {Mid-console}
7/05	. . mounted on sun visor	2011/0008	. . . {Ventilation grilles}
7/06	. . mounted on or below dashboards	2011/001	. . . {Vehicle control means, e.g. steering-wheel or column}
7/08	. Disposition of racks, clips {, holders, containers} or the like {for supporting specific articles (B60R 7/005 takes precedence)}	2011/0012	. . . {Seats or parts thereof}
7/081	. . {for supporting maps}	2011/0014	. . . . {Arm-rests}
7/082	. . {for supporting spectacles}	2011/0015	. . . . {Back-rests}
7/084	. . {for supporting tissues or tissue boxes}	2011/0017	. . . . {Head-rests}
7/085	. . {for supporting flowers or flower vases}	2011/0019	. . . {Side or rear panels}
7/087	. . {for stowing money or valuables, e.g. using safes}	2011/0021	. . . . {Doors}
7/088	. . {for stowing tape cartridges, compact discs, or the like}	2011/0022	. . . . {Pillars}
7/10	. . for supporting hats, clothes or clothes hangers	2011/0024	. . . . {Rear shelves}
7/12	. . for supporting umbrellas	2011/0026	. . . {Windows, e.g. windscreen}
7/14	. . for supporting weapons	2011/0028	. . . {Ceiling, e.g. roof rails}
9/00	Supplementary fittings on vehicle exterior for carrying loads, e.g. luggage, sports gear or the like	2011/0029	. . . {Floor, e.g. side sills, fire wall}
9/02	. at the sides, e.g. on running-board	2011/0031	. . . {Seat belts}
9/04	. Carriers associated with vehicle roof (B60R 9/08 takes precedence)	2011/0033	. . . {Rear-view mirrors}
9/042	. . Carriers characterised by means to facilitate loading or unloading of the load, e.g. rollers, tracks, or the like	2011/0035	. . . {Sun visors}
9/0423	. . . {for ladders}	2011/0036	. . . {Luggage compartment}
9/0426	. . . {for small vehicles, e.g. invalid chairs, perambulators}	2011/0038	. . . {Engine compartment}
9/045	. . Carriers being adjustable or transformable, e.g. expansible, collapsible {(transformable into tents B60P 3/36 ; into beds B60P 3/38)}	2011/004	. . {outside the vehicle}
9/048	. . Carriers characterised by article-gripping {, -covering,}-retaining, or -locking means	2011/0042	. {characterised by mounting means}
9/0485	. . . {for ladders (B60R 9/0423 takes precedence)}	2011/0043	. . {for integrated articles, i.e. not substantially protruding from the surrounding parts}
9/05	. . Carriers characterised by wind deflecting means (wind deflectors for open roofs B60J 7/22)	2011/0045	. . . {with visible part, e.g. flush mounted}
9/052	. . Carriers comprising elongate members extending only transversely of vehicle (B60R 9/08 takes precedence)	2011/0047	. . . . {using hidden fastening means}
9/055	. . Enclosure-type carriers, e.g. containers, boxes (B60R 9/048 takes precedence)	2011/0049	. . {for non integrated articles}
9/058	. . characterised by releasable attaching means between carrier and roof	2011/005	. . . {Connection with the vehicle part}
		2011/0052	. . . . {using screws, bolts, rivets or the like}
		2011/0054	. . . . {using cigarette lighter}
		2011/0056	. . . . {using suction cups}
		2011/0057	. . . . {using magnetic means}
		2011/0059	. . . . {using clips, clamps, straps or the like}
		2011/0061	. . . . {using key-type connections}
		2011/0063	. . . . {using adhesive means, e.g. hook and loop fasteners}
		2011/0064	. . . {Connection with the article}
		2011/0066	. . . . {using screws, bolts, rivets or the like}
		2011/0068	. . . . {using suction cups}
		2011/007	. . . . {using magnetic means}
		2011/0071	. . . . {using latches, clips, clamps, straps or the like}
		2011/0073	. . . . {using key-type connections}
		2011/0075	. . . . {using a containment or docking space}
		2011/0077	. . . . {using adhesive means, e.g. hook and loop fasteners}
		2011/0078	. . . {Quick-disconnect two-parts mounting means}
		2011/008	. . {Adjustable or movable supports}

2011/0082	. . . {collapsible, e.g. for storing after use}	13/0206	. . {Arrangements of fasteners and clips specially adapted for attaching inner vehicle liners or mouldings (devices for fastening or securing F16B)}
2011/0084	. . . {with adjustment by linear movement in their operational position}	13/0212	. . {Roof or head liners (movable head-liners B60J 7/0007)}
2011/0085	. . . {with adjustment by rotation in their operational position}	13/0218	. . . {supported by adhesion with the roof panel}
2011/0087	. . . . {around two axes}	13/0225	. . . {self supporting head liners}
2011/0089	. . . . {around three axes, i.e. universally mounted}	13/0231	. . . {specially adapted for roofs with openings}
2011/0091	. . . . {the article being mounted on a flexible shaft}	13/0237	. . {Side or rear panels}
2011/0092	. . . {with motorization}	13/0243	. . . {Doors}
2011/0094	. {characterised by means for covering after user, e.g. boxes, shutters or the like}	13/025	. . . {Pillars; Roof rails}
2011/0096	. {Theft prevention of articles}	13/0256	. . {Dashboard liners}
2011/0098	. . {using electric or electronic means, e.g. alarms, codes}	13/0262	. . {Mid-console liners}
11/02	. for radio sets, television sets, telephones, or the like; Arrangement of controls thereof	13/0268	. . {Rear parcel liners (used as luggage covering means B60R 5/044)}
11/0205	. . {for radio sets (B60R 11/0211 takes precedence)}	13/0275	. . {comprising removable or hinged parts (for accessing storage compartments B60R 7/04 ; for airbag deployment B60R 21/215)}
11/0211	. . {for record carriers apparatus, e.g. video recorders, tape players or CD players}	2013/0281	. . {made of a plurality of visible parts}
11/0217	. . {for loud-speakers}	2013/0287	. . {integrating other functions or accessories}
11/0223	. . . {of flat type}	2013/0293	. . {Connection or positioning of adjacent panels}
11/0229	. . {for displays, e.g. cathodic tubes}	13/04	. {External} Ornamental or guard strips; Ornamental inscriptive devices {thereon (fastening strips or bars to sheets or plates by means of clips F16B 5/12)}
11/0235	. . . {of flat type, e.g. LCD}	13/043	. . {Door edge guards}
11/0241	. . {for telephones}	2013/046	. . {Foot boards}
11/0247	. . {for microphones or earphones}	13/06	. Sealing strips (sealing arrangements for vehicle windows, windcreens, non-fixed roofs, doors, or similar devices B60J 10/00)
11/0252	. . {for personal computers, e.g. laptops, notebooks}	13/07	. Water drainage or guide means not integral with roof structure (B60R 13/06 , B60J 10/25) take precedence ; {integral with roof structure B62D 25/07 ; drainage openings having movable or removable closures B62D 25/24)}
11/0258	. . {for navigation systems}	13/08	. Insulating elements, e.g. for sound insulation {(sound insulating linings for trains B61D 17/185 ; drivers' cabs for load-carrying vehicles insulated against vibrations or noise B62D 33/0604 ; thermal or acoustic insulation of engines F02B 77/11 ; damping of sounds using compensation by electro-acoustic methods G10K 11/178)}
11/0264	. . {for control means}	2013/0807	. . {Arrangements of fasteners or clips specially adapted therefore}
2011/027	. . {for Din-sized apparatus}	13/0815	. . {Acoustic or thermal insulation of passenger compartments (wall or roof liners integrating the insulating function B60R 13/02 ; insulating floor mats or carpets B60N 3/04)}
2011/0276	. . {for rear passenger use}	13/0823	. . . {Insulating partitions, e.g. between front and rear seats}
2011/0282	. . {for the use of several passengers, e.g. simultaneously}	13/083	. . . {for fire walls or floors}
2011/0288	. . {Apparatus made of several modules independently mounted}	13/0838	. . {for engine compartments}
2011/0294	. . {Apparatus with multi-functionalities, e.g. radio and telephone}	13/0846	. . {for duct, cable or rod passages, e.g. between engine and passenger compartments}
11/04	. Mounting of cameras operative during drive; Arrangement of controls thereof relative to the vehicle	13/0853	. . . {specially adapted for movable parts, e.g. gears levers, pedals}
11/06	. for tools or spare parts (for vehicle roof parts B60J 7/20 ; for spare wheels B62D)	13/0861	. . {for covering undersurfaces of vehicles, e.g. wheel houses}
13/00	Elements for body-finishing, identifying, or decorating; Arrangements or adaptations for advertising purposes	13/0869	. . {for protecting heat sensitive parts, e.g. electronic components}
13/005	. {Manufacturers' emblems, name plates, bonnet ornaments, mascots or the like; Mounting means therefor}	13/0876	. . {for mounting around heat sources, e.g. exhaust pipes}
13/01	. Liners for load platforms or load compartments	13/0884	. . {for mounting around noise sources, e.g. air blowers}
13/011	. . {for internal load compartments, e.g. car trunks}		
13/013	. . . {comprising removable or hinged parts, e.g. for accessing storage compartments}		
2013/015	. . {made of a plurality of visible parts}		
2013/016	. . {integrating other functions or accessories}		
2013/018	. . {Connection or positioning of adjacent panels}		
13/02	. {Internal} Trim mouldings {; Internal} Ledges; Wall liners {for passenger compartments}; Roof liners (B60R 13/01 takes precedence {; padded linings for the vehicle interior B60R 21/04 ; arrangements or adaptations of floor mats or carpets in vehicles B60N 3/04 ; internal lining for trains B61D 17/18)}		

