CPC COOPERATIVE PATENT CLASSIFICATION

B PERFORMING OPERATIONS; TRANSPORTING
(NOTES omitted)

TRANSPORTING

B60 VEHICLES IN GENERAL
(NOTE omitted)

B60G VEHICLE SUSPENSION ARRANGEMENTS (air-cushion vehicles B60V; {cycle suspensions B62K 25/00})

NOTES

1. Attention is drawn to the Note following the title of class B60.
2. {Indexing codes B60G 2200/00 - B60G 2800/00 are dedicated to particular aspects of suspension arrangements:
   - B60G 2200/00 refers to the type of suspension arrangement;
   - B60G 2202/00 refers to the suspension elements used (springs, dampers and actuators);
   - B60G 2204/00 refers to mounting features of suspension elements;
   - B60G 2206/00 refers to constructional and manufacturing details of suspension elements;
   - B60G 2300/00 refers to the type of vehicle;
   - B60G 2400/00 - B60G 2800/00 refer to the electronic control of suspension arrangements, whereby:
     - B60G 2400/00 refers to input parameters of the control;
     - B60G 2401/00 refers to types of sensors used;
     - B60G 2500/00 refers to the controlled action or device;
     - B60G 2600/00 refers to particular details of the control system;
     - B60G 2800/00 refers to the result to be achieved by the control action.}

WARNINGS

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:
   B60G 23/00 covered by B60G 17/0165
2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

1/00 **Suspensions with rigid connection between axle and frame**

1/02 . with continuous axle

1/04 . with divided axle

3/00 **Resilient suspensions for a single wheel** (pivoted suspensions arms per se, attachment thereof to sprung part of the vehicle, buffer means for limiting movement of arms B60G 7/00; {rigid axle suspensions B60G 9/00;} characterised by arrangement, location or type of springs B60G 11/00)

3/01 . the wheel being mounted for sliding movement, e.g. in or on a vertical guide (camber maintaining means B60G 3/26)

3/02 . with a single pivoted arm

3/04 . . the arm being essentially transverse to the longitudinal axis of the vehicle

3/06 . . . the arm being rigid

3/08 . . . . the arm forming the axle housing

3/10 . . . the arm itself being resilient, e.g. leaf spring {(B60G 7/003 takes precedence)}

3/12 . . the arm being essentially parallel to the longitudinal axis of the vehicle

3/14 . . . the arm being rigid

3/145 . . . . {the arm forming the axle housing}

3/16 . . . the arm itself being resilient, e.g. leaf spring {(B60G 7/003 takes precedence)}

3/18 . with two or more pivoted arms, e.g. parallelogram

3/185 . . {the arms being essentially parallel to the longitudinal axis of the vehicle}

3/20 . . all arms being rigid

3/202 . . . {having one longitudinal arm and two parallel transversal arms, e.g. dual-link type strut suspension}

3/205 . . . . {with the pivotal point of the longitudinal arm being on the vertical plane defined by the wheel rotation axis and the wheel ground contact point}

3/207 . . . {the arms being essentially parallel to the longitudinal axis of the vehicle}

3/22 . . . a rigid arm forming the axle housing

3/225 . . . . {the arm being of the trailing wishbone type}

3/24 . . . a rigid arm being formed by the live axle {(B60G 3/22, B60G 3/26 take precedence; driving arrangements B60K 17/22, B60K 17/30, B60K 17/32)}

3/26 . . . Means for maintaining substantially-constant wheel camber during suspension movement {; Means for controlling the variation of the wheel position during suspension movement (B60G 3/202, B60G 3/22, B60G 7/003, B60G 7/006 take precedence; means for adjusting camber, castor, or toe-in B62D 17/00)}

3/265 . . . . {with a strut cylinder contributing to the suspension geometry by being linked to the wheel support via an articulation}

3/28 . . at least one of the arms itself being resilient, e.g. leaf spring {(B60G 7/003 takes precedence)}

3/285 . . . {the arm being essentially parallel to the longitudinal axis of the vehicle}

5/00 Resilient suspensions for a set of tandem wheels or axles having interrelated movements

5/005 . {the wheels being fixed on a non-pivotal structure, e.g. a sliding mount}

5/01 . the set being characterised by having more than two successive axles

5/02 . mounted on a single pivoted arm {, e.g. the arm being rigid}

5/025 . . {the arm being transverse to the longitudinal axis of the vehicle}

5/03 . . the arm itself being resilient, e.g. a leafspring (B60G 5/053 takes precedence)

5/04 . with two or more pivoted arms, the movements of which are resiliently interrelated {, e.g. the arms being rigid}

5/043 . . {the arms being transverse to the longitudinal axis of the vehicle}

5/047 . . at least one arm being resilient, e.g. a leafspring (B60G 5/053 takes precedence)

5/053 . . a leafspring being used as equilibration unit between two axle-supporting units

5/06 . . the arms turning on a common pivot {, e.g. being rigid}

5/065 . . . {at least one arm being resilient}

7/00 Pivoted suspension arms; Accessories thereof (means for maintaining substantially constant wheel camber during suspension movement B60G 3/26; {articulations for wheels B60G 5/00; leaf spring attaching means B60G 11/10, B60G 11/12; trailing arm twist beam axle attaching means B60G 21/052; articulations in general F16C})

7/001 . {Suspension arms, e.g. constructional features (B60G 7/006 takes precedence)}

7/003 . . {of adjustable length}

7/005 . {Ball joints (B60G 7/006 takes precedence; for steering linkage B62D 7/16; ball joints per se F16C 11/06)}

7/006 . {Attaching arms to sprung or unsprung part of vehicle, characterised by comprising attachment means controlled by an external actuator, e.g. a fluid or electrical motor (B62D 7/146 takes precedence)}

7/008 . {Attaching arms to unsprung part of vehicle (B60G 7/005, B60G 7/006 take precedence)}

7/02 . Attaching arms to sprung part of vehicle {(B60G 7/006 takes precedence)}

7/04 . Buffer means for limiting movement of arms {(stops limiting fluid passage in fluid dampers F16F 9/49; stroke-limiting stops for fluid dampers F16F 9/58)}

9/00 Resilient suspensions of a rigid axle or axle housing for two or more wheels {(the axle being a part of a set of tandem axles B60G 5/00-B60G 5/065; with leaf springs B60G 11/02-B60G 11/08)**}**

9/003 . {the axle being rigidly connected to a trailing guiding device}

9/006 . {the axle being connected to two trailing arms with only one of them being rigidly connected to the axle}

9/02 . the axle or housing being pivotally mounted on the vehicle {, e.g. the pivotal axis being parallel to the longitudinal axis of the vehicle (B60G 9/003 takes precedence)}

9/022 . . {the axle having an imaginary pivotal point}

9/025 . . . {using linkages for the suspension of the axle allowing its lateral swinging displacement}

9/027 . . {the axle having either a triangular, a "T" or "U" shape and being directly articulated with the chassis only by its middle apex, e.g. De Dion suspension}

9/04 . the axle or housing not being pivotally mounted on the vehicle {(B60G 9/003 takes precedence)}

11/00 Resilient suspensions characterised by arrangement, location or kind of springs (single wheel suspension by pivoted arm resilient in itself B60G 3/00; adjusting spring characteristic B60G 17/00; springs per se F16F)

NOTE

The term "torsion bar" includes torsion tube or the like. The term "rubber" includes synthetic substitutes of a similar nature.