- 13/0892 . . {for humidity insulation (sealing strips [B60R 13/06](#))}
- 13/10 . Registration, licensing, or like devices
- 13/105 . . {Licence- or registration plates, provided with mounting means, e.g. frames, holders, retainers, brackets}
- 15/00 Arrangements or adaptations of sanitation devices**
- 15/02 . Washing facilities {(in railway vehicles [B61D 35/002](#))}
- 15/04 . Toilet facilities {(in railway vehicles [B61D 35/005](#))}
- 16/00 Electric or fluid circuits specially adapted for vehicles and not otherwise provided for; Arrangement of elements of electric or fluid circuits specially adapted for vehicles and not otherwise provided for {(devices for protecting vehicle occupants in case of accidents [B60R 21/00](#); safety belts [B60R 22/00](#); central door locking [E05B 49/00](#), [E05B 77/50](#))}**
- 16/005 . {Electro-mechanical devices, e.g. switched (electric switches in general [H01H](#))}
- 16/02 . electric {constitutive elements}
- 16/0207 . . {Wire harnesses}
- 16/0215 . . . {Protecting, fastening and routing means therefor}
- 16/0222 {Grommets}
- 16/023 . . for transmission of signals between vehicle parts or subsystems
- 16/0231 . . . {Circuits relating to the driving or the functioning of the vehicle (monitoring tyres [B60C 23/00](#); indicating overspeed [B60K 31/00](#); for dash boards [B60K 37/00](#), [B60Q 3/10](#); for indicating emergencies [B60Q 1/52](#); brake control systems [B60T](#); registering or indicating the working of vehicles [G07C 5/00](#); measuring distance [G01C](#), e.g. combinations of speed and distance [G01C 23/00](#); engine indicators [G01L](#); measuring speed or acceleration [G01P](#))}
- 16/0232 {for measuring vehicle parameters and indicating critical, abnormal or dangerous conditions}
- 16/0233 {Vehicle tilting, overturning or roll over}
- 16/0234 {related to maintenance or repairing of vehicles}
- 16/0235 {for lighting devices combined with starting or ignition devices for road vehicles}
- 16/0236 {for economical driving}
- 16/0237 . . . {circuits concerning the atmospheric environment (meteorology [G01W](#))}
- 16/0238 . . . {Electrical distribution centers}
- 16/0239 . . . {Electronic boxes}
- 16/027 . . . between relatively movable parts of the vehicle, e.g. between steering wheel and column {(devices for measuring, signalling or controlling tyre pressure or temperature specially adapted for mounting on vehicles [B60C 23/00](#))}
- 16/03 . . for supply of electrical power to vehicle subsystems {or for (circuit arrangements for charging batteries [H02J 7/00](#))}
- 16/0307 . . . {using generators driven by a machine different from the vehicle motor}
- 16/0315 . . . {using multiplexing techniques (multiplexing for transmission of signals [G08C 15/00](#); multiplexing for electrical communication in general [H04J](#))}
- 2016/0322 {Temporary code for documents to be reclassified to [G08C](#), [H04L](#) or [H04Q](#)}
- 16/033 . . . characterised by the use of electrical cells or batteries (for propulsion puposes [B60K 1/04](#); supplying batteries to, or removing batteries from, vehicles [B60S 5/06](#); testing of charge state [G01R 31/36](#))
- 16/037 . . for occupant comfort {, e.g. for automatic adjustment of appliances according to personal settings, e.g. seats, mirrors, steering wheel}
- 16/0373 . . . {Voice control (in general [G10L](#))}
- 16/04 . . Arrangement of batteries
- 16/06 . . for removing electrostatic charges (carrying-off electrostatic charges in general [H05F 3/00](#))
- 16/08 . fluid
- 17/00 Arrangements or adaptations of lubricating systems or devices (lubricating in general [F16N](#))**
- 17/02 . Systems, e.g. central lubrication systems
- 19/00 Wheel guards; Radiator guards, {e.g. grilles}; Obstruction removers; Fittings damping bouncing force in collisions {(reinforcement elements for side doors [B60J 5/0412](#); } mudguards [B62D](#))**
- 2019/002 . {Wheel guards}
- 2019/005 . {Crash attenuators, i.e. means added to highway service vehicles for softening high speed impacts}
- 2019/007 . {Means for adjusting or regulating the crash absorption capacity of the vehicle, e.g. when detecting an impending collision}
- 19/02 . Bumpers, i.e. impact receiving or absorbing members for protecting vehicles or fending off blows from other vehicles or objects {([B60R 19/56](#) takes precedence; initiating brake action by contact of bumper with an external object [B60T 7/22](#); for rail vehicles [B61F 19/04](#); safety equipment for cycles [B62J 27/00](#); } integral with waterborne vessels or specially adapted therefor [B63B 59/02](#))}
- 19/023 . . {Details}
- 2019/026 . . {Buffers, i.e. bumpers of limited extent}
- 19/03 . . characterised by material, e.g. composite ([B60R 19/18](#) takes precedence)
- 19/04 . . formed from more than one section {in a side-by-side arrangement}
- 19/12 . . . vertically spaced
- 19/14 . . . having folding parts
- 19/16 . . . having deflecting members, e.g. rollers, balls
- 19/18 . . {characterised by the cross-section;} Means within the bumper to absorb impact
- 2019/1806 . . . {Structural beams therefor, e.g. shock-absorbing (bumper beams made of cellular materials [B60R 19/22](#))}
- 2019/1813 {made of metal}
- 2019/182 {of light metal, e.g. extruded}
- 2019/1826 {of high-tension steel}
- 2019/1833 {made of plastic material}
- 2019/184 {Blow moulded}
- 2019/1846 {comprising a cellular structure}
- 2019/1853 {of reinforced plastic material}