11/003 . {Lubrication devices for springs and dampers (vehicle lubrication devices in general B60R 17/00; for leaf springs in general F16F 1/24)}

11/006 . {Centrally located spring units, e.g. all wheels being connected to a common spring unit (B60G 5/00, B60G 17/033 take precedence)}

11/02 . having leaf springs only {(B60G 11/006 takes precedence)}

11/025 . . {reparing devices for leaf springs}

11/04 . . arranged substantially parallel to the longitudinal axis of the vehicle

11/06 . . arranged obliquely to the longitudinal axis of the vehicle

11/08 . . arranged substantially transverse to the longitudinal axis of the vehicle

11/10 . . characterised by means specially adapted for attaching the spring to axle or sprung part of the vehicle

11/107 . . . Sliding or rolling mountings

11/113 . . . Mountings on the axle (B60G 11/107 takes precedence)

11/12 . . . Links, pins, or bushes

11/125 . . . . {Multiple-eye arrangements}

11/14 . having helical, spiral or coil springs only {(B60G 11/006 takes precedence)}

11/15 . . Coil springs resisting deflection by winding up

11/16 . . characterised by means specially adapted for attaching the spring to axle or sprung part of the vehicle

11/18 . having torsion-bar springs only {(B60G 11/006 takes precedence; having rubber springs of the torsional-energy-absorption type B60G 11/23)}

NOTE

B60G 11/184 takes precedence over B60G 11/181 - B60G 11/183

11/181 . . {arranged in a plane parallel to the longitudinal axis of the vehicle}

11/182 . . {arranged in a plane oblique to the longitudinal axis of the vehicle}

11/183 . . {arranged in a plane transverse to the longitudinal axis of the vehicle}

11/184 . . {the torsion-bar consisting of a bundle of torsion elements}

11/185 . . . {the elements being rods}

11/186 . . . . {of hexagonal cross-section}

11/187 . . . {the elements being leaf-springs loaded by twisting}

11/188 . . . {the elements being cables}

11/189 . . {the torsion spring consisting of a tube with a slit}

11/20 . . characterised by means specially adapted for attaching the spring to axle or sprung part of the vehicle

11/22 . having rubber springs only {(B60G 11/006 takes precedence)}

11/225 . . {Neidhart type rubber springs}

11/23 . . of the torsional-energy-absorption type

11/24 . . characterised by means specially adapted for attaching the spring to axle or sprung part of the vehicle

11/26 . having fluid springs only, e.g. hydropneumatic springs ({B60G 11/006,} B60G 15/12 take precedence)

11/265 . . {hydraulic springs}

11/27 . . wherein the fluid is a gas

11/28 . . characterised by means specially adapted for attaching the spring to axle or sprung part of the vehicle

11/30 . . having pressure fluid accumulator therefor, e.g. accumulator arranged in vehicle frame {(dampers accumulating utilisable energy B60G 13/14)}

11/32 . having springs of different kinds {(B60G 11/006 takes precedence)}

11/34 . . including leaf springs

11/36 . . . and also helical, spiral or coil springs

11/38 . . . and also rubber springs

11/40 . . . . the rubber springs being attached to the axle

11/42 . . . . the rubber springs being attached to sprung part of the vehicle

11/44 . . . and also torsion-bar springs

11/46 . . . and also fluid springs

11/465 . . . . {with a flexible wall}

11/48 . . not including leaf springs

11/50 . . . having helical, spiral or coil springs, and also torsion-bar springs

11/52 . . . having helical, spiral or coil springs, and also rubber springs

11/54 . . . . with rubber springs arranged within helical, spiral or coil springs

11/56 . . . having helical, spiral or coil springs, and also fluid springs

11/58 . . . . arranged coaxially

11/60 . . . having both rubber springs and torsion-bar springs

11/62 . . . having both rubber springs and fluid springs

11/64 . . . having both torsion-bar springs and fluid springs

13/00 **Resilient suspensions characterised by arrangement, location or type of vibration dampers** (adjusting damping effect B60G 17/06; vibration dampers per se F16F)

13/001 . {Arrangements for attachment of dampers (mounting arrangements of combined spring and damper units B60G 15/00; mountings of fluid dampers in general F16F 9/54)}

13/003 . . {characterised by the mounting on the vehicle body or chassis of the damper unit}

13/005 . . {characterised by the mounting on the axle or suspension arm of the damper unit}

13/006 . . . {on the stub axle}

13/008 . . . {involving use of an auxiliary cylinder (B60G 13/006 takes precedence)}

13/02 . having dampers dissipating energy, e.g. frictionally

13/04 . . mechanically, e.g. having frictionally-engaging springs as damping elements

13/06 . . of fluid type

13/08 . . . hydraulic

13/10 . . . pneumatic

13/12 . . . quasi-fluid, i.e. having powdered medium

13/14 . having dampers accumulating utilisable energy, e.g. compressing air {(fluid springs with an accumulator B60G 11/30)}

13/16 . having dynamic absorbers as main damping means, i.e. spring-mass system vibrating out of phase

13/18 . . combined with energy-absorbing means

15/00 **Resilient suspensions characterised by arrangement, location or type of combined spring and vibration damper, e.g. telescopic type** (combined spring and vibration-dampers per se F16F)

15/02 . having mechanical spring

15/04 . . and mechanical damper {or dynamic damper}

15/06 . . and fluid damper

15/061 . . . {with a coil spring being mounted inside the damper}

15/062 . . . {the spring being arranged around the damper (B60G 15/061, B60G 15/067, B60G 15/07 take precedence)}

15/063 . . . . {characterised by the mounting of the spring on the damper (B60G 15/065, B60G 15/066 take precedence)}

15/065 . . . . {characterised by the use of a combination of springs}

15/066 . . . . {the spring being different from a coil spring (B60G 15/065 takes precedence)}

15/067 . . . {characterised by the mounting on the vehicle body or chassis of the spring and damper unit}

15/068 . . . . {specially adapted for MacPherson strut-type suspension}

15/07 . . . the damper being connected to the stub axle and the spring being arranged around the damper {(B60G 15/068 takes precedence)}
15/08 . having fluid spring
15/10 . . and mechanical damper {or dynamic damper}
15/12 . . and fluid damper
15/14 . . . the damper being connected to the stub axle and the spring being arranged around the damper

17/00 Resilient suspensions having means for adjusting the spring or vibration-damper characteristics, for regulating the distance between a supporting surface and a sprung part of vehicle or for locking suspension during use to meet varying vehicular or surface conditions, e.g. due to speed or load {(levelling or stabilising systems for tippers B60P 1/045)}

17/002 . {by temperature regulation of the suspension unit, e.g. heat operated systems}
17/005 . Suspension locking arrangements {(for retractable wheels B62D 61/12)}
17/015 . the regulating means comprising electric or electronic elements ({B60G 17/002}, B60G 17/005 take precedence)
17/0152 . . {characterised by the action on a particular type of suspension unit (B60G 17/01941 takes precedence)}
17/0155 . . . {pneumatic unit}
17/0157 . . . {non-fluid unit, e.g. electric motor}
17/016 . . characterised by their responsiveness, when the vehicle is travelling, to specific motion, a specific condition, or driver input {(B60G 17/017 takes precedence)}
17/0161 . . . {mainly during straight-line motion (B60G 17/0164 takes precedence)}
17/0162 . . . {mainly during a motion involving steering operation, e.g. cornering, overtaking (B60G 17/0164 takes precedence)}
17/0163 . . . . {the control involving steering geometry, e.g. four-wheel steering}
17/0164 . . . {mainly during accelerating or braking}
17/0165 . . . to an external condition, e.g. rough road surface, side wind
17/017 . . characterised by their use when the vehicle is stationary, e.g. during loading, engine start-up or switch-off
17/018 . . characterised by the use of a specific signal treatment or control method
17/0182 . . . {involving parameter estimation, e.g. observer, Kalman filter}
17/0185 . . . for failure detection
17/019 . . characterised by the type of sensor or the arrangement thereof {(B60G 17/01941 takes precedence)}
17/01908 . . . {Acceleration or inclination sensors (characterised by the use of gyroscopes B60G 21/08)}
17/01916 . . . . {Mercury-switch type devices}
17/01925 . . . . {Pendulum-type devices}
17/01933 . . . {Velocity, e.g. relative velocity-displacement sensors}
17/01941 . . . {characterised by the use of piezo-electric elements, e.g. sensors or actuators}
17/0195 . . characterised by the regulation being combined with other vehicle control systems {(conjoint control of vehicle sub-units including control of suspension systems B60W 10/22)}
17/02 . Spring characteristics {, e.g. mechanical springs and mechanical adjusting means}(B60G 17/005, B60G 17/015 take precedence)
17/021 . . {the mechanical spring being a coil spring (B60G 17/0272 takes precedence)}
17/023 . . {the mechanical spring being a leaf spring (B60G 17/0275 takes precedence)}
17/025 . . {the mechanical spring being a torsion spring (B60G 17/0277, B60G 21/0553 take precedence)}
17/027 . . Mechanical springs regulated by fluid means (B60G 17/033 takes precedence)
17/0272 . . . {the mechanical spring being a coil spring}
17/0275 . . . {the mechanical spring being a leaf spring}
17/0277 . . . {the mechanical spring being a torsion spring (B60G 21/0553 takes precedence)}
17/033 . . characterised by regulating means acting on more than one spring
17/04 . . fluid spring characteristics
17/0408 . . . {details, e.g. antifreeze for suspension fluid, pumps, retarding means per se}
17/0416 . . . {regulated by varying the resiliency of hydropneumatic suspensions (B60G 17/048 takes precedence)}
17/0424 . . . . {by varying the air pressure of the accumulator}
17/0432 . . . . {by varying the number of accumulators connected to the hydraulic cylinder (B60G 17/0424 takes precedence)}
17/044 . . . Self-pumping fluid springs (pumps for liquids F04)
17/048 . . . with the regulating means inside the fluid springs (B60G 17/044 takes precedence)
17/0485 . . . . {the springs being pneumatic springs with a flexible wall, e.g. with levelling valves}
17/052 . . . Pneumatic spring characteristics (B60G 17/048 takes precedence {; valves per se F16K})
17/0521 . . . . {the spring having a flexible wall}
17/0523 . . . . {Regulating distributors or valves for pneumatic springs}
17/0525 . . . . . {Height adjusting or levelling valves}
17/0526 . . . . . {Distributor units, e.g. for retractable wheels (vehicles with retractable wheels per se B62D 61/12)}
17/0528 . . . . . {Pressure regulating or air filling valves}
17/056 . . . Regulating distributors or valves {for hydropneumatic systems}(B60G 17/044 - B60G 17/048, {B60G 17/0416} take precedence; {Fluid interconnection systems to control vehicle inclination B60G 21/06, B60G 21/10}; valves per se F16K)
17/0565 . . . . {Height adjusting valves}
17/06 . Characteristics of dampers {, e.g. mechanical dampers}(B60G 17/015 takes precedence)
17/08 . . Characteristics of fluid dampers (adjusting fluid dampers in general F16F 9/44 - F16F 9/53)

21/00 **Interconnection systems for two or more resiliently-suspended wheels, e.g. for stabilising a vehicle body with respect to acceleration, deceleration or centrifugal forces** (B60G 17/033 takes precedence {; levelling or stabilising systems for tippers B60P 1/045}; steering deflectable wheels combined with means for inwardly inclining the vehicle body on bends B62D 9/02)

21/002 . {longitudinally}
21/005 . {transversally}
21/007 . {means for adjusting the wheel inclination}
21/02 . permanently interconnected
21/023 . . {longitudinally}
21/026 . . {transversally}
21/04 . . mechanically
21/045 . . . between wheels on different axles on the same side of the vehicle, i.e. the left or the right side
21/05 . . . between wheels on the same axle but on different sides of the vehicle, i.e. the left and right wheel suspensions being interconnected
21/051 . . . . {Trailing arm twist beam axles}
21/052 . . . . . {Mounting means therefor}
21/053 . . . . . {adjustable}
21/055 . . . . Stabiliser bars
21/0551 . . . . . {Mounting means therefor}
21/0553 . . . . . {adjustable}
21/0555 . . . . . {including an actuator inducing vehicle roll}
21/0556 . . . . . {including a releasable coupling (B60G 21/0555 takes precedence)}
21/0558 . . . . . {including means varying the stiffness of the stabiliser (B60G 21/0556 takes precedence)}
21/06 . . fluid
21/067 . . . between wheels on different axles on the same side of the vehicle, i.e. the left or the right side
21/073 . . . between wheels on the same axle but on different sides of the vehicle, i.e. the left and right wheel suspensions being interconnected
21/08 . characterised by use of gyroscopes (gyroscopes for stabilising vehicle bodies without controlling suspension arrangements B62D 37/06)
21/10 . not permanently interconnected, e.g. operative only on acceleration, only on deceleration or only at off-straight position of steering
21/103 . . {longitudinally}
21/106 . . {transversally}

99/00 **Subject matter not provided for in other groups of this subclass**

99/002 . {Suspension details of the suspension of the vehicle body on the vehicle chassis}
99/004 . {Other suspension arrangements with rubber springs}
99/006 . {Other suspension arrangements with metallic springs}
99/008 . {Other suspension arrangements with fluid springs}