2019/186	. . . {Additional energy absorbing means supported on bumper beams, e.g. cellular structures or material}	19/48	. . combined with, or convertible into, other devices or objects, e.g. bumpers combined with road brushes, bumpers convertible into beds
2019/1866	. . . . {Cellular structures}	19/483	. . . {with obstacle sensors of electric or electronic type}
2019/1873	. . . . {Cellular materials}	2019/486	. . . {with air passages, e.g. for cooling}
2019/188	. . . . {Blow molded structures}	19/50	. . . with lights or registration plates
2019/1886	. . . {Bumper fascias and fastening means therefor (on fenders B60R 2019/247)}	2019/505	. . . . {with lights}
2019/1893	. . . {comprising a multiplicity of identical adjacent shock-absorbing means}	19/52	. Radiator or grille guards {; Radiator grilles (cooling aspects B60K 11/08)}
19/20	. . . containing {mainly} gas or liquid, e.g. inflatable (connection of valves to inflatable elastic bodies B60C 29/00)	2019/522	. . {Bull bars}
19/205	. . . . {inflatable in the direction of an obstacle upon impending impact, e.g. using air bags}	2019/525	. . {Radiator grilles}
19/22	. . . containing {mainly} cellular material, e.g. solid foam	2019/527	. . . {integral with bumpers}
19/24	. . Arrangements for mounting bumpers on vehicles	19/54	. Obstruction removers or deflectors (B60R 19/16 , B60R 21/34 take precedence)
2019/242	. . . {on two vertical sleeves, e.g. on energy absorber ends}	19/545	. . {Devices for cutting wire-type obstructions}
2019/245	. . . {with adjusting means to compensate manufacturing tolerances, e.g. between bumper and energy absorbers}	19/56	. {Fittings damping bouncing force in truck collisions, e.g. bumpers;} Arrangements on high-riding vehicles, e.g. lorries, for preventing vehicles or objects from running thereunder
2019/247	. . . {Fastening of bumpers' side ends}	19/565	. . {on vehicle sides}
19/26	. . . comprising yieldable mounting means ({ B60R 19/38 takes precedence;} springs, shock absorbers, or means for damping vibrations per se F16F)	21/00	Arrangements or fittings on vehicles for protecting or preventing injuries to occupants or pedestrians in case of accidents or other traffic risks (safety belts or body harnesses in vehicles B60R 22/00; devices, apparatus or methods for life-saving in general A62B; safety devices for propulsion unit control specially adapted for, or arranged in, vehicles B60K 28/00; seats constructed to protect the occupant from the effect of abnormal g-forces, e.g. crash or safety seats, B60N 2/42; energy-absorbing arrangements for hand wheels for steering vehicles B62D 1/11; energy-absorbing arrangements for vehicle steering columns B62D 1/19; harnessing in aircraft B64D 25/00)
2019/262	. . . . {with means to adjust or regulate the amount of energy to be absorbed}	2021/0002	. {Type of accident}
2019/264	. . . . {using cellular structures}	2021/0004	. . {Frontal collision}
2019/266	. . . . {using friction surfaces}	2021/0006	. . {Lateral collision}
2019/268	. . . . {with rebound preventing means, e.g. ratchets}	2021/0009	. . {Oblique collision}
19/28	. . . . Metallic springs	2021/0011	. . {Rear collision or recoiling bounce after frontal collision}
19/285	. . . . {comprising only leaf springs, e.g. the mounting means forming part of the guard itself}	2021/0013	. . {Free fall}
19/30	. . . . Elastomeric material ({ B60R 19/34 takes precedence})	2021/0016	. . {Fall in water}
19/32	. . . . Fluid shock absorbers {, e.g. with coaxial coil springs}	2021/0018	. . {Roll-over}
19/34	. . . . destroyed upon impact, e.g. one-shot type	2021/002	. . {Underrun collision}
19/36	. . . . Combinations of yieldable mounting means of different types {(fluid shock absorbers with coaxial coil springs B60R 19/32)}	2021/0023	. . {Offset collision}
19/38	. . . adjustably or movably mounted, e.g. horizontally displaceable for securing a space between parked vehicles {(adjustably mounted for compensating manufacturing tolerances B60R 19/24 , B60R 19/26)}	2021/0025	. . {Pole collision}
19/40	. . . . in the direction of an obstacle before a collision {, or extending during driving of the vehicle, i.e. to increase the energy absorption capacity of the bumper (inflatable bumpers B60R 19/20)}	2021/0027	. {Post collision measures, e.g. notifying emergency services}
19/42	. . extending primarily along the sides of, or completely encircling, a vehicle (ornamental or guard strips B60R 13/04)	2021/003	. {characterised by occupant or pedestrian}
19/44	. . Bumper guards	2021/0032	. . {Position of passenger}
19/445	. . . {Guard strips}	2021/0034	. . . {lying down}
19/46	. . . spring- or pivotally-mounted	2021/0037	. . . {standing}
		2021/0039	. . {Body parts of the occupant or pedestrian affected by the accident}
		2021/0041	. . . {Arms}
		2021/0044	. . . {Chest}
		2021/0046	. . . {Feet}
		2021/0048	. . . {Head}
		2021/0051	. . . {Knees}
		2021/0053	. . . {Legs}
		2021/0055	. . . {Pelvis}
		2021/0058	. . . {Shoulders}

2021/006	. . {Type of passenger}	2021/01211	. . . {Expansion of air bags}
2021/0062	. . . {woman, e.g. pregnant}	2021/01218	. . . . {control of expansion speed}
2021/0065	. {Type of vehicles}	2021/01225	. . . . {control of expansion volume}
2021/0067	. . {Buses}	2021/01231	. . . . {control of expansion timing or sequence}
2021/0069	. . {Trailers, e.g. caravans}	2021/01238	. . . . {control of expansion shape}
2021/0072	. . {Convertible cars}	2021/01245	. . . . {selection of seat for bag expansion}
2021/0074	. . {Utility vehicles}	2021/01252	. . . {Devices other than bags}
2021/0076	. . . {Agricultural vehicles, e.g. tractors}	2021/01259	. . . . {Brakes}
2021/0079	. . . {Fork-lift trucks}	2021/01265	. . . . {Seat belts}
2021/0081	. . . {Working vehicles}	2021/01272	. . . . . {Belt tensioners}
2021/0083	. . . {Pick-up trucks; Light trucks; Sport utility vehicles}	2021/01279	. . . . . {Load limiters}
2021/0086	. . {Racing cars}	2021/01286	. . {Electronic control units}
2021/0088	. . {Cycles, e.g. motorcycles}	2021/01293	. . . {programmable for use in different vehicles or with different airbags configurations}
2021/009	. . {Railway vehicles}	21/013	. . including means for detecting collisions, impending collisions or roll-over
2021/0093	. . {Aircraft}	2021/01302	. . . {monitoring vehicle body vibrations or noise}
2021/0095	. . {Boats}	2021/01304	. . . {monitoring rough road condition}
2021/0097	. . {Amusement vehicles}	2021/01306	. . . {monitoring vehicle inclination}
21/01	. Electrical circuits for triggering {passive} safety arrangements, {e.g. airbags, safety belt tighteners,} in case of vehicle accidents or impending vehicle accidents {(electrical circuits for transmission of signals between steering wheel and the vehicle itself B60R 16/027; for electrically actuating belt retractor locking means B60R 22/343)}	2021/01308	. . . {monitoring distance between vehicle body and road}
2021/01006	. . {Mounting of electrical components in vehicles}	2021/01311	. . . {monitoring the braking system, e.g. ABS}
2021/01013	. . {Means for detecting collision, impending collision or roll-over}	2021/01313	. . . {monitoring the vehicle steering system or the dynamic control system}
2021/0102	. . . {the monitored value being used for calculating occupant displacement}	2021/01315	. . . {monitoring occupant displacement}
2021/01027	. . . {Safing sensors}	2021/01317	. . . {monitoring seat belt tension}
2021/01034	. . {Controlling a plurality of restraint devices}	21/0132	. . . responsive to vehicle motion parameters {, e.g. to vehicle longitudinal or transversal deceleration or speed value}
2021/0104	. . {Communication circuits for data transmission}	2021/01322	. . . . {comprising variable thresholds, e.g. depending from other collision parameters}
2021/01047	. . . {Architecture}	2021/01325	. . . . {Vertical acceleration}
2021/01054	. . . . {Bus}	2021/01327	. . . . {Angular velocity or angular acceleration}
2021/01061	. . . . . {between the airbag system and other vehicle electronic systems}	21/0133	. . . . {by integrating the amplitude of the input signal}
2021/01068	. . . . . {between different sensors and airbag control unit}	21/01332	. . . . . {by frequency or waveform analysis}
2021/01075	. . . . . {between the airbag control unit and pyrotechnic fuses or equivalent actuators}	21/01334	. . . . . {using Fourier analysis}
2021/01081	. . . {Transmission medium}	21/01336	. . . . . {using filtering}
2021/01088	. . . . {wireless}	21/01338	. . . . . {using vector analysis}
2021/01095	. . . . {optical}	21/0134	. . . responsive to imminent contact with an obstacle {, e.g. using radar systems}
2021/01102	. . . {Transmission method}	2021/01345	. . . . {using mechanical sensing means}
2021/01109	. . . . {power and data signal using transmission medium}	21/0136	. . . responsive to actual contact with an obstacle {, e.g. to vehicle deformation, bumper displacement or bumper velocity relative to the vehicle (monitoring crash strength in combination with passenger seat detection B60R 21/01558)}
2021/01115	. . . . {specific data frames}	21/015	. . including means for detecting the presence or position of passengers, passenger seats or child seats {, and the related safety parameters therefor, e.g. speed or timing of airbag inflation in relation to occupant position or seat belt use}
2021/01122	. . {Prevention of malfunction}	21/01504	. . . {detecting bag displacement}
2021/01129	. . . {Problems or faults}	21/01508	. . . {detecting forces or pressure in bags or modules}
2021/01136	. . . . {Cut lines}	21/01512	. . . {Passenger detection systems}
2021/01143	. . . . {Short circuits}	21/01516	. . . . {using force or pressure sensing means}
2021/0115	. . . . {Current leakage}	21/0152	. . . . . {using strain gauges}
2021/01156	. . . . {Current or voltage overload}	21/01522	. . . . . {using fluid means}
2021/01163	. . . . {Insufficient current or voltage}	21/01524	. . . . . {using electric switches}
2021/0117	. . . . {Noise}	21/01526	. . . . . {using piezoelectric elements}
2021/01177	. . . . {Misdeployment, e.g. during assembly, disassembly, accident salvage or recycling}	21/01528	. . . . . {mounted on the bag}
2021/01184	. . . {Fault detection or diagnostic circuits (in power circuits B60R 2021/01129)}		
2021/0119	. . . . {Plausibility check}		
2021/01197	. . . . {Warning devices}		
2021/01204	. . {Actuation parameters of safety arrangements}		