2200/00 **Indexing codes relating to suspension types**

2200/10 . Independent suspensions
2200/13 . . with longitudinal arms only
2200/132 . . . with a single trailing arm
2200/1322 . . . . with a wishbone or triangular arm
2200/1324 . . . . with a resilient trailing arm
2200/14 . . with lateral arms
2200/141 . . . with one trailing arm and one lateral arm only
2200/142 . . . with a single lateral arm, e.g. MacPherson type
2200/1422 . . . . the lateral arm being resilient
2200/1424 . . . . the lateral arm having an L-shape
2200/143 . . . with lateral arms crossing each other, i.e. X formation as seen along the longitudinal axis
2200/144 . . . with two lateral arms forming a parallelogram
2200/1442 . . . . including longitudinal rods
2200/154 . . . the lateral arm having an L-shape
2200/156 . . . wishbone-type arm formed by two links defining a virtual apex
2200/17 . . with a strut contributing to the suspension geometry by being articulated onto the wheel support
2200/18 . . Multilink suspensions, e.g. elastokinematic arrangements
2200/182 . . . with one longitudinal arm or rod and lateral rods
2200/184 . . . Assymetric arrangements
2200/20 . Semi-rigid axle suspensions
2200/21 . . Trailing arms connected by a torsional beam, i.e. twist-beam axles
2200/22 . . Trailing arms connected by a straight torsion bar
2200/23 . . Trailing arms connected by a U-shaped torsion bar
2200/24 . . Interconnected split axles
2200/30 . Rigid axle suspensions
2200/31 . . with two trailing arms rigidly connected to the axle
2200/312 . . with one of the two trailing arms being rigidly connected to the axle
2200/314 . . with longitudinally arranged arms articulated on the axle
2200/315 . . . at least one of the arms having an A or V shape
2200/318 . . two or more axles being mounted on a longitudinal rocking or walking beam
2200/32 . . pivoted
2200/322 . . . with a single pivot point and a straight axle
2200/324 . . . with a single pivot point and a triangular "T" or "U"-shaped axle, e.g. DeDion arrangement
2200/326 . . . with two laterally spaced pivots, e.g. trailing frame
2200/34 . . Stabilising mechanisms, e.g. for lateral stability
2200/341 . . . Panhard rod
2200/3415 . . . . Scott-Russel linkage
2200/342 . . . Watt linkage
2200/343 . . . with an axle suspended by two pivoted rods in "V"-arrangement, the rods being coupled at its apex
2200/344 . . . with an axle suspended by two pivoted rods in an inverted "V"-arrangement, the rods being coupled at its apex
2200/345 . . . with an axle suspended by two pivoted rods in "X"-arrangement
2200/346 . . . with an axle suspended by two laterally displaced rods having an imaginary point of intersection above the wheel axis
2200/347 . . . with an axle suspended by two laterally displaced rods having an imaginary point of intersection below the wheel axis
2200/40 . Indexing codes relating to the wheels in the suspensions

2200/42 . . Driven wheels or dead axles
2200/422 . . Driving wheels or live axles
2200/44 . . steerable
2200/445 . . Self-steered wheels
2200/446 . . Non-steerable wheels
2200/46 . . camber angle
2200/462 . . Toe-in/out
2200/4622 . . . Alignment adjustment
2200/464 . . Caster angle
2200/466 . . Damping acceleration or deceleration torque on wheel axle

2202/00 Indexing codes relating to the type of spring, damper or actuator

2202/10 . Type of spring
2202/11 . . Leaf spring
2202/112 . . . longitudinally arranged
2202/114 . . . transversally arranged
2202/116 . . . having a "C" form loaded only at its ends transversally to its central axis
2202/117 . . . having a "C" form loaded parallel to its central axis
2202/12 . . Wound spring
2202/122 . . . subjected to tension
2202/13 . . Torsion spring
2202/132 . . . comprising a longitudinal torsion bar and/or tube
2202/134 . . . comprising a transversal torsion bar and/or tube
2202/135 . . . Stabiliser bar and/or tube
2202/1351 . . . . comprising at least two stabiliser bars parallel to each other
2202/136 . . . Twist-beam type arrangement
2202/1362 . . . . including a second torsional element, e.g. second beam, stabiliser bar or tube
2202/14 . . Plastic spring, e.g. rubber
2202/141 . . . subjected to tension
2202/142 . . . subjected to shear, e.g. Neidhart type
2202/1422 . . . . Axial
2202/1424 . . . . Torsional
2202/143 . . . subjected to compression
2202/144 . . . of rotary type
2202/15 . . Fluid spring
2202/152 . . . Pneumatic spring
2202/1522 . . . . of rotary type
2202/1524 . . . . with two air springs per wheel, arranged before and after the wheel axis
2202/154 . . . with an accumulator
2202/16 . . Magnetic spring
2202/20 . Type of damper
2202/21 . . with two dampers per wheel, arranged before and after the wheel axis
2202/22 . . Rotary Damper
2202/23 . . Friction Damper
2202/24 . . Fluid damper
2202/242 . . . Pneumatic damper
2202/25 . . Dynamic damper
2202/30 . Spring/Damper and/or actuator Units
2202/31 . . with the spring arranged around the damper, e.g. MacPherson strut
2202/312 . . . The spring being a wound spring
2202/314 . . . The spring being a pneumatic spring
2202/32 . . The spring being in series with the damper and/or actuator
2202/322 . . . the damper being controllable
2202/40 . Type of actuator
2202/41 . . Fluid actuator
2202/412 . . . Pneumatic actuator
2202/413 . . . Hydraulic actuator
2202/414 . . . using electrohydraulic valves
2202/415 . . . using other types of valves, e.g. mechanically operated valves
2202/416 . . . using a pump, e.g. in the line connecting the lower chamber to the upper chamber of the actuator
2202/42 . . Electric actuator
2202/422 . . . Linear motor
2202/424 . . . electrostrictive materials, e.g. piezoelectric actuator
2202/43 . . Mechanical actuator
2202/432 . . . Spring motor
2202/44 . . Axial actuator, e.g. telescopic
2202/441 . . . where axial movement is translated to rotation of the connected end part
2202/442 . . Rotary actuator
2202/45 . . Other types, e.g. external jets for stability with particular characteristics
2202/49 . . Other type, e.g. external jets for stability

2204/00 Indexing codes related to suspensions <u>per se</u> or to auxiliary parts

2204/10 . Mounting of suspension elements
2204/11 . . Mounting of sensors thereon
2204/111 . . . on pneumatic springs
2204/112 . . . on dampers, e.g. fluid dampers
2204/113 . . . Tyre related sensors
2204/114 . . . Steering column mounted sensors
2204/115 . . . Wheel hub bearing sensors
2204/116 . . . Sensors coupled to the suspension arm
2204/1162 . . . . directly mounted on the suspension arm
2204/12 . . Mounting of springs or dampers
2204/121 . . . Mounting of leaf springs
2204/122 . . . Mounting of torsion springs
2204/1222 . . . . Middle mounts of stabiliser on vehicle body or chassis
2204/1224 . . . . End mounts of stabiliser on wheel suspension
2204/1226 . . . . on the trailing arms of a twist beam type arrangement
2204/124 . . . Mounting of coil springs
2204/1242 . . . . on a damper, e.g. MacPerson strut
2204/12422 . . . . . anchoring the end coils on the spring support plate
2204/1244 . . . . on a suspension arm
2204/1246 . . . . on twist beam axles
2204/125 . . . Mounting of rubber type springs
2204/126 . . . Mounting of pneumatic springs
2204/1262 . . . . on a damper
2204/127 . . . with the mounting of springs or dampers moving so that the direction of the related force vector can be changed, thus contributing to a variation of the loading of the wheel
2204/128 . . . Damper mount on vehicle body or chassis
2204/129 . . . Damper mount on wheel suspension or knuckle
2204/13 . . . with the spring, i.e. coil spring, or damper horizontally mounted
2204/1302 . . . . inside the vehicle frame

2204/14 . . Mounting of suspension arms
2204/143 . . . on the vehicle body or chassis
2204/1431 . . . . of an L-shaped arm
2204/1432 . . . . by vertical bolts or studs
2204/1434 . . . . in twist-beam axles arrangement
2204/147 . . . on the vehicle engine body
2204/148 . . . on the unsprung part of the vehicle, e.g. wheel knuckle or rigid axle
2204/1482 . . . . on rigid axle by elastic mount
2204/1484 . . . . on an intermediate upright strut upon which the stub axle is pivoted
2204/149 . . . Mounting of rigid axle on wheel knuckle
2204/15 . . Mounting of subframes
2204/16 . . Mounting of vehicle body on chassis
2204/162 . . . Cabins, e.g. for trucks, tractors
2204/17 . . Mounting of bogies, e.g. for trailers
2204/18 . . Mounting of vehicle engines
2204/182 . . . Electric motor on wheel support
2204/19 . . Mounting of transmission differential
2204/20 . . Mounting of accessories, e.g. pump, compressor
2204/201 . . . of fluid lines
2204/202 . . . of cables
2204/2022 . . . . using a suspension element (e.g. link, damper or spring) as part of the electrical circuitry
2204/22 . . Linking of trailers to trucks, e.g. truck-trailer connections
2204/30 . . In-wheel mountings
2204/40 . Auxiliary suspension parts; Adjustment of suspensions
2204/41 . . Elastic mounts, e.g. bushings
2204/4102 . . . having a pin or stud extending perpendicularly to the axis of the elastic mount
2204/4103 . . . having an eccentrically located inner sleeve
2204/4104 . . . Bushings having modified rigidity in particular directions
2204/41042 . . . . by using internal cam surfaces
2204/41043 . . . . formed by a U-shaped external bracket
2204/41044 . . . . in a shell for being loaded mainly in axial direction, e.g. piston rod mounts, longitudinal push-pull rod mounts
2204/41046 . . . . having the axis of an inner sleeve or pin inclined to the axis of the bush
2204/4106 . . . Elastokinematic mounts
2204/41062 . . . . hydromounts; interconnected mounts
2204/4108 . . . Resilient element being enclosed and or pres-tressed in a solid container
2204/414 . . Cardan joints
2204/416 . . Ball or spherical joints
2204/418 . . Bearings, e.g. ball or roller bearings
2204/419 . . Gears
2204/4191 . . . Planetary or epicyclic gears
2204/4192 . . . rack and pinion
2204/4193 . . . worm gears
2204/42 . . Joints with cam surfaces
2204/421 . . Pivoted lever mechanisms for mounting suspension elements, e.g. Watt linkage
2204/422 . . Links for mounting suspension elements
2204/4222 . . . for movement on predefined locus of, e.g. the wheel center
2204/423 . . Rails, tubes, or the like, for guiding the movement of suspension elements
2204/4232 . . . Sliding mounts
2204/424 . . Mechanisms for force adjustment, e.g. constant force mechanisms
2204/43 . . Fittings, brackets or knuckles
2204/4302 . . . for fixing suspension arm on the vehicle body or chassis
2204/4304 . . . Bracket for lower cylinder mount of McPherson strut
2204/4305 . . . Bracket for mounting of hydraulic lines on a damper cylinder
2204/4306 . . . Bracket or knuckle for rigid axles, e.g. for clamping
2204/43065 . . . . U-shaped bolts crossing each other
2204/4307 . . . Bracket or knuckle for torsional springs
2204/4308 . . . Protecting guards, e.g. for rigid axle damage protection
2204/44 . . Centering or positioning means
2204/4402 . . . Spacers or shims
2204/4404 . . . Retainers for holding a fixing element, e.g. bushing, nut, bolt etc., until it is tightly fixed in position
2204/45 . . Stops limiting travel
2204/4502 . . . using resilient buffer
2204/45021 . . . . for limiting upper mount movement of a McPherson strut
2204/4504 . . . using cable or band to prevent extension
2204/46 . . Means for locking the suspension
2204/4602 . . . Locking of a McPerson type strut upper mount on the vehicle body
2204/4604 . . . mechanically, e.g. using a hook as anticreep mechanism
2204/4605 . . . hydraulically, e.g. interrupting communication between the chambers of a hydraulic cylinder
2204/47 . . Means for retracting the suspension
2204/4702 . . . pneumatically
2204/61 . Adjustable during maintenance
2204/62 . Adjustable continuously, e.g. during driving
2204/80 . Interactive suspensions; arrangement affecting more than one suspension unit
2204/81 . . front and rear unit
2204/8102 . . . diagonally arranged
2204/82 . . left and right unit on same axle
2204/83 . . Type of interconnection
2204/8302 . . . Mechanical
2204/83022 . . . . using cables, wires, belts or chains
2204/8304 . . . using a fluid
2204/8306 . . . Permanent; Continuous

2206/00 Indexing codes related to the manufacturing of suspensions: constructional features, the materials used, procedures or tools

2206/01 . Constructional features of suspension elements, e.g. arms, dampers, springs
2206/011 . . Modular constructions
2206/0112 . . . Bogies for heavy vehicles
2206/0114 . . . Independent suspensions on subframes
2206/0116 . . . Integrated distribution control units with valves, accumulators, PCB's or the like
2206/012 . . Hollow or tubular elements
2206/0122 . . . having a U profile with plate closing the profile in the total or partial length of the element
2206/013 . . with embedded inserts for material reinforcement
2206/014 . . with reinforcing nerves or branches
2206/016 . . allowing controlled deformation during collision