21/0153	. . . . {using field detection presence sensors}	2021/0407	. . . {using gas or liquid as energy absorbing means}
21/01532	. . . . {using electric or capacitive field sensors}	2021/0414	. . . {using energy absorbing ribs}
21/01534	. . . . {using electromagnetic waves, e.g. infrared}	2021/0421	. . . {using honeycomb structures}
21/01536	. . . . {using ultrasonic waves}	21/0428	. . . {associated with the side doors or panels, e.g. displaced towards the occupants in case of a side collision}
21/01538	. . . . {for image processing, e.g. cameras or sensor arrays}	2021/0435	. . . {associated with the side or roof pillars}
21/0154	. . . . {in combination with seat heating}	2021/0442	. . . {associated with the roof panel}
21/01542	. . . . {detecting passenger motion}	21/045	. . . associated with the instrument panel or dashboard
21/01544	. . . . {detecting seat belt parameters, e.g. length, tension or height-adjustment}	21/05	. . . associated with the steering wheel, {steering} hand lever or {steering} column (yieldable steering columns B62D 1/18)
21/01546	. . . . {using belt buckle sensors}	21/055	. . Padded {or energy-absorbing} fittings {, e.g. seat belt anchors (sun visors B60J 3/00; head rests B60N 2/80)}
21/01548	. . . . {sensing the amount of belt wound on retractor}	21/06	. . Safety nets, transparent sheets, curtains, or the like, e.g. between occupants and glass (B60R 21/026), B60R 21/11, B60R 21/12, B60R 21/16 take precedence)
21/0155	. . . . {sensing belt tension}	2021/065	. . . {comprising energy absorbing mounting means}
21/01552	. . . . {detecting position of specific human body parts, e.g. face, eyes or hands}	21/08	. . . {automatically} movable from an inoperative to an operative position, e.g. in a collision (electrical circuits for triggering safety arrangements B60R 21/01)
21/01554	. . . {Seat position sensors}	21/09	. . Control elements or operating handles movable from an operative to an out-of-the way position, e.g. {pedals,} switch knobs, window cranks { (specially adapted for brake pedals, e.g. by venting of master cylinder or destruction of force transmitting rod, B60T 7/065) }
21/01556	. . . {Child-seat detection systems}	21/11	. . Overhead guards, e.g. against loads falling down { (specially adapted for fork-lift trucks B66F 9/07545) }
21/01558	. . . {monitoring crash strength}	21/12	. . which protect the occupants against personal attack from the inside or the outside of the vehicle
21/0156	. . . . {by deceleration}	21/13	. . Roll-over protection (electrical circuits for triggering safety arrangements B60R 21/01)
21/01562	. . . . {by speed}	21/131	. . . {Protective devices for drivers in case of overturning of tractors (means for preventing overturning or tipping of tractors B62D 49/08) }
21/01564	. . . {Manually or key-actuated inhibition switches}	2021/132	. . . {Roll bars for convertible vehicles}
21/01566	. . . {Devices for warning or indicating mode of inhibition}	2021/134	. . . . {movable from a retracted to a protection position}
21/017	. . including arrangements for providing electric power to safety arrangements {or their actuating means, e.g. to pyrotechnic fuses or electro-mechanic valves}	2021/135	. . . . {automatically during an accident}
21/0173	. . . {Diagnostic or recording means therefor}	2021/137	. . . {Reinforcement cages for closed vehicle bodies}
21/0176	. . . . {for firing circuits using only mechanical switches as collision detecting means, in series with pyrotechnic fuses}	2021/138	. . . {using external airbags}
21/02	. . Occupant safety arrangements or fittings {, e.g. crash pads (seat belts with crash pads B60R 22/14; removable children's seats having a front guard or barrier B60N 2/2839) }	21/16	. . Inflatable occupant restraints or confinements designed to inflate upon impact or impending impact, e.g. air bags { (protective garments with automatically inflatable shock-absorbing means A41D 13/018; } connection of valves to inflatable elastic bodies B60C 29/00)
2021/0206	. . {Self-supporting restraint systems, e.g. restraining arms, plates or the like}	2021/161	. . . {characterised by additional means for controlling deployment trajectory}
2021/0213	. . . {mounted on floor}	2021/162	. . . {Means for diverting, destroying or blocking the bag in case of dangerous deployment, e.g. during rescue operations or use of rear-facing children seats}
2021/022	. . . {mounted on seats}	21/164	. . . {combined with vehicle venting means for reducing or avoiding the passenger compartment overpressure during inflation}
2021/0226	. . . {mounted on fire wall}		
2021/0233	. . . {mounted on steering-wheel}		
2021/024	. . . {mounted on dash-board}		
2021/0246	. . . {mounted on side walls}		
2021/0253	. . . {mounted on roof}		
21/026	. . {Rigid partitions inside vehicles, e.g. between passengers and load compartments (B60R 21/12 takes precedence) }		
2021/0266	. . . {comprising energy absorbing means}		
2021/0273	. . {automatically movable to an operative position, e.g. in case of collision or impending collision}		
2021/028	. . {Means preventing passenger from falling out of vehicles}		
21/0286	. . {Padded or energy absorbing driving control initiating means, e.g. gear lever, pedals (B60R 21/09 takes precedence; padded linings for steering control means B60R 21/05) }		
2021/0293	. . {Additional pads or cushions in vehicle compartments, e.g. movably mounted}		
21/04	. . Padded linings for the vehicle interior {; Energy absorbing structures associated with padded or non-padded linings}		