2206/017 . . forming an eye for the bushing
2206/10 . . Constructional features of arms
2206/11 . . . the arm being a radius or track or torque or steering rod or stabiliser end link
2206/111 . . . . of adjustable length
2206/1112 . . . . . Manually, for alignment purposes
2206/1114 . . . . . Self-adjustable during driving
2206/1116 . . . . . Actively adjustable during driving
2206/12 . . . with two attachment points on the sprung part of the vehicle
2206/121 . . . the arm having an H or X-shape
2206/122 . . . the arm having L-shape
2206/123 . . . the arm having T-shape
2206/124 . . . the arm having triangular or Y-shape, e.g. wishbone
2206/13 . . . with more than two attachment points on the sprung part of the vehicle
2206/14 . . . the arm forming a U-shaped recess for fitting a bush
2206/141 . . . . The recess being integrally or seamlessly formed
2206/15 . . . the arm being resilient
2206/16 . . . the arm having a U profile and/or made of a plate
2206/161 . . . . with middle section narrower than end section
2206/162 . . . . with a plate closing the profile in the total or partial length of the arm
2206/20 . . Constructional features of semi-rigid axles, e.g. twist beam type axles
2206/201 . . . with detachable cross beam and/or torsion stabiliser bar/tube
2206/202 . . . with a radially deformed tube as a cross member
2206/203 . . . with outwardly bent trailing arms to increase the width of the support or wheelbase
2206/30 . . Constructional features of rigid axles
2206/31 . . . Straight axle
2206/312 . . . Cranked axle
2206/32 . . . Hollow cross section
2206/40 . . Constructional features of dampers and/or springs
2206/41 . . . Dampers
2206/42 . . . Springs
2206/422 . . . . Accumulators for hydropneumatic springs
2206/4222 . . . . . with a flexible separating wall; Membrane construction
2206/424 . . . . Plunger or top retainer construction for bellows or rolling lobe type air springs
2206/426 . . . . Coil springs having a particular shape, e.g. curved axis, pig-tail end coils
2206/427 . . . . Stabiliser bars or tubes
2206/428 . . . . Leaf springs
2206/50 . . Constructional features of wheel supports or knuckles, e.g. steering knuckles, spindle attachments
2206/60 . . Subframe construction
2206/601 . . . Hanger bracket
2206/602 . . . Single transverse beam
2206/604 . . . with two parallel beams connected by cross members
2206/605 . . . Flexible constructions
2206/606 . . . Complex constructions
2206/70 . . Materials used in suspensions
2206/71 . . . Light weight materials
2206/7101 . . . . Fiber-reinforced plastics [FRP]
2206/7102 . . . . Aluminium alloys
2206/7103 . . . . Magnesium alloys
2206/7104 . . . . Thermoplastics
2206/71042 . . . . . Polyester elastomer
2206/71043 . . . . . Polyamid elastomer
2206/71044 . . . . . Soft nylon
2206/7105 . . . . Porous materials, ceramics, e.g. as filling material
2206/72 . . . Steel
2206/722 . . . . Plates
2206/724 . . . . Wires, bars or the like
2206/73 . . . Rubber; Elastomers
2206/80 . . Manufacturing procedures
2206/81 . . . Shaping
2206/8101 . . . . by casting
2206/81012 . . . . . by injection moulding
2206/8102 . . . . by stamping
2206/81022 . . . . . by forging
2206/8103 . . . . by folding or bending
2206/81035 . . . . . involving heating to relieve internal stresses
2206/8104 . . . . by drawing
2206/8105 . . . . by extrusion
2206/8106 . . . . by thermal treatment, e.g. curing hardening, vulcanisation
2206/81062 . . . . . to relieve internal stresses, e.g. during folding or bending
2206/8107 . . . . by hydroforming
2206/8108 . . . . by twisting
2206/8109 . . . . by rolling
2206/811 . . . . by cutting
2206/8111 . . . . by machining
2206/8112 . . . . by thermal spraying of molten material
2206/82 . . . Joining
2206/8201 . . . . by welding
2206/82012 . . . . . Pressure welding
2206/82013 . . . . . Friction or heat welding
2206/82014 . . . . . Magnetic pulse welding (welding by magnetic pulse in general B23K 20/06)
2206/8205 . . . . by conical or compressed rubber clamping inserts as joining means
2206/8206 . . . . by riveting
2206/8207 . . . . by screwing
2206/8208 . . . . by hemming or seaming, e.g. by folding of the rim
2206/8209 . . . . by deformation
2206/82092 . . . . . by press-fitting
2206/821 . . . . by gluing
2206/83 . . . Punching
2206/84 . . . Hardening
2206/8401 . . . . Annealing
2206/8402 . . . . Quenching
2206/8403 . . . . Shot-peening
2206/85 . . . Filament winding
2206/90 . . Maintenance
2206/91 . . . Assembly procedures
2206/911 . . . . using a modification kit
2206/92 . . . Tools or equipment used for assembling
2206/921 . . . . Coil spring compressor
2206/93 . . . Tools used for adjustments

2206/931 . . . . McPherson strut positioning tool
2206/94 . . . Tools used for supporting parts
2206/99 . . . Suspension element selection procedure depending on loading or performance requirements, e.g. selection of damper, spring or bush

2300/00 Indexing codes relating to the type of vehicle
2300/02 . Trucks; Load vehicles
2300/022 . . Fork lift trucks, Clark
2300/024 . . Light trucks
2300/026 . . Heavy duty trucks
2300/0262 . . . Multi-axle trucks
2300/03 . Silo or fluid transporting vehicles
2300/04 . Trailers
2300/042 . . Semi-trailers
2300/044 . . Truck-trailer connections
2300/06 . Cranes
2300/07 . Off-road vehicles
2300/08 . Agricultural vehicles
2300/082 . . Tractors
2300/083 . . Boom carrying vehicles, e.g. for crop spraying
2300/084 . . Ridable lawn mowers
2300/09 . Construction vehicles, e.g. graders, excavators
2300/10 . Railway vehicles
2300/102 . . having track following mechanismn for lateral stability
2300/12 . Cycles; Motorcycles
2300/122 . . Trikes
2300/124 . . Quads
2300/13 . Small sized city motor vehicles
2300/14 . Buses
2300/16 . Aeroplanes
2300/18 . Helicopters
2300/20 . Toys
2300/22 . Perambulators
2300/24 . Wheelchairs
2300/26 . Carts
2300/27 . Racing vehicles, e.g. F1
2300/28 . Amphibious vehicles
2300/30 . Load ramps
2300/32 . Track vehicles
2300/322 . . Snowmobiles
2300/34 . Ambulances
2300/36 . Independent Multi-axle long vehicles
2300/37 . Vehicles having steerable wheels mounted on a vertically moving column
2300/38 . Low or lowerable bed vehicles
2300/40 . Variable track or wheelbase vehicles
2300/402 . . Extra load carrying wheels, e.g. tag axles
2300/45 . Rolling frame vehicles
2300/50 . Electric vehicles; Hybrid vehicles
2300/60 . Vehicles using regenerative power

2400/00 Indexing codes relating to detected, measured or calculated conditions or factors
2400/05 . Attitude
2400/051 . . Angle
2400/0511 . . . Roll angle
2400/0512 . . . Pitch angle
2400/0513 . . . Yaw angle
2400/0514 . . . Wheel angle detection
2400/05142 . . . . Wheel camber
2400/05144 . . . . Wheel toe
2400/05146 . . . . Wheel caster
2400/0516 . . . Angular position of a suspension element
2400/05162 . . . . the element being a suspension arm
2400/052 . . Angular rate
2400/0521 . . . Roll rate
2400/0522 . . . Pitch rate
2400/0523 . . . Yaw rate
2400/053 . . Angular acceleration
2400/0531 . . . Roll acceleration
2400/0532 . . . Pitch acceleration
2400/0533 . . . Yaw acceleration
2400/10 . Acceleration; Deceleration
2400/102 . . vertical
2400/104 . . lateral or transversal with regard to vehicle
2400/1042 . . . using at least two sensors
2400/106 . . longitudinal with regard to vehicle, e.g. braking
2400/1062 . . . using at least two sensors
2400/20 . Speed
2400/202 . . Piston speed; Relative velocity between vehicle body and wheel
2400/204 . . Vehicle speed
2400/2042 . . . Lateral speed
2400/206 . . Body oscillation speed; Body vibration frequency
2400/208 . . of wheel rotation
2400/25 . Stroke; Height; Displacement
2400/252 . . vertical
2400/256 . . horizontal
2400/257 . . . transversal with regard to vehicle
2400/258 . . . longitudinal with regard to vehicle
2400/30 . Propulsion unit conditions
2400/302 . . Selected gear ratio; Transmission function
2400/304 . . . neutral position
2400/306 . . . overdrive
2400/31 . . Clutch condition
2400/32 . . Torque on propulsion shaft
2400/33 . . Throttle position
2400/34 . . Accelerator pedal position
2400/35 . . Position of fuel or air injector
2400/36 . . Functioning of turbocharger
2400/37 . . Brake pad or disc friction
2400/38 . . Speed of engine rotation
2400/382 . . . Ignition switch
2400/39 . . Brake pedal position
2400/40 . Steering conditions
2400/41 . . Steering angle
2400/412 . . . of steering wheel or column
2400/4122 . . . . Neutral position detection
2400/42 . . Steering torque
2400/44 . . Steering speed
2400/46 . . Steering frequency
2400/47 . . Rear wheel steering
2400/50 . Pressure
2400/51 . . in suspension unit
2400/512 . . . in spring
2400/5122 . . . . Fluid spring
2400/51222 . . . . . Pneumatic
2400/518 . . . in damper
2400/5182 . . . . Fluid damper
2400/52 . . in tyre
2400/60 . Load

2400/61 . . Load distribution
2400/62 . . Seat occupation; Passenger presence
2400/63 . . Location of the center of gravity
2400/64 . . Wheel forces, e.g. on hub, spindle or bearing
2400/70 . Temperature of vehicle part or in the vehicle
2400/71 . . of suspension unit
2400/712 . . . of spring
2400/7122 . . . . Fluid spring
2400/716 . . . of damper
2400/7162 . . . . Fluid damper
2400/72 . . in vehicle interior
2400/73 . . of other part than suspension unit
2400/732 . . . of propulsion unit
2400/80 . Exterior conditions
2400/82 . . Ground surface
2400/821 . . . Uneven, rough road sensing affecting vehicle body vibration
2400/822 . . . Road friction coefficient determination affecting wheel traction
2400/8222 . . . . Hydroplaning
2400/823 . . . Obstacle sensing
2400/824 . . . Travel path sensing; Track monitoring
2400/84 . . Atmospheric conditions
2400/841 . . . Wind
2400/842 . . . Temperature
2400/8422 . . . . of air
2400/8424 . . . . of ground or road
2400/843 . . . Humidity; Rainfall
2400/845 . . . Darkness
2400/847 . . . Sunshine; Light
2400/90 . Other conditions or factors
2400/91 . . Frequency
2400/92 . . Travelling or driving time
2400/922 . . Travelling distance
2400/94 . . Deformation of a vehicle part
2400/942 . . . of vehicle body
2400/95 . . Position of vehicle body elements
2400/952 . . . of door or bonnet
2400/954 . . . Wheelbase
2400/96 . . Presence, absence or inactivity of driver
2400/97 . . Relation between towing and towed vehicle, e.g. tractor-trailer combination
2400/972 . . . Angle of articulation
2400/98 . . Stabiliser movement

2401/00 Indexing codes relating to the type of sensors based on the principle of their operation

2401/10 . Piezoelectric elements
2401/11 . Electrostrictive transducers
2401/12 . Strain gauge
2401/122 . . Wheatstone bridge circuit
2401/14 . Photo or light sensitive means, e.g. Infrared
2401/142 . . Visual Display Camera, e.g. LCD
2401/144 . . Fiber optic sensor
2401/15 . Doppler effect
2401/16 . GPS track data
2401/17 . Magnetic/Electromagnetic
2401/172 . . Hall effect
2401/174 . . Radar
2401/176 . . Radio or audio sensitive means, e.g. Ultrasonic
2401/19 . Speech recognising means
2401/20 . Switches, e.g. mercury or ball type switches
2401/21 . Laser
2401/22 . Radioactivity sensitive materials
2401/23 . Memory materials
2401/24 . Heat sensitive materials; temperature gauge
2401/25 . Capacitance type, e.g. as level indicator
2401/26 . Resistance type, e.g. as level indicator
2401/27 . Gravitational, e.g. pendulum or axial movement type
2401/28 . Gyroscopes
2401/90 . Single sensor for two or more measurements
2401/902 . . the sensor being an xy axis sensor
2401/904 . . the sensor being an xyz axis sensor

2500/00 Indexing codes relating to the regulated action or device

2500/02 . Supply or exhaust flow rates; Pump operation
2500/022 . . Minimisation of pressure cavitation effects upon demand
2500/04 . using inertia type valves
2500/10 . Damping action or damper
2500/102 . . stepwise
2500/104 . . continuous
2500/106 . . duty rate
2500/11 . . Damping valves
2500/112 . . . Fluid actuation
2500/114 . . . pressure regulating valves
2500/116 . . . for damping pressure oscillations of the fluid in hydraulic lines
2500/20 . Spring action or springs
2500/201 . . Air spring system type
2500/2012 . . . Open systems
2500/2014 . . . Closed systems
2500/202 . . Height or leveling valve for air-springs
2500/2021 . . . Arrangement of valves
2500/2022 . . . with valve seat actuation for selectively adjusting neutral height
2500/203 . . Distributor valve units comprising several elements, e.g. valves, pump or accumulators
2500/204 . . Pressure regulating valves for air-springs
2500/2041 . . . for variable volume air springs, e.g. using accumulators as expansion chambers
2500/2042 . . . Air filling valves
2500/2043 . . . Wheatstone bridge type valve arrangements
2500/2044 . . . Air exhausting valves
2500/2046 . . . Pressure equalising valves between two units
2500/205 . . Air-compressor operation
2500/206 . . Variable pressure accumulators for hydropneumatic suspensions
2500/2062 . . . by varying the air-pressure of the accumulator
2500/2064 . . . by varying the number of accumulators connected in parallel to the hydraulic cylinder
2500/22 . . Spring constant
2500/30 . Height or ground clearance
2500/302 . . using distributor valves
2500/32 . . of only one vehicle part or side
2500/322 . . . only front part
2500/324 . . . only rear part
2500/326 . . . only left or right side
2500/40 . Steering
2500/42 . . Sensibility