2021/165	. . .	{reusable, e.g. in case of multiple collisions}	2021/2161	. . . . .	{the cover being displaced towards the occupant during deployment}
2021/167	. . .	{comprising anti-theft devices}	2021/2163	. . . . .	{with energy absorbing or elastic means}
2021/168	. . .	{for restraining luggages}	21/2165	. . . . .	characterised by a tear line for defining a deployment opening
21/18	. . .	the inflatable member formed as a belt or harness or combined with a belt or harness arrangement	2021/21652	. . . . .	{the tearing being done or assisted by cutters}
21/20	. . .	Arrangements for storing inflatable members in their non-use or deflated condition; Arrangement or mounting of air bag modules or components	2021/21654	. . . . .	{the tearing being done or assisted by heating or pyrotechnic means}
21/201	. . . .	Packaging straps or envelopes for inflatable members	21/21656	. . . . .	{Steering wheel covers or similar cup-shaped covers}
21/203	. . . .	in steering wheels or steering columns	21/21658	. . . . .	{with integrated switches, e.g. horn switches}
21/2032	. . . . .	{the inflator or inflatable member not being rotatable with the steering wheel; Arrangements using the steering column or steering wheel rim for storing, supplying or evacuating the inflation gas or for storing the inflatable member}	21/217	. . . .	Inflation fluid source retainers, e.g. reaction canisters; Connection of bags, covers, diffusers or inflation fluid sources therewith or together
21/2035	. . . . .	{using modules containing inflator, bag and cover attachable to the steering wheel as a complete sub-unit (steering wheel covers with tear lines B60R 21/21656 ; assembling of modules B60R 21/217)}	21/2171	. . . . .	{specially adapted for elongated cylindrical or bottle-like inflators with a symmetry axis perpendicular to the main direction of bag deployment, e.g. extruded reaction canisters (B60R 21/2176 takes precedence)}
21/2037	. . . . .	{the module or a major component thereof being yieldably mounted, e.g. for actuating the horn switch or for protecting the driver in a non-deployment situation (horn switches integrated in steering wheel covers with tear lines B60R 21/21658)}	2021/2172	. . . . .	{the cover being connected to the surrounding part and to the module, e.g. floating mounts}
21/205	. . . .	in dashboards	2021/2173	. . . . .	{the module or part thereof being movably mounted on the vehicle}
21/206	. . . . .	in the lower part of dashboards, e.g. for protecting the knees	2021/2175	. . . . .	{using energy absorbing means}
21/207	. . . .	in vehicle seats	21/2176	. . . . .	{the air bag components being completely enclosed in a soft or semi-rigid housing or cover}
21/2072	. . . . .	{in children's seats}	2021/2177	. . . . .	{Reaction canisters characterised by material}
2021/2074	. . . . .	{in head rests}	2021/2178	. . . . .	{Plastic}
2021/2076	. . . . .	{Removable covers with tear seams}	21/23	. . .	Inflatable members (B60R 21/18 takes precedence; connection to inflation fluid source retainers B60R 21/217)
2021/2078	. . . . .	{in rear seats}	21/231	. . . .	characterised by their shape, construction or spatial configuration
21/21	. . . .	in vehicle side panels, e.g. doors (pillar mounted arrangements B60R 21/213)	2021/23107	. . . . .	{the bag being integrated in a multi-bag system}
21/213	. . . .	in vehicle roof frames or pillars	2021/23115	. . . . .	{with inflatable support compartments creating an internal suction volume}
21/214	. . . .	in roof panels	2021/23123	. . . . .	{Heat protection panels}
21/215	. . . .	characterised by the covers for the inflatable member ({ B60R 21/2176 takes precedence})	2021/2313	. . . . .	{comprising sensitive compartments}
2021/21506	. . . . .	{comprising tearing tabs, legs or the like for holding the lid before deployment}	21/23138	. . . . .	{specially adapted for side protection (B60R 21/23184 , B60R 21/232 take precedence)}
2021/21512	. . . . .	{the lid being displaced towards the occupant during deployment (B60R 2021/2161 , B60R 2021/21525 take precedence)}	2021/23146	. . . . .	{seat mounted}
2021/21518	. . . . .	{comprising a lock unlocked during deployment}	2021/23153	. . . . .	{specially adapted for rear seat passengers}
2021/21525	. . . . .	{the lid being fixed on the bag, or forming part of the bag wall, or the bag itself being used as wall liner}	2021/23161	. . . . .	{specially adapted for protecting at least two passengers, e.g. preventing them from hitting each other}
2021/21531	. . . . .	{using a stretchable wall liner}	2021/23169	. . . . .	{specially adapted for knee protection}
2021/21537	. . . . .	{characterised by hinges}	2021/23176	. . . . .	{specially adapted for foot protection}
2021/21543	. . . . .	{with emblems}	21/23184	. . . . .	{Tubular air bags connected to the vehicle at their two extremities}
21/2155	. . . . .	with complex motion of the cover; Retraction under the lining during opening	2021/23192	. . . . .	{Roof bags, i.e. protecting the occupant in a roll-over situation}
21/216	. . . . .	comprising tether means for limitation of cover motion during deployment	21/232	. . . . .	Curtain-type airbags deploying mainly in a vertical direction from their top edge

21/233	. . . . .	comprising a plurality of individual compartments; comprising two or more bag-like members, one within the other (B60R 21/232 takes precedence)	21/26005	. . . . .	{the inflation fluid being transferred to the inflatable member by the mechanical deformation of the fluid container during an impact}
2021/23308	. . . . .	{the individual compartments defining the external shape of the bag}	2021/26011	. . . . .	{using a filter through which the inflation gas passes}
2021/23316	. . . . .	{Inner seams, e.g. creating separate compartments or used as tethering means}	2021/26017	. . . . .	{a cooling agent being added to the inflation fluid}
2021/23324	. . . . .	{Inner walls crating separate compartments, e.g. communicating with vents}	2021/26023	. . . . .	{for filling the bag with foam}
2021/23332	. . . . .	{using independent bags, one within the other}	2021/26029	. . . . .	{Ignitors}
21/2334	. . . . .	Expansion control features	2021/26035	. . . . .	{triggered by mechanical means}
21/2338	. . . . .	Tethers	2021/26041	. . . . .	{of elongated shape}
2021/23382	. . . . .	{Internal tether means}	2021/26047	. . . . .	{of film shape}
2021/23384	. . . . .	{having ends which are movable or detachable during deployment}	2021/26052	. . . . .	{using fluid materials}
2021/23386	. . . . .	{External tether means}	2021/26058	. . . . .	{using a combination of inflators}
2021/23388	. . . . .	{having ends which are movable or detachable during deployment}	2021/26064	. . . . .	{characterised by auto-ignition means}
21/2342	. . . . .	Tear seams	2021/2607	. . . . .	{characterised by heating or heat insulating means, e.g. for use under extreme temperatures}
21/2346	. . . . .	Soft diffusers	2021/26076	. . . . .	{characterised by casing}
21/235	. . . . .	characterised by their material	2021/26082	. . . . .	{Material}
2021/23504	. . . . .	{characterised by material}	2021/26088	. . . . .	{Plastic}
2021/23509	. . . . .	{Fabric}	2021/26094	. . . . .	{characterised by fluid flow controlling valves}
2021/23514	. . . . .	{coated fabric}	21/261	. . . . .	with means other than bag structure to diffuse or guide inflation fluid
2021/23519	. . . . .	{Resin (for coating fabric B60R 2021/23514)}	2021/2612	. . . . .	{Gas guiding means, e.g. ducts}
2021/23523	. . . . .	{Composite (coated fabric B60R 2021/23514)}	2021/2615	. . . . .	{for diverting the gas into a plurality of bags}
2021/23528	. . . . .	{Metal}	2021/2617	. . . . .	{Curtain bag nozzles}
2021/23533	. . . . .	{characterised by the manufacturing process}	21/262	. . . . .	Elongated tubular diffusers, e.g. curtain-type
2021/23538	. . . . .	{Sewing}	21/263	. . . . .	using a variable source, e.g. plural stage or controlled output (hybrid inflators B60R 21/272)
2021/23542	. . . . .	{Weaving}	2021/2633	. . . . .	{with a plurality of inflation levels}
2021/23547	. . . . .	{one piece weaving}	2021/2636	. . . . .	{The volume of gas being continuously adjustable}
2021/23552	. . . . .	{Knitting}	21/264	. . . . .	using instantaneous generation of gas, e.g. pyrotechnic (B60R 21/268 takes precedence)
2021/23557	. . . . .	{Molding}	2021/2642	. . . . .	{comprising a plurality of combustion chambers or sub-chambers}
2021/23561	. . . . .	{Sealing}	21/2644	. . . . .	{using only solid reacting substances, e.g. pellets, powder}
2021/23566	. . . . .	{Nesting of panels, i.e. for material utilisation}	21/2646	. . . . .	{the reacting substances being supported by the inflatable member walls, or by a flexible support within it}
2021/23571	. . . . .	{characterised by connections between panels}	2021/2648	. . . . .	{comprising a plurality of combustion chambers or sub-chambers}
2021/23576	. . . . .	{Sewing}	21/268	. . . . .	using instantaneous release of stored pressurised gas {(B60R 21/26005 takes precedence)}
2021/2358	. . . . .	{Bonding}	2021/2685	. . . . .	{comprising a plurality of pressure chambers}
2021/23585	. . . . .	{Vulcanisation}	21/272	. . . . .	with means for increasing the pressure of the gas just before or during liberation, e.g. hybrid inflators
2021/2359	. . . . .	{Welding}	2021/2725	. . . . .	{using a fluid fuel gas generator}
2021/23595	. . . . .	{Sealing}	21/274	. . . . .	characterised by means to rupture or open the fluid source
21/237	. . . . .	characterised by the way they are folded	21/276	. . . . .	with means to vent the inflation fluid source, e.g. in case of overpressure {(B60R 21/30 takes precedence; venting means on inflatable member walls B60R 21/239)}
2021/2375	. . . . .	{Folding devices}			
21/239	. . . . .	characterised by their venting means			
2021/2395	. . . . .	{comprising means to control the venting}			
21/26	. . . . .	characterised by the inflation fluid source or means to control inflation fluid flow {(arrangement or mounting thereof to the vehicle B60R 21/20 ; blasting cartridges for producing gas under pressure in general F42B 3/04 ; initiators or igniters therefor F42B 3/10)}			

2021/2765	. . . . {comprising means to control the venting}	22/10	. specially adapted for children or animals (children's seats B60N 2/24)
21/30	. . . with means to draw ambient air into the flow line and mix such air with the inflation fluid		
21/33	. . . Arrangements for non-electric triggering of inflation (electrical circuits for triggering safety arrangements B60R 21/01)		
2021/335	. . . . {Connections between collision detecting means and inflators using pyrotechnic transmission lines}		
21/34	. Protecting non-occupants of a vehicle, e.g. pedestrians (B60R 19/02 takes precedence)	22/105	. . {for children (adaptation of children's seats for seat belts B60N 2/265 , B60N 2/2803)}
2021/343	. . {using deformable body panel, bodywork or components}	22/12	. Construction of belts or harnesses (B60R 21/18 takes precedence {; woven fabrics for safety belts D03D 1/0005 })
2021/346	. . {means outside vehicle body}	22/14	. . incorporating enlarged restraint areas, e.g. vests, nets {, crash pads, optionally for children (crash pads for occupants' safety on vehicles in general B60R 21/02) }
21/36	. . using airbags	22/16	. . using belts which become permanently deformed, i.e. one time use
21/38	. . using means for lifting bonnets	22/18	. Anchoring devices
22/00	Safety belts or body harnesses in vehicles (safety belts or body harnesses in general A62B 35/00)	2022/1806	. . {for buckles}
22/001	. {Knee, leg or head belts}	2022/1812	. . {Connections between seat belt and buckle tongue}
2022/003	. {for restraining detainees}	2022/1818	. . {Belt guides}
2022/005	. {for restraining luggages}	2022/1825	. . . {using rollers}
2022/006	. {Sleeve or tubular members enveloping the seat belt for enhancing comfort or protection}	2022/1831	. . . {comprising a slotted plate sliding in its plane, e.g. inside circular guides}
2022/008	. {Belts; Fixing thereof specially adapted for pregnant users}	2022/1837	. . . {comprising a universal mounting, e.g. spherical or cardan-type}
22/02	. Semi-passive restraint systems, e.g. systems applied or removed automatically but not both {; Manual restraint systems (knee, leg or head belts B60R 22/001 ; devices for releasing in an emergency, remote or automatic unbuckling devices B60R 22/32)}	2022/1843	. . . {comprising an elongated sleeve}
2022/021	. . {Means for holding the tongue or buckle in a non-use position, e.g. for easy access by the user}	22/185	. . with stopping means for acting directly upon the belt in an emergency, e.g. by clamping or friction (B60R 22/195 takes precedence ; combined with the retractor B60R 22/42)}
22/022	. . {with means for facilitating access to rear seats in two-door cars}	22/1855	. . . {the means being sensitive to belt tension}
22/023	. . {Three-point seat belt systems comprising two side lower and one side upper anchoring devices (B60R 22/022 , B60R 22/03 take precedence)}	22/19	. . with means for reducing belt tension during use under normal conditions (included in the retractor B60R 22/44)}
22/024	. . . {Adaptations for use by small passengers, e.g. children (B60R 22/20 takes precedence ; using belt anti-slip devices B60R 22/30)}	22/195	. . with means to tension the belt in an emergency, {e.g. means of the through-anchor or splitted reel type}(electrical circuits for triggering safety arrangements {B60R 21/01})
2022/025	. . . {Adaptations for use with children seats or luggages}		
2022/026	. . . {at least two ends of the belt being retractable after use}		
2022/027	. . {Four-point seat belt systems, e.g. with the two upper points connected together}		
2022/028	. . {specially adapted for use in sleeping position, e.g. for reclining seats}		
2022/029	. . {Belt storage; Devices or systems for controlling winding up of unused seat belt}	22/1951	. . . {characterised by arrangements in vehicle or relative to seat belt}
22/03	. . Means for presenting the belt or part thereof to the wearer {, e.g. foot-operated}	22/1952	. . . {Transmission of tensioning power by cable; Return motion locking means therefor}
22/04	. Passive restraint systems, i.e. systems both applied and removed automatically, e.g. by movement of the vehicle door	22/1953	. . . . {the cable being pulled by mechanical means, e.g. pre-stressed springs, bumper displacement during crash}
22/06	. . having the belt or harness connected to a member slidable in a vehicle-mounted track	22/1954	. . . {characterised by fluid actuators, e.g. pyrotechnic gas generators (actuating a cable B60R 22/1952)}
22/08	. . having the belt retractor mounted on or in a vehicle closure, e.g. the door	22/1955	. . . . {Linear actuators}
		22/1956	. . . . {Mechanical triggering means therefor (also adapted for air bag inflators B60R 21/33)}
		2022/1957	. . . {characterised by electric actuators}

NOTE

Groups

[B60R 22/02](#) {[B60R 22/022](#)} - [B60R 22/08](#), [B60R 22/18](#) - [B60R 22/48](#) take precedence over group [B60R 22/10](#)

NOTE

If the type of belt tensioner is not specified and can be used indifferently for pulling belt anchors or rotating belt reels, the documents are classified in [B60R 22/46](#)

- 22/1958 . . . {characterised by spring actuators
([B60R 22/1953](#) takes precedence)}
- 22/20 . . adjustable in position, e.g. in height
- 22/201 . . . {with the belt anchor connected to a slider
movable in a vehicle-mounted track (for
passive restraint systems [B60R 22/06](#))}
- 22/202 {the slider comprising spring-actuated
locking means ([B60R 22/205](#) takes
precedence)}
- 22/203 {the locking means being movably
mounted on the slider}
- 22/205 {the slider comprising emergency actuated
locking means}
- 22/206 . . . {Adjustable stop members for restraint systems
comprising belt anchor vehicle mounted tracks,
e.g. for passive seat belts}
- 2022/207 . . . {Horizontally or transversally adjustable}
- 2022/208 . . . {by automatic or remote control means}
- 22/22 . . secured to the vehicle floor
- 22/24 . . secured to the side, door, or roof of the vehicle
- 22/26 . . secured to the seat
- 2022/263 . . . {Front seats}
- 2022/266 . . . {Rear seats, e.g. benches}
- 22/28 . incorporating energy-absorbing devices {(belt
anchors provided with energy-absorbing means
for protecting the occupants in case of physical
contact therewith [B60R 21/055](#); belt retractors
comprising energy-absorbing means [B60R 22/341](#),
[B60R 22/4676](#))}
- 2022/281 . . {for buckles}
- 2022/282 . . {using fluids or vico-elastic materials}
- 2022/283 . . {using tearing or scoring of material}
- 2022/284 . . {using electric or magnetic braking means}
- 2022/285 . . {using friction surfaces}
- 2022/286 . . {using deformation of material}
- 2022/287 . . . {of torsion rods or tubes}
- 2022/288 . . {with means to adjust or regulate the amount of
energy to be absorbed}
- 2022/289 . . {Energy-absorption curves}
- 22/30 . Coupling devices other than buckles, including
length-adjusting fittings {or anti-slip devices
(adaptations of manual three-point seat belt systems
for use by small passengers using other means
than belt anti-slip devices [B60R 22/024](#); buckles
[A44B 11/00](#); releasable fastenings in general
[F16B](#))}
- 22/32 . Devices for releasing in an emergency, e.g. after an
accident {; Remote or automatic unbuckling devices
(unlocking devices for retractors [B60R 22/3416](#))}
- 22/321 . . {using electric means}
- 22/322 . . {using automatic actuating means ([B60R 22/321](#)
takes precedence)}
- 22/324 . . . {triggered by strong traction on the seat belt,
e.g. with temporisation}
- 22/325 . . {using remote control means ([B60R 22/321](#),
[B60R 22/322](#) take precedence)}
- 2022/327 . . {using pyrotechnic means}
- 2022/328 . . {comprising means for cutting the belt}
- 22/34 . Belt retractors, e.g. reels (anchoring devices {, e.g.
guide loops} , with means to tension the belt in an
emergency [B60R 22/195](#))
- 2022/3402 . . {Retractor casings; Mounting thereof}
- 22/3405 . . {of the non-rotary type}
- 22/3408 . . {without locking means ([B60R 22/3405](#) takes
precedence)}
- 22/341 . . {comprising energy-absorbing means}
- 22/3413 . . . {operating between belt reel and retractor
frame ([B60R 22/4676](#) takes precedence)}
- 22/3416 . . {Unlocking devices for retractors ([B60R 22/3405](#)
takes precedence)}
- 2022/3419 . . {with end lock preventing means}
- 2022/3421 . . {with means for locking the belt reel in a non-use
position, e.g. for seat mounted retractor when the
seat is in a non-locked condition}
- 2022/3424 . . {Multi-spool or multi-belt retractors}
- 2022/3427 . . {Seat belt connection on reels}
- 22/343 . . with electrically actuated locking means
{([B60R 22/3405](#) takes precedence)}
- 22/347 . . with means for permanently locking the retractor
during the wearing of the belt ({[B60R 22/3405](#) ,
[B60R 22/343](#), [B60R 22/415](#) take precedence)}
- 2022/3475 . . . {having means for acting directly upon the belt,
e.g. by clamping or friction}
- 22/35 . . . the locking means being automatically actuated
- 22/353 in response to belt movement when a wearer
applies the belt
- 2022/3535 {comprising anti-cinch devices}
- 22/357 in response to fastening of the belt buckle
- 22/36 . . self-locking in an emergency ({[B60R 22/3405](#) ,
[B60R 22/343](#) take precedence)}
- 22/38 . . . responsive only to belt movement
- 2022/385 {with adjustable sensitivity}
- 22/40 . . . responsive only to vehicle movement
- 2022/401 {with adjustable sensor}
- 2022/402 {automatically adjustable to keep a
vertical position, e.g. irrespective of seat or
vehicle tilting}
- 2022/403 {using externally controlled means, e.g.
linked with seat back hinge}
- 2022/404 {with remote sensor, e.g. for mounting on
seat}
- 22/405 . . . responsive to belt movement and vehicle
movement
- 22/41 . . . with additional means for preventing locking
{during unwinding} under predetermined
conditions
- 22/415 . . . with additional means allowing a permanent
locking of the retractor during the wearing of
the belt
- 22/42 . . . having means for acting directly upon the belt,
e.g. by clamping or friction {(not combined
with the retractor [B60R 22/185](#))}
- 22/44 . . with means for reducing belt tension during
use under normal conditions {(not included in
the retractor [B60R 22/19](#); [B60R 22/3405](#) takes
precedence)}
- 2022/4406 . . . {Spring shapes; Spring characteristic; Springs
with adjustable anchoring means}
- 2022/4413 . . . {by connecting the retracting spring to the
belt reel by means of a transmission which
decreases the spring force when the belt is
pulled out, e.g. using conical pulleys}
- 2022/442 . . . {using one spring and one additional retraction
device in parallel}
- 2022/4426 {the additional retraction device being a
second spring}
- 2022/4433 {externally controlled}