2600/00 **Indexing codes relating to particular elements, systems or processes used on suspension systems or suspension control systems**

2600/02 . Retarders, delaying means, dead zones, threshold values, cut-off frequency, timer interruption
2600/04 . Means for informing, instructing or displaying
2600/042 . . Monitoring means
2600/0422 . . . involving data transmission, e.g. via satellite or GPS; for data monitoring, telemetry or platooning purposes
2600/044 . . Alarm means
2600/07 . Inhibiting means
2600/08 . Failure or malfunction detecting means
2600/082 . . Sensor drift
2600/084 . . Supervisory systems
2600/086 . . Redundant systems
2600/09 . Feedback signal
2600/11 . Feedforward signal
2600/12 . Sampling or average detecting; Addition or substraction
2600/122 . . Summation signal
2600/124 . . Error signal
2600/14 . Differentiating means, i.e. differential control
2600/16 . Integrating means, i.e. integral control
2600/17 . Proportional control, i.e. gain control
2600/172 . . Weighting coefficients or factors
2600/18 . Automatic control means
2600/181 . . Signal modulation; pulse-width, frequency-phase
2600/182 . . Active control means
2600/184 . . Semi-Active control means
2600/186 . . Analogue Controller Details and Signal Treatment
2600/187 . . Digital Controller Details and Signal Treatment
2600/1871 . . . Optimal control; Kalman Filters
2600/1872 . . . Observer; Luaponov function
2600/1873 . . . Model Following
2600/1874 . . . Modal analysis
2600/1875 . . . Other parameter or state estimation methods not involving the mathematical modelling of the vehicle
2600/1876 . . . Artificial intelligence
2600/1877 . . . Adaptive Control
2600/1878 . . . Neural Networks
2600/1879 . . . Fuzzy Logic Control
2600/188 . . Spectral analysis; Transformations
2600/1881 . . . Integral
2600/1882 . . . Fourier
2600/1883 . . . z-transform
2600/1884 . . . Laplace
2600/1885 . . . Euler equations
2600/189 . . Statistical analysis
2600/20 . Manual control or setting means
2600/202 . . using a remote, e.g. cordless, transmitter or receiver unit
2600/204 . . Joystick actuated suspension
2600/206 . . Control-by-wire
2600/21 . Self-controlled or adjusted
2600/22 . Magnetic elements
2600/24 . . permanent magnets
2600/26 . . Electromagnets; Solenoids
2600/28 . Temporary fluctuations
2600/41 . SISO system, i.e. single input - single output system
2600/43 . MIMO system, i.e. multi input - multi output system
2600/44 . Vibration noise suppression
2600/60 . Signal noise suppression; Electronic filtering means
2600/602 . . high pass
2600/604 . . low pass
2600/66 . Humidifying or drying means
2600/68 . Filtering means, e.g. fluid filters
2600/70 . Computer memory; Data storage, e.g. maps for adaptive control
2600/702 . . Parallel processing
2600/704 . . Electronic tags containing data, e.g. identification number of a component; Gain values for the control of the unit, etc.
2600/71 . Distributed control; Master - slave controllers; Remote control units
2600/72 . Cooling or warming means
2600/73 . Electrical control
2600/74 . Analog systems
2600/76 . Digital systems
2600/77 . A/D, D/A signal converters
2600/82 . duty rate function
2600/85 . Speed of regulation
2600/90 . other signal treatment means

2800/00 **Indexing codes relating to the type of movement or to the condition of the vehicle and to the end result to be achieved by the control action**

2800/01 . Attitude or posture control
2800/012 . . Rolling condition
2800/0122 . . . Roll rigidity ratio; Warping
2800/0124 . . . Roll-over conditions
2800/014 . . Pitch; Nose dive
2800/016 . . Yawing condition
2800/019 . . Inclination due to load distribution or road gradient
2800/0192 . . . longitudinal with regard to vehicle
2800/0194 . . . transversal with regard to vehicle
2800/16 . Running
2800/162 . . Reducing road induced vibrations
2800/164 . . Heaving; Squatting
2800/166 . . Platooning
2800/18 . Starting, accelerating
2800/182 . . Traction
2800/20 . Stationary vehicle
2800/202 . . kneeling, e.g. for letting passengers on/off
2800/203 . . lowering the floor for loading/unloading
2800/204 . . adjusting floor height to the loading ramp level
2800/2042 . . . using an anticreep mechanism to lock the height
2800/205 . . jacking-up for changing tyre or vehicle inspection
2800/21 . Traction, slip, skid or slide control
2800/212 . . Transversal; Side-slip during cornering
2800/213 . . by applying forward/backward torque on each wheel individually
2800/214 . . by varying the load distribution
2800/215 . . by applying a braking action on each wheel individually
2800/22 . Braking, stopping
2800/222 . . during collision
2800/224 . . automatically, based on dangerous living style
2800/226 . . automatically, based on stopping at a preset or target point position
2800/24 . Steering, cornering

2800/242 . . Obstacle avoidance manoeuvre
2800/244 . . Oversteer
2800/246 . . Understeer
2800/248 . . Neutral steering behaviour
2800/70 . Estimating or calculating vehicle parameters or state variables
2800/702 . . Improving accuracy of a sensor signal
2800/7022 . . . Calibration of a sensor, e.g. automatically
2800/704 . . predicting unorthodox driving conditions for safe or optimal driving
2800/80 . Detection or control after a system or component failure
2800/802 . . Diagnostics
2800/85 . System Prioritisation
2800/87 . System configuration based on vehicle type or model
2800/90 . System Controller type
2800/91 . . Suspension Control
2800/912 . . . Attitude Control; levelling control
2800/9122 . . . . ARS - Anti-Roll System Control
2800/9123 . . . . Active Body Control [ABC]
2800/9124 . . . . Roll-over protection systems, e.g. for warning or control
2800/914 . . . Height Control System
2800/915 . . . Suspension load distribution
2800/916 . . . Body Vibration Control
2800/92 . . ABS - Brake Control
2800/922 . . . EBV - Electronic brake force distribution
2800/925 . . Airbag deployment systems
2800/93 . . Skid or slide control [ASR]
2800/94 . . Electronic Stability Program (ESP, i.e. ABS +ASC+EMS)
2800/95 . . Automatic Traction or Slip Control [ATC]
2800/952 . . . Electronic driving torque distribution
2800/954 . . . Four-wheel drive
2800/96 . . ASC - Assisted or power Steering control
2800/962 . . . Four-wheel steering
2800/963 . . . Steer-by-wire
2800/964 . . . Auto-navigation
2800/965 . . . Automatic or driver-independent manoeuvre, e.g. for obstacle avoidance or roll-over prevention
2800/97 . . Engine Management System [EMS]
2800/972 . . Electronic Differential Lock [EDS]
2800/98 . . Intelligent Transportation System or Bus [IDB]
2800/982 . . Active Cruise Control, e.g. DISTRONIC type
2800/984 . . Tyre Pressure Monitoring Systems