2022/444	. . . . {the additional retraction device being an electric actuator}	2022/4808	. . . {Sensing means arrangements therefor}
2022/4446	. . . {using one spring and one additional retraction device in series}	2022/4816	. . . {for sensing locking of buckle}
2022/4453	. . . . {the additional retraction device being a second spring}	2022/4825	. . . {for sensing amount of belt wound on retractor}
2022/446	. . . . . {with external control means}	2022/4833	. . . {for sensing locking of retractor}
2022/4466	. . . . {the additional retraction device being an electric actuator}	2022/4841	. . . {for sensing belt tension}
2022/4473	. . . {using an electric retraction device (combined with a spring B60R 2022/444 , B60R 2022/4466)}	2022/485	. . . {for sensing belt anchor position, belt orientation, or the like}
2022/448	. . . {using a fluid actuated retraction device}	2022/4858	. . . {for sensing pressure on seat}
2022/4486	. . . {for cancelling the belt tension}	2022/4866	. . . {Displaying or indicating arrangements thereof}
2022/4493	. . . {for braking the belt reel using friction surfaces or the like}	2022/4875	. . . {on vehicle exterior}
22/46	. . {Reels} with means to tension the belt in an emergency {by forced winding up}(electrical circuits for triggering safety arrangements B60R 21/01 ; tensioners using reels only guiding the belt during normal use, e.g. splitted reels B60R 22/195))	2022/4883	. . . {Interlock systems}
22/4604	. . . {characterised by arrangements in vehicle or relative to seat belt}	2022/4891	. . . {preventing use of the vehicle when the seatbelt is not fastened}
2022/4609	. . . . {using a plurality of tensioners}	25/00	Fittings or systems for preventing or indicating unauthorised use or theft of vehicles (locks for vehicles E05B 77/00-E05B 85/00)
2022/4614	. . . . {one pretensioner acting on a plurality of belts}	25/001	. {Anti-theft devices acting on jacking means or props, e.g. for trailers}
22/4619	. . . {Transmission of tensioning power by cable, e.g. using a clutch on reel side}	25/002	. {Locking of control actuating or transmitting means (of steering mechanism B60R 25/02)}
22/4623	. . . . {the cable being pulled by mechanical means, e.g. pre-stressed springs, bumper displacement during crash}	25/003	. . {locking of control actuating means}
22/4628	. . . {characterised by fluid actuators, e.g. pyrotechnic gas generators (actuating a cable B60R 22/4619)}	25/005	. . . {of foot actuated control means (rods connecting pedals and steering wheels B60R 25/0221)}
22/4633	. . . . {Linear actuators, e.g. comprising a piston moving along reel axis and rotating along its own axis}	25/006	. . . . {using means preventing access, e.g. boxes, shutters}
2022/4638	. . . . . {comprising a piston moving along or in parallel to the reel axis}	25/007	. . . {of hand actuated control means}
2022/4642	. . . . {the gas directly propelling a flexible driving means, e.g. a plurality of successive masses, in a tubular chamber}	25/008	. . . . {comprising means for locking two or more control means together, e.g. hand-brake handle and gear shift lever}
2022/4647	. . . . . {the driving means being a belt, a chain or the like}	25/01	. operating on vehicle systems or fittings, e.g. on doors, seats or windscreens
22/4652	. . . . {Mechanical triggering means therefor (also adapted for air bag inflators B60R 21/33)}	25/012	. . {Airbags triggered}
2022/4657	. . . . {comprising a plurality of charges}	25/014	. . {comprising means for locking the seat or parts thereof in a driving prevention position}
2022/4661	. . . . {comprising venting means, e.g. for avoiding overpressure in case of fire or for allowing return motion with energy absorption}	25/016	. . {comprising means for shuttering the windscreen or part thereof}
2022/4666	. . . {characterised by electric actuators}	25/018	. . {Thief traps}
22/4671	. . . {characterised by spring actuators (B60R 22/4623 takes precedence)}	25/02	. . operating on the steering mechanism
22/4676	. . . {comprising energy-absorbing means operating between belt reel and retractor frame}	25/021	. . . restraining movement of the steering column or steering wheel hub, e.g. restraining means controlled by ignition switch
2022/468	. . . {characterised by clutching means between actuator and belt reel}	25/02102	. . . . {with supplementary safety device preventing operation of the starter of an engine already running}
2022/4685	. . . {with means to adjust or regulate the tensioning force in relation to external parameters}	25/02105	. . . . {Arrangement of the steering column thereof}
2022/469	. . . {reusable}	25/02107	. . . . . {comprising overload clutching means}
2022/4695	. . . {without winding function during normal use}	25/0211	. . . . {comprising a locking member radially and linearly moved towards the steering column}
22/48	. Control systems, alarms, or interlock systems, for the correct application of the belt or harness	25/02113	. . . . . {manually actuated, e.g. using removable locking means}
		25/02115	. . . . . {key actuated}
		25/02118	. . . . . {with linear bolt motion parallel to the lock axis}
		25/02121	. . . . . {comprising safety devices avoiding locking until removal of the key}
		25/02123	. . . . . {using an axially slidable lock cylinder}
		25/02126	. . . . . {with linear bolt motion perpendicular to the lock axis}

25/02128	. . . . . {comprising safety devices avoiding locking until removal of the key}	25/093	. . . {comprising ground-engaging means}
25/02131	. . . . . {by using an axially slidable lock cylinder}	25/096	. . . {comprising means for deflating tyres}
25/02134	. . . . {comprising a locking member axially moved along the steering column}	25/10	. actuating a signalling device
25/02136	. . . . . {manually actuated, e.g. using removable locking members}	25/1001	. . {Alarm systems associated with another car fitting or mechanism, e.g. door lock or knob, pedals (features related to the general power supply B60R 25/1018)}
25/02139	. . . . . {key actuated}	25/1003	. . {Alarm systems characterised by arm or disarm features}
25/02142	. . . . {comprising externally controlled safety devices for preventing locking during vehicle running condition}	25/1004	. . {Alarm systems characterised by the type of sensor, e.g. current sensing means (using door lock sensors B60R 25/1001)}
25/02144	. . . . . {interlocked with gear box or gear lever}	25/1006	. . . {Mechanical sensors, e.g. pendulums (B60R 25/101 takes precedence)}
25/02147	. . . . {comprising a locking member having other than linear, axial or radial motion, e.g. rotatable; Steering column locking using balls, rollers or the like}	25/1007	. . . . {comprising associated circuitry}
25/0215	. . . . using electric means, e.g. electric motors or solenoids	25/1009	. . . {Sonic sensors; Signal treatment therefor}
25/02153	. . . . . {comprising a locking member radially and linearly moved towards the steering column}	25/101	. . . {Fuel level sensors}
25/02156	. . . . . {comprising a locking member axially moved along the steering column}	25/1012	. . . {Zone surveillance means, e.g. parking lots, truck depots}
25/022	. . . operating on the steering wheel, e.g. bars locked to the steering wheel rim (B60R 25/021 takes precedence)	2025/1013	. . {Alarm systems characterised by the type of warning signal, e.g. visual, audible}
25/0221	. . . . {restraining means joining the steering wheel with another part of the car, e.g. pedals}	2025/1015	. . . {Signal coming from the exhaust}
25/0222	. . . . {by disjoining steering wheel and column}	2025/1016	. . . {Remote signals alerting owner or authorities, e.g. radio signals}
25/0224	. . . . {restraining of steering wheel by collapsing against column}	25/1018	. . {Alarm systems characterised by features related to the general power supply}
25/0225	. . . . {using a rod locked on the steering wheel rim (B60R 25/0221 takes precedence)}	25/102	. . a signal being sent to a remote location, e.g. a radio signal being transmitted to a police station, a security company or the owner
25/0227	. . . . {using means preventing access, e.g. boxes enclosing the steering wheel (B60R 25/014 takes precedence)}	25/1025	. . . {preventing jamming or interference of said signal}
25/0228	. . . . {comprising a locking bolt or fork slidable between or around the steering wheel spokes}	25/104	. . characterised by the type of theft warning signal, e.g. visual or audible signals with special characteristics
25/023	. . . Countermeasures against the physical destruction of the steering lock	25/1045	. . . {Signal coming from the exhaust}
25/04	. . operating on the propulsion system, e.g. engine or drive motor	25/20	. Means to switch the anti-theft system on or off
2025/0405	. . . {from the external}	25/2009	. . {Antitheft state indicator}
2025/041	. . . {Preventing use of engine operating on the fluid supply}	25/2018	. . {Central base unlocks or authorises unlocking}
2025/0415	. . . {with safe immobilisation}	25/2027	. . {with data signals passing through the human body}
25/042	. . . operating on the fuel supply	25/2036	. . {by using the door logic and door and engine unlock means}
25/043	. . . by blocking the exhaust	25/2045	. . {by hand gestures}
25/044	. . . by limiting or blocking the air supply	25/2054	. . {by foot gestures}
25/045	. . . by limiting or cutting the electrical supply to the propulsion unit	25/2063	. . {Ignition switch geometry}
25/06	. . . operating on the vehicle transmission	25/2072	. . {with means for preventing jamming or interference of a remote switch control signal}
25/063	. . . . {Locking of foot actuated control actuating means}	25/2081	. . {combined with personal settings of other vehicle devices, e.g. mirrors, seats, steering wheels}
25/066	. . . . {Locking of hand actuated control actuating means}	25/209	. . {Remote starting of engine}
25/08	. . operating on brakes or brake systems	25/21	. . using hidden switches
25/083	. . . {Locking of foot-actuated control actuating means}	25/22	. . using mechanical identifiers
25/086	. . . {Locking of hand-actuated control actuating means}	25/225	. . . {key in lock presence switch}
25/09	. . by restraining wheel rotation, e.g. wheel clamps	25/23	. . using manual input of alphanumerical codes
		25/24	. . using electronic identifiers containing a code not memorised by the user
		25/241	. . . {whereby access privileges are related to the identifiers}
		25/243	. . . {with more than one way to gain access}
		25/245	. . . {where the antenna reception area plays a role}
		25/246	. . . {characterised by the challenge triggering}
		25/248	. . . {Electronic key extraction prevention}
		25/25	. . using biometry

25/252	. . . {Fingerprint recognition}	2300/308	. . . by overlaying the real scene, e.g. through a head-up display on the windscreen
25/255	. . . {Eye recognition}	2300/40	. characterised by the details of the power supply or the coupling to vehicle components
25/257	. . . {Voice recognition}	2300/402	. . Image calibration
25/30	. Detection related to theft or to other events relevant to anti-theft systems	2300/404	. . triggering from stand-by mode to operation mode
25/302	. . {using recording means, e.g. black box}	2300/406	. . using wireless transmission
25/305	. . {using a camera}	2300/408	. . using a data bus
25/307	. . {using data concerning maintenance or configuration}	2300/50	. characterised by the display information being shared, e.g. external display, data transfer to other traffic participants or centralised traffic controller
25/31	. . of human presence inside or outside the vehicle	2300/60	. characterised by monitoring and displaying vehicle exterior scenes from a transformed perspective
25/32	. . of vehicle dynamic parameters, e.g. speed or acceleration	2300/602	. . with an adjustable viewpoint
25/33	. . of global position, e.g. by providing GPS coordinates	2300/605	. . . the adjustment being automatic
25/34	. . of conditions of vehicle components, e.g. of windows, door locks or gear selectors	2300/607	. . from a bird's eye viewpoint
25/40	. Features of the power supply for the anti-theft system, e.g. anti-theft batteries, back-up power supply or means to save battery power	2300/70	. characterised by an event-triggered choice to display a specific image among a selection of captured images
25/403	. . {Power supply in the vehicle}	2300/80	. characterised by the intended use of the viewing arrangement
25/406	. . {Power supply in the remote key}	2300/8006	. . for monitoring and displaying scenes of vehicle interior, e.g. for monitoring passengers or cargo
99/00	Subject matter not provided for in other groups of this subclass	2300/8013	. . . for child monitoring
2099/005	. {Protections against martens or rodents}	2300/802	. . for monitoring and displaying vehicle exterior blind spot views
2225/00	Means indicating the functioning state of the alarm system, e.g. indicating arming, using leds	2300/8026	. . . in addition to a rear-view mirror system
2300/00	Details of viewing arrangements using cameras and displays, specially adapted for use in a vehicle	2300/8033	. . for pedestrian protection
2300/10	. characterised by the type of camera system used	2300/804	. . for lane monitoring
2300/101	. . using cameras with adjustable capturing direction	2300/8046	. . for replacing a rear-view mirror system
2300/102	. . using 360 degree surveillance camera system	2300/8053	. . for bad weather conditions or night vision
2300/103	. . using camera systems provided with artificial illumination device, e.g. IR light source	2300/806	. . for aiding parking
2300/105	. . using multiple cameras	2300/8066	. . for monitoring rearward traffic
2300/106	. . using night vision cameras	2300/8073	. . for vehicle security, e.g. parked vehicle surveillance, burglar detection
2300/107	. . using stereoscopic cameras	2300/808	. . for facilitating docking to a trailer
2300/108	. . using 'non-standard' camera systems, e.g. camera sensor used for additional purposes i.a. rain sensor, camera sensor split in multiple image areas	2300/8086	. . for vehicle path indication
2300/20	. characterised by the type of display used	2300/8093	. . for obstacle warning
2300/202	. . displaying a blind spot scene on the vehicle part responsible for the blind spot	2325/00	Indexing scheme relating to vehicle anti-theft devices
2300/205	. . using a head-up display	2325/10	. Communication protocols, communication systems of vehicle anti-theft devices
2300/207	. . using multi-purpose displays, e.g. camera image and navigation or video on same display	2325/101	. . Bluetooth
2300/30	. characterised by the type of image processing	2325/103	. . Near field communication [NFC]
2300/301	. . combining image information with other obstacle sensor information, e.g. using RADAR/LIDAR/SONAR sensors for estimating risk of collision	2325/105	. . Radio frequency identification data [RFID]
2300/302	. . combining image information with GPS information or vehicle data, e.g. vehicle speed, gyro, steering angle data	2325/106	. . Internet
2300/303	. . using joined images, e.g. multiple camera images	2325/108	. . Encryption
2300/304	. . using merged images, e.g. merging camera image with stored images	2325/20	. Communication devices for vehicle anti-theft devices
2300/305	. . . merging camera image with lines or icons	2325/202	. . Personal digital assistant [PDA]
2300/306	. . using a re-scaling of images	2325/205	. . Mobile phones
2300/307	. . virtually distinguishing relevant parts of a scene from the background of the scene	2325/207	. . Satellites
		2325/30	. Vehicles applying the vehicle anti-theft devices
		2325/302	. . Airplanes
		2325/304	. . Boats
		2325/306	. . Motorcycles
		2325/308	. . Industrial vehicles
		2325/40	. Programmable elements